

2018 Communication & Stakeholder Engagement Report

National Carp Control Plan

Seftons

14 September 2018

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**NCCP 2018 Communications & Stakeholder Engagement Strategy
2017-164**

2018

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Researcher Contact Details

Name: Seftons
Address: 21 Bourke St
Tamworth NSW 2340
Phone: 02-6766 5222

Fax:
Email: robbie.sefton@seftons.com.au

FRDC Contact Details

Address: 25 Geils Court
Deakin ACT 2600
Phone: 02 6285 0400
Fax: 02 6285 0499

Email: frdc@frdc.com.au
Web: www.frdc.com.au

In submitting this report, the researcher has agreed to FRDC publishing this material in its edited form.

Foreword

The following report summarises the communications and engagement support delivered to the National Carp Control Plan team from December 2017 through until August 2018.

The program was due to conclude in December 2018, comprising of 13 months in total, however, Seftons recommended to the NCCP that it should pause activity in August 2018 until clarity was reached on program timelines and funding.

This report summarises what has been delivered by Seftons for the NCCP during past 9 months – demonstrating significant progress has been made to engage and consult stakeholders.

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Acknowledgments

Seftons would like to acknowledge the guidance and strategic counsel provided by the National Carp Control Plan Communications Working Group (CWG) throughout the delivery of this program of activity.

The CWG members, comprising communications representatives of each government jurisdiction in Australia, were consulted on the proposed strategy and provided guidance throughout its implementation. The deliverables reflect the consensus of CWG members of program strategy and delivery.

Abbreviations

NCCP – National Carp Control Plan

CWG – Communications Working Group

SAG – Science Advisory Group

PAG – Policy Advisory Group

DAWR – Federal Government’s Department of Agriculture and Water Resources

ALGA - Australian Local Government Association

MDA - Murray Darling Association

Executive Summary

What the report is about

Strategic communications company Seftons was engaged by the Fisheries Research and Development Corporation (FRDC) in December 2017 to implement a 13-month 2018 Communications & Engagement Strategy for the National Carp Control Plan (NCCP). The Strategy was developed to build on achievements of the previous 5-month communications program – also implemented by Seftons.

Seftons implemented communications and engagement initiatives which included refining key messages, a media relations campaign, providing issues and risk management counsel, developing communications collateral, a stakeholder engagement plan, managing online community engagement platform “Bang the Table”, identifying key strategic alliances, and co-ordinating keynote speaking opportunities for NCCP. Seftons was also available to support NCCP as required on a 24/7 basis.

This document reports on the activities and outcomes achieved from the 2018 Communications & Engagement Strategy for the information of FRDC.

It should be noted the outcomes detailed in this document have been achieved over a 9-month period to 24 August 2018, following Seftons decision to cease its contract with FRDC following uncertainty around NCCP program timelines.

Background

Seftons was contracted to deliver the 2018 Communications & Engagement Strategy to build on the 2017 communications plan, specifically to broaden the reach of messaging about the NCCP, its objectives and scope of work, and build further awareness around the significant impacts of carp on our waterways.

With the NCCP research program well underway and engagement established with media and key stakeholder groups, the focus of the 13-month Strategy was to transition carp control from a topic of interest to niche groups and industry representatives, to a national issue of relevance and importance to all Australians. Seftons developed a strategic plan for the 2018 program which was approved by FRDC/NCCP and received the endorsement of the NCCP Communications Working Group.

Aims/objectives

The overarching aim of the Strategy is to communicate and engage with stakeholders, interest groups and the wider community about the NCCP, and build support and trust in the program and its objectives. The objectives for the 2018 Communications & Stakeholder Engagement Strategy include:

- To establish and maintain effective and enduring relationships with key stakeholders for the life of the Program.
- To facilitate processes that encourage stakeholders to contribute their knowledge and understanding of local issues and impacts.
- To work as a team to inform decision making and effectively contribute toward the delivery of the best possible program outcomes.
- To raise awareness across key stakeholders and the broader community about the program, its processes and objectives through a targeted communications strategy which includes agreed key messages and a range of tailored communications products and activities.
- To build a mandate for recovery of native species and habitats in targeted freshwater river systems and waterways within key stakeholder groups and the broader community through biological control and other control measures outlined in the NCCP by December 2018.

- To foster support for the process and build trust in the program within key stakeholder groups and the broader community by December 2018.

Methodology

To deliver the 2018 Communications & Engagement Strategy, Seftons:

- Managed, tracked and reported on the project via daily, weekly and monthly reporting
- Developed an implementation strategy and regularly updated based on the changing scope of the program
- Refined key messages to reflect the needs of the program
- Executed a media relations campaign in line with research progress
- Provided issues and risk management counsel and reactive media support
- Developed communications collateral
- Implemented a stakeholder engagement plan
- Produced stakeholder engagement materials
- Built and managed Bang the Table, providing 7 day per week support
- Managed Communications Working Group, acting as interim Chair for a period of time
- Identified and facilitated key strategic partnerships/alliances
- Identified and co-ordinated keynote speaking opportunities
- Provided event management support for Matt Barwick
- Provided weekly media analysis and reporting for NCCP

Results/key findings

The 2018 Communications & Engagement Strategy implemented by Seftons delivered against the objectives despite the reduced program timeline and change to NCCP program milestones. Media relations and stakeholder engagement plans were implemented to generate significant media coverage and build on relationships already established with key stakeholders and special interest groups. A strategic alliance was formed with the Murray Darling Association and the subsequent 167 Councils within its jurisdiction, and partnerships progressed with Clean Up Australia Day and Gone Fishing Day – with the view to publicly promote the partnerships in the final quarter of the 2018 program.

With Seftons regularly sharing NCCP news with more than 600 media outlets, print articles featured in a broad range of rural, regional, metropolitan and national media outlets.

Key program results and highlights included:

- A strategic partnership with MDA Council and its subsequent 167 Councils within its jurisdiction, secured their involvement in CWG meetings and provided messaging for their monthly newsletter. Note the Australian Local Government Association (ALGA) was also engaged to reach Councils outside the MDA jurisdiction with an invitation by ALGA for NCCP communication at their national conference.

- A strategic partnership with Australian Recreational Fishing Foundation with plans to launch Carp Awareness Week as part of Gone Fishing Day in October 2018.
- A commitment from Clean Up Australia Day to form a strategic alliance once the NCCP program was ready to discuss recommendations regarding Clean Up.
- A dedicated media relations program which resulted in:
 - Widespread media coverage including but not limited to, a national story on ABC's Landline, NCCP stories across metropolitan titles including The Land, The Weekly Times, Queensland Times, Courier Mail, Canberra Times, Gold Coast Sun, Sydney Morning Herald, Weekender Herald.
 - Significant and regular positive coverage across ABC Country Hour, ABC Radio Sydney, ABC Radio Canberra, with 72 items in total across the ABC radio network.
 - Television coverage including a fair and balanced piece on ABC Landline, as well as WIN Canberra, Prime 7 Wagga Wagga, Prime 7 Tamworth as well as Southern Cross Broken Hill / Port Pirie, to name a few.
 - Note further national television coverage was planned to underpin Gone Fishing Day in October with stories ideas included in the strategy for Channel 7 Sunrise / Weekend Sunrise, Channel 9 Today / Weekend Today, Channel 10 The Project and Living Room.
- Strong engagement, in partnership with Dr Jacki Schirmer, with key stakeholders including the Koi Society of Australia, Australian Veterinarian Association and commercial fishing sector (see Stakeholder summary of this report).
- A dedicated Government Engagement program to inform key advisors and ministers and respond to enquiries relating to program objectives and program status including confirmed meetings with Senator Anne Ruston, Minister for Agriculture and Water Resources Minister David Littleproud's advisors, and an upcoming meeting scheduled for Deputy Prime Minister Michael McCormack (see Government Engagement summary in report).
- Participation, management and interim Chairing of Communications Working Group Meetings, as well as attendance at Principal Investigators Workshop.
- Expression of interest secured from Chair of National Rural Press Club to support launch of NCCP Final Recommendations to Government.
- Strategic alliance with the Science Media Centre to broadcast keynote updates from NCCP to science media nationally (to support NCCP Draft Plan and Final Recommendations announcements and PI Workshops – note May PI Broadcast placed on hold due to program delay).
- Sourced, built and managed seven days per week with a full time resource. www.yoursay.carp.gov.au – NCCP's Stakeholder Engagement Platform.
- Provided digital and social media support to NCCP in the absence of an internal resource within the NCCP project team.
- Keynote speaking opportunities secured / negotiated at the Murray Darling Association National Conference, Australian Local Government Association Conference, NSW Local Government Water Conference, Cotton Conference, Australian Rural Leadership Foundation Conference

- Worked closely with NCCP to support the finalisation of NCCP's Clearer Waters video series.
- Delivered consistent and transparent reporting to NCCP on a weekly and monthly basis.

Recommendations

The objectives outlined in the 2018 Communications and Stakeholder Engagement Strategy, and the tactics recommended to support delivery of the Draft Plan and Final Recommendations were effective and successful in reaching out to and engaging with media and stakeholders. The delays experienced by NCCP were not detrimental to the implementation of the communications and stakeholder engagement program, however it did lead to the recommendation in August 2018 that the program be placed on hold while clarity over future direction of the program was reached. Once clarity is received around program timelines, the Strategy should be revisited and communications and engagement activities implemented as recommended.

Keywords

n/a

Introduction

Seftons was initially engaged by the Fisheries Research and Development Corporation (FRDC) in June 2017 to undertake a five-month communications program, managing communications strategies and activities for the National Carp Control Plan (NCCP).

At the time of the appointment, the National Stakeholder Engagement and Communications Strategy had already been developed by the NCCP, and as such Seftons expanded on the recommendations to form the five-month communications program.

Initiatives undertaken during this period ensured that the NCCP was proactively engaging with stakeholders, media and the wider community, and that communications underpinned broader program activity with a consistent approach, themes and messaging.

On completion of the initial communications program in November 2017, Seftons developed a 13-month Communications & Stakeholder Engagement Strategy designed to broaden the reach of messaging about the NCCP, its objectives and scope of work, and build further awareness around the significant impacts of carp on our waterways.

With the NCCP research program well underway and engagement established with media and key stakeholder groups, the focus of the 13-month Strategy was to transition carp control from a topic of interest to niche groups and industry representatives, to an issue of relevance and importance to all Australians.

The Strategy used a multi-pronged approach:

- A proactive media relations program to reach audiences
- A targeted stakeholder engagement program to engage key audiences
- A dedicated and controlled platform to address queries, concerns, questions with stakeholders and the public (www.yoursay.carp.gov.au)
- A consultative model which utilised the expertise of state and territory government expertise via the NCCP Communications Working Group

Seftons worked closely with the Communications Working Group, which comprised of representatives from each of the state / territory government agricultural departments, to ensure their ongoing support of the communication and engagement initiatives, as well as the general direction of the program. After the decision by Alison Penfold to step down as Chair, Seftons acted as interim Chair and provided options of replacement Chairs for NCCP to consider.

It is important to note that the 2018 Communications & Engagement Strategy was written on the premise that research milestones and reports would be available on a monthly basis, and that the NCCP would release the Draft Plan in July 2018 and Final Recommendations in December 2018.

When it became apparent that these NCCP milestones were delayed due to external factors, Seftons communicated to the NCCP that the communications and engagement program would be adjusted to reach key stakeholders using alternative tactics and channels – ensuring continued success for the NCCP and delivery against contracted outputs.

Objectives

The objectives for the 2018 Communications & Stakeholder Engagement Strategy (based on the NCCP Request for Tender) include:

- To establish and maintain effective and enduring relationships with key stakeholders for the life of the Program.
- To facilitate processes that encourage stakeholders to contribute their knowledge and understanding of local issues and impacts.
- To work as a team to inform decision making and effectively contribute toward the delivery of the best possible program outcomes.
- To raise awareness across key stakeholders and the broader community about the program, its processes and objectives by December 2018 through a targeted communications strategy which includes agreed key messages and a range of tailored communications products and activities.
- To build a mandate for recovery of native species and habitats in targeted freshwater river systems and waterways within key stakeholder groups and the broader community through biological control and other control measures outlined in the NCCP by December 2018.
- To foster support for the process and build trust in the program within key stakeholder groups and the broader community by December 2018.

Method

Managed, tracked and reported on the project

Seftons implemented a thorough reporting process to ensure that the NCCP was kept closely informed of the communications and stakeholder engagement strategic direction and work delivered, particularly considering the changing scope of the NCCP program. This reporting enabled NCCP to raise any concerns it had in relation to program delivery by Seftons, or to adjust the deliverables to meet the needs of the program.

In summary, there were up to five reporting methods followed by Seftons on a weekly/monthly basis. These included weekly Work-in-Progress meetings with the wider NCCP team, dedicated communications meetings, end of week output reports as well as monthly milestone reporting. Below is a detailed summary of meetings and reporting mechanisms implemented to ensure the NCCP was up-to-date and informed of the work being delivered by the Seftons.

1. *Weekly - Monday AM Work in Progress meeting (NCCP Team – NCCP, Comms, Policy, Operations, Science and Administration)*
 - Minimum of one, maximum of three representatives from Seftons participated in weekly WIP meeting with wider NCCP team – approximately one hour per week.
 - Provided a communications update at each meeting of strategic recommendations, priority focuses and deliverables.
 - On-occasion chaired and minuted the meeting.
2. *Weekly - Monday AM Email Update (introduced in August)*
 - Seftons suggested an additional layer of reporting in addition to WIP involvement which included an email summary outlining Seftons tasks for the week, NCCP tasks for the week and program status against deliverables. This was introduced in August 2018 and would have continued should the program of remained ongoing.
3. *Weekly - Media Analysis Reporting*
 - At the start of each week, Seftons would distribute to NCCP a weekly media analysis report which captured positive, negative and neutral media, geographical spread of media and sentiment. Seftons extended the scope of this report to include links to all articles for ease of reading by NCCP (in addition to the media monitoring received daily).
4. *Weekly - Tuesday Communications WIP*
 - Seftons also participated in a weekly Communications work in progress meeting with NCCP to update them on details re program status and deliverables. This WIP was subject to NCCP availability but took place most weeks and was attended by up to four Seftons representatives.
5. *Weekly - Friday Executive Director Reporting*
 - Every Friday, Seftons sent a list of weekly deliverables / outputs and WIP items to NCCP for inclusion in the FRDC Executive Director's report. The report summarised the key deliverables under the NCCP Communications and Stakeholder Engagement program.
6. *Monthly - End of Month Reporting*
 - Every month Seftons wrote a detailed report to accompany the monthly invoice which included:
 - o A declaration of whether the program met the milestones

- A summary of the deliverables under key components of the contract (proactive media relations, stakeholder / government engagement, Communications Working Group, Bang the Table, communications collateral, jurisdictional engagement, issues management / reactive support)
- A PDF of all documents delivered during that month (plans, reports, communications collateral, newsletter copy, media releases, media alerts, key messages, briefing documents).

7. *NCCP Planning Workshops*

- Seftons core communications team of three senior professionals were also scheduled to attend the NCCP Planning Meeting to be held in Port Stephens in late August and had confirmed accommodation and travel. This two day meeting was designed to discuss strategy and ensure integration across the four pillars of the program (Science, Operations, Policy and Communications).

A dedicated, core team of communications specialists (outlined below) worked with the NCCP under clearly defined roles. As the NCCP communicated that it required full service communications support, the Seftons team was available to support the NCCP 24 hours a day/seven day a week on an as needs basis.

Robbie Sefton – Managing Director and Strategic Counsel

Robbie facilitated many of the stakeholder engagement workshops and community meetings as part of the 2018 contract. Robbie also acted as Chair of NCCP's Communications Working Group while a permanent Chair was appointed, and also provided strategic counsel to NCCP and FRDC on an as needed basis.

Jayne Goldring – Account Director and Account Lead

Jayne oversaw the management of the NCCP Communications and Engagement Program and managed the Seftons team. She was also the key point of contact for NCCP on all communications related matters.

Kerin Heatley – Account Director & Stakeholder Engagement Manager

Seftons delivered the stakeholder engagement components of our contract which saw her oversee and implement the local, state and federal government engagement, meetings and discussions with key stakeholder groups, management of Matt's events diary and speaking engagements including at conferences, Council ROC meetings and events. Kerin also contributed to all weekly reporting and participated in WIP meetings as required.

Katie Paynter – Account Director & Media Relations Manager

Katie oversaw the media relations component of the NCCP program. She worked closely with the NCCP team to identify story opportunities from within the research, prepare the stories and liaise with the media to secure coverage. Katie worked closely with the research leads, the broader NCCP team and Communications Working Group. In addition, Katie oversaw the management of NCCP's www.yoursay.carp.gov.au site. Katie participated in weekly meetings and contributed to all weekly and monthly reporting.

Mikala Dickie – Account Coordinator and General NCCP Account Support

Mikala supported the NCCP team to deliver the communications and engagement requirements. She was also responsible for the delivery of the NCCP weekly media analysis reports and end of week and monthly reporting. She liaised closely with the Murray Darling Association to leverage that partnership and also provided back-end support for www.yoursay.carp.gov.au

Mitchell Hughes – Account Director and Consultation Facilitator

Mitchell worked closely with Robbie to also facilitate the stakeholder engagement and community

workshop meetings held throughout Australia. He facilitated these meetings on behalf of NCCP, working closely with NCCP and the natural resource management groups. Mitchell was also instrumental in the set up and overall technical management of www.yoursay.carp.gov.au.

Olivia Royle – Digital Media Manager

Seftons regularly informed NCCP that it required some dedicated digital media support to address the growing negative sentiment online and also assist with disseminating NCCP messaging online. Digital media was not included in Seftons agreed contract. The CWG agreed that a resource was required however NCCP were unable to commit the funds to meet this need. As such, as a complimentary offering to the NCCP, Seftons brought Olivia Royle, Seftons Digital Media Manager, on to the account to assist with some social media kits for NCCP to leverage the production of Clearer Waters and other digital content. She was not part of Seftons agreed team but was brought on to meet the needs of the program.

Seftons also relied on a number of additional internal resources to meet peak periods in the program including account coordination and digital back-end technology support.

Developed implementation strategy

The overarching 2018 Communications & Stakeholder Engagement Strategy, approved by NCCP and the NCCP Communications Working Group, was used as the basis of activity. An implementation strategy was developed in the form of a working action plan to ensure all elements of the Communications & Engagement Strategy aligned, including stakeholder engagement activities, strategic partnerships/community programs and media relations initiatives. Communication activities and engagement to support release of the Draft Report in July 2018 was also factored into the implementation planning – including Phase 2 Community Consultation which was scheduled for September 2018 (subsequently held over by DAWR).

Refined key messages

Building on key messages from the 2017 communications plan, Seftons added a number of statements to reflect the progress of the NCCP program. Key messages were then regularly reviewed and refined by Seftons to ensure they remained relevant and effective in addressing key aspects of the program including research, the NCCP process and timing.

Executed media relations campaign

Seftons developed a media relations campaign to underpin all communications and engagement activity and provide a constant voice and profile for the NCCP. Strategies were identified by Seftons to generate grass-roots support, strengthen stakeholder ties and promote awareness amongst specific target audiences. Seftons also focussed on targeting key media outlets and identifying opportunities to share NCCP news on a national scale.

Seftons developed a calendar of media release topics and outlets to be targeted throughout the 13-month Strategy and support key program milestone. It is important to note that the initial media relations campaign was developed on the premise that research milestones and reports would be available on a monthly basis, and that the NCCP would release the Draft Plan in July 2018 and Final Recommendations in December 2018.

When it became apparent that these milestones were not going to be met by the NCCP, Seftons communicated to the NCCP that media relations activities would be adjusted to reflect available outputs and alternative media angles would be identified. Note despite this change, Seftons still delivered on its contractual output to prepare two proactive media releases per month – ensuring it totalled 26 pieces for the 13 month period.

During the first nine months (to 24 August 2018) of the original 13-month contract, Seftons delivered 14 proactive pieces of media material to the NCCP, with an additional 13 pieces scheduled for development through to delivery of NCCP Final Recommendations in December 2018. Seftons developed a national distribution list featuring more than 600 media outlets. Regional lists were also developed to support the take-up of media releases with a local angle. Seftons researched and drafted the media pieces, including liaising with key researchers involved in the projects relating to the media release. Once approved by the NCCP, Seftons sourced images, distributed the media release, and liaised with journalists to facilitate interviews and further information.

Year to date there has been 216 pieces of coverage that Seftons has generated, monitored or evaluated on behalf of NCCP. Seftons prepared weekly media monitoring reports for NCCP to summarise this coverage, reports included:

- o Weekly media sentiment for NCCP
- o Monthly media sentiment for NCCP
- o Geographical reach of media coverage
- o Key Themes of media coverage

See Project Materials Developed section for copies of media reports.

Following is a summary of the media releases prepared and planned to be prepared:

14 pieces of media materials delivered to NCCP and/or distributed

1. Clean Up Australia Day release (drafted but not approved in time by CUAD)
2. What the science is telling us (distributed)
3. Logan Albert workshop (distributed)
4. Clearer Waters / Bang the Table stakeholder release (drafted)
5. Expert Elicitation media alert, Canberra (distributed)
6. Computer Modelling (drafted)
7. Biomass media release tailored for Bega (drafted)
8. Epi-modelling research release (drafted)
9. Carp utilisation media release (distributed)
10. LLS Forbes community consultation (distributed)
11. Feedback to Weekly Times OpEd piece by LaTrobe University (delivered)
12. Copy for Australian Fishing Trade Association Feature Article (delivered)
13. SMH Letter to the Editor in response to Simon Chapman Opinion Piece (distributed)
14. Letter to the Editor – Northern Weekly (distributed)

*Note if a piece says drafted and not distributed, it is due to the fact the material was not approved by NCCP or it was agreed post drafting that it would not be distributed by NCCP

An additional 13 pieces planned post 31 July 2018

15. Community consultation report release and supporting jurisdictional release (August)
16. Gone Fishing Day Pre-promotion media release (September)
17. Gone Fishing Day Event media release (October)
18. Gone Fishing Day Media Alert (October)
19. Engineering Carp Clean Up Options Media Release (pending NCCP)
20. A Future Without Carp (Expert Elicitation) Media Release (pending NCCP)
21. How many carp live in Australian Waterways (Biomass Data) Media Release (pending NCCP)
22. What's the alternative? Exploring Australia's Carp Control Options Media Release

Seftons also drafted reactive media releases, statements and responses, prepared key messages for interview preparation and provided strategic counsel to NCCP as required.

Negotiated Media Partnership

Seftons facilitated multiple meetings with Fairfax Agricultural Media (Fairfax) on behalf of NCC to discuss a partnership agreement and negotiated an advertising package to support media activity ahead of release of the Draft Plan in July 2018. Seftons also provided a calendar of NCCP editorial opportunities to Fairfax for consideration.

The purpose of the partnership was to secure regular commentary for NCCP's Matt Barwick in Fairfax Ag titles on the work underway by the NCCP, as well as provide readers an opportunity to hear directly from the researchers on the specific programs they are investigating.

Supporting this editorial would be advertorials designed by NCCP to promote the NCCP Draft Plan and direct readers to www.yoursay.carp.gov.au for further discussion and feedback.

As a result of our initial meeting, Seftons secured a feature editorial on the NCCP program which was published in Fairfax Ag titles, and promoted on front page posters for The Land in newsagencies state-wide.

Uncertainty around program timelines and delivery of the Draft Plan as scheduled resulted in the partnership being put on hold. Fairfax remains keen to revisit the opportunity when NCCP is ready.

Provided issues and risk management counsel and reactive media support

With potential for a stakeholder or media outlet to focus on possible negative aspects of the NCCP program, issues management and communications risk was constantly considered by Seftons. Media monitoring occurred daily, along with weekly media analysis. Any issues arising from media coverage was immediately shared with the NCCP team by Seftons, along with recommendations regarding any required actions. Seftons provided the NCCP with background information in relation to any involvement by stakeholders or interest groups, key messages being communicated and the risk of further media exposure.

Seftons provided regular strategic counsel and response recommendations in relation to broader stakeholder issues, carp inbox enquiries and negative stakeholder commentary on social media.

Seftons also regularly updated communications related items on the NCCP Risk Register and these risks were raised and shared with NCCP Communications Working Group members.

Key tasks delivered by Seftons included:

- Daily liaison to discuss program challenges / issues
- Weekly media analysis
- Strategic counsel for a range of media enquiries:
- Social media and website development
- Developed spokesperson policy for internal staff and affiliated personnel
- Murray Valley Standard
- Adelaide Advertiser
- Weekly Times
- Keller Kopf research
- Jonathon Marshall response
- Science Journal
- Negative stakeholder commentary via Facebook and YouTube videos
- Strategic counsel in relation to commercial fishing video in comparison to commercial research outcomes
- Responded monthly to carp inbox enquiries
- Regular updates to NCCP risk register
- Carp Inbox support
- RRAT Public Hearing strategic counsel and planning
- Response to Lincolnshire claims – prep NCCP ahead of Weekly Times article

Reactive media support for NCCP during the 9 month period from December – August 2018 included:

- Daily media monitoring
- Weekly media analysis
- Strategic counsel in relation to Ron Thresher paper
- Developed response to Ron Thresher paper
- Strategic counsel to NCCP on response channels re Ron Thresher paper
- Strategic counsel in response to Weekly Times article

- Victoria Ch. 9 Gippsland story opportunity for NCCP
- 4RR interview request
- ACT and QLD consultation media enquiries
- Strategic counsel and talking points to NCCP in response to Science publication
- Additional verbal counsel to M. Barwick re negative social media sentiment
- Provided talking points and FAQ to NCCP ahead of Landline interview
- Provided talking points and FAQ to NCCP ahead of Fairfax interview
- Drafted letter of response to Lincolnshire Fish Health Laboratories UK claims
- Drafted letter to the editor in response to Terry Logan letter
- Telemeeting with VIC Craig Ingram to explore opportunities for Channel 9 Gippsland filming
- Responded to media request from 2CCC Canberra re Kambah Pools activity
- Drafted NCCP response to SMH Opinion piece
- Drafted NCCP Letter to the Editor SMH
- Liaison with research partners re SMH Opinion Editorial coverage
- Verbal counsel on negative social media discussion
- Strategic counsel in relation to Senate Estimates
- Speaking points and statement for Joe Pera ahead of OzWater conference
- Media reporting flow chart on responding to misinformation
- Weekly Times media monitoring
- Research ahead of RRAT public hearing
- Monitoring RRAT public hearing
- Collation of observations and strategic counsel on Senate Estimates
- Development of Senator Response strategy
- Commence implementing Senator Response strategy
- Verbal counsel to NCCP in relation to social media commentary
- Counsel re Adelaide Advertiser
- Liaison with Murray Valley Standard
- Gippsland Farmer / LaTrobe Valley Express

- Strategic Counsel following Senate Public Hearing
- Monitor coverage following Senate Public Hearing

Developed communications collateral

To share information about the NCCP and its progress, Seftons delivered a range of new collateral including content for Murray Darling Association's newsletter as well as provided strategic feedback on the Clearer Waters video series produced by the Dr Tom Rayner as well as updated Frequently Asked Questions for the NCCP website.

Following is a summary of deliverables:

1. Strategic feedback on Clearer Waters: Joe Pera Water Quality
2. Strategic feedback on Clearer Waters: Commercial Fishing
3. Strategic feedback on Clearer Waters: Jacki Schirmer Social Research
4. Strategic feedback on Clearer Waters: CSIRO Ken McColl
5. Strategic feedback on Clearer Waters: Biomass
6. Strategic feedback on Clearer Waters: Duck Lagoon Trial
7. Liaised with NCCP re need for updated council brochures ahead of MDA meetings – NCCP advised to hold until timeline was clarified to avoid double printing
8. Developed FAQs for NCCP website
9. MDA Newsletter – February
10. MDA Newsletter - March
11. MDA Newsletter – April
12. MDA Newsletter – May

13. MDA Newsletter - June

Produced NCCP eNewsletter

With feedback from community workshops and stakeholder events indicating that an emailed newsletter was the primary preferred form of communication, Seftons recommended that the NCCP improve the existing newsletter template to ensure its suitability for monthly distribution to stakeholders. Seftons drafted content for Newsletter 3 in March 2018, however, ongoing changes to newsletter content, design/layout and indecision around the distribution platform resulted in significant delays, with the newsletter being put on hold by NCCP due to program uncertainty.

Following is a summary of the newsletter deliverables:

- March - Seftons drafted newsletter 3 for NCCP in mid-March 2018
- April - NCCP provided feedback in April that they would like the copy to be punchier / less formal
- April – NCCP asked Seftons to explore other design options rather than it be produced by FRDC
- May – Seftons explored design options and provided a range of template mock-ups to NCCP for review
- May - Seftons delivered a revised newsletter with new copy laid out in preferred template.
- May - NCCP approved copy in May and requested Seftons proceed with finalising design
- May - Seftons designed the newsletter immediately following approval in a program called MailChimp
- May - Seftons sent MailChimp newsletter to NCCP in May
- May / June - NCCP responded to mock up to request the copy be updated in light of program delays
- June - Seftons delivered in early June revised copy (post PI Workshop) updated copy which included new introduction regarding program uncertainty, taking as long as needed etc.
- June - NCCP were happy with the copy and Seftons prepared to distribute
- July - NCCP then contacted Seftons to say that FRDC advised it could not be distributed via MailChimp, FRDC's program would need to be used.
- July - NCCP then liaised with FRDC to provide access to Seftons to use the new distribution system (this took several weeks)
- July - Seftons were then provided access and a new design version was required for the FRDC system
- July - Seftons redesigned the newsletter using FRDC's software
- July - Seftons then delivered the final version of the newsletter to NCCP for distribution.
- August - NCCP requested photo captions be added to newsletters, something which the FRDC software did not enable. Seftons manually edited the images with a photo caption added, then reloaded onto the FRDC software.

- August - Seftons provided the updated newsletter to NCCP for final distribution.
- August - NCCP identified it did not have approval of the Clearer Waters videos (featured in the newsletter) nor did it have resourcing internally to upload the Clearer Waters videos to the website (as per link in newsletter). The newsletter was placed on hold until this was rectified by NCCP
- August - NCCP recontacted all Clearer Waters video talent for written approval.
- August - NCCP was then liaising with FRDC web developers to coordinate publishing of the Clearer Waters videos
- August – Newsletter remains with NCCP. NCCP advises newsletter will be placed on hold given program uncertainty.

Implemented stakeholder engagement plan

With a broad range of stakeholders important to the NCCP program, Seftons identified key target groups and recommended methods of engagement as part of the 2018 Communications and Stakeholder Engagement Strategy. These groups included Natural Resource Management Groups (NRMs), Water Asset Managers, and Special Interest Groups and Federal/State/Local Governments.

Seftons developed a comprehensive stakeholder database (March 2018) which included federal and state government contacts, environmental groups, local government organisations, agricultural / agribusiness industry, recreational fishing groups, local land services and natural resource management groups, events and potential ambassadors. This database was provided to NCCP in the context of a broader stakeholder strategy.

Seftons developed a detailed stakeholder meeting/engagement schedule (April 2018), prioritising groups and individuals for engagement. On receiving new findings from Dr Jacki Schirmer in late June 2018, an updated stakeholder plan was developed, using insights from this NCCP research to identify priority stakeholders. Based on counsel from Dr Schirmer, responsibility for stakeholder management was split between Dr Schirmer, NCCP and Seftons.

Seftons reviewed a separate stakeholder document prepared by Dr Schirmer and NCCP (July 2018) about the development of Discussion Papers. Seftons sought information about how this plan would be developed, provided counsel to NCCP around potential challenges and requested clarification on responsibilities and implementation. NCCP advised a meeting would be convened to discuss the process. NCCP did not convene this meeting by prior to 31 August 2018.

Seftons also co-ordinated a meeting between MDA CEO Emma Bradbury and NCCP in July 2018, to better understand recent feedback from local government. Following this meeting, Seftons provided advice to NCCP on initiatives to improve engagement with local government – this was included in the updated Stakeholder Plan prepared July 2018.

See Appendix 1 for correspondence with NCCP regarding Stakeholder Engagements Materials produced by Seftons.

Following are the key highlights/deliverables for Government engagement.

Seftons contacted offices and/or confirmed meetings with:

Federal government

- Minister David Littleproud;
- Shadow Minister Joel Fitzgibbon;
- Deputy Prime Minister Michael McCormack (upcoming);
- Senator Richard Di Natale (contacted).
- Senator Anne Ruston

State government

- Contacted the Secretariat of the Meeting of Environment Ministers to confirm next meeting (late 2018);
- In consultation with SA CWG (Fontella Koleff) an NCCP SA Steering Committee meeting was held in May 2018;
- Liaised with individual CWG members regarding state government engagement:
- SA CWG requested confirmed of NCCP program direction prior to supporting further set-up of meetings;
- NSW CWG confirmed contacts identified by Seftons;
- VIC CWG contacted Environment, Ag and Water Ministers for briefing meetings on Seftons behalf;
- Qld CWG confirmed and identified contacts for Seftons to engage.

Local government

- Border Region Organisation of Councils;
- Region 5 SA Riverland Councils;
- Region 3 (Balranald & Loddon Shire) – meeting confirmed but not attended by M.Barwick;
- Region 2 Moira Shire Council;
- Riverina and Murray Regional Organisation (RAMROC);
- Australian Local Government Association Conference (prepared for provision of shared stand and resources with MDA);
- Namoi Group of Councils;
- Contacted Environment & Waterways Alliance NW – no agenda availability;

- Contacted CENTROC for upcoming presentation availability.

Seftons coordinated a meeting with MDA CEO Emma Bradbury with NCCP (July 2018) to understand recent feedback from local government. Following this meeting, Seftons provided advice to NCCP on next steps to improve engagement with local government – this was included in the aforementioned updated stakeholder plan (prepared July 2018).

Following are the key deliverables for stakeholder engagement:

- Developed Stakeholder Engagement Strategy, Action Plan, events calendar, key influences database (updated regularly throughout program)
- Koi Society of Australia – messaging, briefing meeting; post meeting analysis
- Lachlan community workshop;
- Local Government NSW Water Conference – sourced speakers, pitched concept, secured speaking opportunity and developed briefing notes;
- Murray Darling Association – strategic partnership;
- MDA Border Regional Councils – briefing meeting;
- Region 5 SA Riverland Councils;
- Region 3 (Balranald & Loddon Shire) – meeting confirmed but not attended by M.Barwick;
- Region 2 Moira Shire Council;
- Riverina and Murray Regional Organisation (RAMROC);
- Australian Local Government Association Conference (prepared for provision of shared stand and resources with MDA);
- Namoi Group of Councils;
- Contacted Environment & Waterways Alliance NW – no availability;
- Contacted CENTROC for upcoming presentation availability;
- Australian Veterinarians Association – briefing meeting;
- Australian Recreational Fishing Foundation – briefings and proposed strategic partnership;
- Australian Local Government Association Conference – recommended conference presence;
- Invasive Pests – briefings;
- Local Land Services – strategic partnership;
- Catchment Management Authority – strategic partnership;
- May – letter to all special interest group and key NCCP stakeholders to update on status of the program;
- Webinar – held for key stakeholders in May to discuss Water NSW research findings;

- OzWater NSW conference – briefing notes for keynote speaker Joe Pera;
- Clean Up Australia Day – briefing meeting and strategic partnership;
- Cotton Info re cotton industry engagement;
- City Smart – Pest Fishing Competition;
- RRAT Committee.

Produced stakeholder engagement materials

To support NCCP engagement with a broad range of stakeholders and interest groups, Seftons developed the following communications materials:

- Briefing pack for Minister Littleproud meeting to then be tailored for future government briefings
- Briefing paper for target stakeholders providing an update on the NCCP program.
- Agenda for stakeholder briefing meetings
- Key messages/speaking points ahead of key meetings with stakeholder groups
- Summaries of NCCP research relating to special interest groups.
- Webinar for stakeholders with NCCP and WaterNSW
- Regular monthly liaison with Dr Jacki Schirmer to adjust stakeholder messaging and materials to meet the needs of her research and engagement work

Seftons also advised NCCP on recommended presentation content for key stakeholder groups.

Built and Managed ‘Bang the Table’ – www.yoursay.carp.gov.au

Bang the Table (BTT) is an online stakeholder engagement platform which enables organisations and government bodies to engage with key stakeholders in an effective manner. It was recommended by Seftons following NCCP’s feedback that they previously engaged via Facebook which presented them many challenges.

Seftons sourced the software, built the site and provided seven day per week management of the site on behalf of NCCP. Seftons appointed a full-time resource to build and manage this site on NCCP’s behalf.

In February 2018, Seftons delivered a content management plan for the site and commenced the establishment of NCCP Working Groups. Seftons also prepared copy and content for the site and

work strategically with the NCCP to ensure BTT supports the broader stakeholder engagement strategy.

Seftons developed a process to respond to stakeholder comments/queries which included webinars with NCCP representatives and researchers based on the topic discussed on the site. Seftons developed a schedule of research topics to be featured on BTT on a monthly basis, supported by the proposed BTT Response Process. These topics also coincided with media releases being distributed on the same subject matter.

A social media campaign and support materials to promote BTT via Communications Working Group social media channels was also prepared by Seftons. Release of this social media messaging is pending NCCP approval of the BTT Response Process.

Following is a summary of the deliverables:

February

- Developed and delivered content plan for NCCP Bang the Table
- Commenced the establishment of working group pages for Bang the Table

March

- Liaised with PAG re working group page for members & suitable content
- Liaised with SAG re working group page for members & suitable content
- Liaised with OWG re working group page for members & suitable content
- Continued to build maser site and source suitable content

April

- Finalised copy for Bang the Table public site
- Uploaded materials to CWG for review / insights
- Worked to provide PAG members with access to CWG page

May

- Development of website strategy document
- Development of website response flow chart
- Development of carp utilisation content for website
- Management of questions received via BTT from stakeholders – liaise with researchers to answer
- Host and facilitate webinar via Bang the Table for stakeholders and NCCP and NSW Water

June

- Responded to stakeholder enquiries via BTT

- Liaised with NCCP and researcher to develop response
- Investigating alternate webinar options
- Investigate available budget to pay researchers for future involvement in webinars via BTT

July

- Liaison with NCCP re next topic and proposed telemeeting
- Update CWG page with Senate Response strategy information
- Respond to feedback from CWG in relation to Senate response strategy
- Share social media information with CWG
- Recommend final strategy to be shared with CWG re social media Clearer Waters – NCCP advised to wait for video approvals

Managed Communications Working Group

Seftons managed the Communications Working Group (CWG), which provides communication support to the NCCP. The CWG comprises leading communication managers from environment and natural resource agencies and organisations, with expertise in fisheries, pest management, river operations and extension. The group's main role is to contribute to the successful engagement of the Australian community in controlling carp impacts.

Management of the CWG included facilitating meetings, recommending the chair, drafting agendas for each meeting, preparing briefing papers on agenda items, supplying media materials to the group for feedback and distribution, liaising with members to determine meeting date availability, providing communications updates and engaging with members to share NCCP materials.

Seftons also regularly liaised with CWG members regarding jurisdictional input to the stakeholder engagement calendar, digital media, BTT Response Protocol, Senate Response Strategy and NCCP's Social license to operate.

Seftons attended three face-to-face meeting with the CWG and participated in two tele-meetings between 1 December 2017 and 31 August 2018.

Following is a summary of deliverables:

December

- Developed July – November Communications Summary presentation
- Developed brief overview of 2018 strategic plan for NCCP (pending contract being signed)
- Developed media analysis presentation for sentiment in 2017
- Attended CWG meeting (2 representatives)
- Minutes for CWG meeting

- Ad hoc member liaison

February

- Seftons Robbie Sefton acted as an interim Chair for CWG between February and May 2018 at the request of NCCP, following previous Chair Alison Penfold departure.
- Developed agenda for first Working Group meeting for 2018
- Developed presentation summarising outputs and results for 2017
- Developed presentation on strategic direction of planned 2018 program (pending contract signed)
- Developed presentation on initial findings of NCCP 2017 community consultation
- Attended CWG meeting
- Minutes for CWG meeting
- Ad hoc member liaison
- Seftons recommended a new Chair be appointed ahead of next face-to-face meeting and suggested a list of candidates to NCCP for consideration.

March

- Circulation of approved NCCP Communications & Stakeholder Engagement plan
- Liaised with members to supply state / territory communications plans
- Liaised with members to ensure they were aware of social media sentiment around science doubts
- Liaised with members re development of a stakeholder engagement calendar – featuring jurisdiction content
- Ad hoc member liaison

April

- Development of CWG Paper – Stakeholder Engagement Strategy Update
- Development of CWG Paper – Media Relations Calendar Update
- Development of CWG Paper – Contract Outputs Update
- Development of CWG Paper – Digital Media Recommendations
- Development of CWG Paper – Risk Analysis Update
- Set up telemeeting for interim meeting with Members to discuss communications challenges and opportunities
- Liaised with CWG members on BTT communications approach

- Worked with NCCP to coordinate PI / Communications Working Group meetings in Adelaide
- (including agenda)
- Ad hoc member liaison

May

- Develop agenda for CWG telemeeting
- Finalise program of documents for telemeeting
- Facilitation as Chair, and attendance of telemeeting with CWG members
- Meeting minutes from telemeeting
- Development of agenda for Adelaide CWG meeting
- Briefing new Chair, Ian McDonald on CWG members and strategic objectives
- Development of briefing papers to support CWG Agenda (includes media relations update, stakeholder engagement update, deliverables update, risk updates, digital media updates)
- Phone call to all members encouraging attendance at May meeting
- Attended at PI workshop and CWG meeting in Adelaide (4 Seftons representatives)
- Minutes from Adelaide CWG meeting
- Participated in breakout meeting with select CWG members to discuss NCCPs social licence to operate
- Developed strategic notes for NCCP on our current social licence to operate tactics
- Liaised with NSW DPI and Queensland Government re representation on CWG
- Meeting with CottonInfo re membership
- Ad hoc member liaison

June

- Developed and finalised meeting minutes from May workshop
- Liaise with Chair on program status and meeting minutes
- Liaised with members re program update post Adelaide meeting
- Liaised with SA re new representation
- Ad hoc member liaison

July

- Developed invitation for July telemeeting

- Developed agenda for July telemeeting
- Finalised briefing materials to share with CWG on telemeeting
- Uploaded content to BTT
- Hosted telemeeting with CWG members to discuss Senate response strategy and program update
- Took minutes from telemeeting and share with Chair and CWG members

Identified and facilitated key strategic partnerships/alliances

To establish third party advocates for the NCCP program, Seftons recommended establishing strategic alliances with several relevant organisations including:

Murray Darling Association (MDA)

Building on the relationship established with the MDA as part of the 2017 communications plan, NCCP formed a strategic alliance with MDA in January 2018, inviting the association to remain as an active member of the Communications Working Group. An invaluable channel to local government in carp affected areas, Seftons secured NCCP involvement in the MDA Conference and met with MDA to discuss local government concerns about the NCCP program. The opportunity to partner with MDA at the Australian Local Government Association Conference was declined by NCCP. Seftons prepared NCCP related content for the monthly MDA Newsletter and liaised regularly with MDA to monitor local government sentiment about the NCCP program, along with their information requirements.

Clean Up Australia Day

Seftons approached Clean Up Australia Day in relation to a collaboration with NCCP promoting the need to clean up our waterways. Seftons sourced clean up statistics in relation to waterways, drafted a media release to promote the collaboration between NCCP and Clean Up Australia Day.

Unfortunately, this was not approved by Clean Up Australia Day in time for this year's event on March. Seftons has since and facilitated a meeting to discuss opportunities around future events. Clean Up Australia Day expresses an interest in working with NCCP and forming a strategic partnership once relevant program milestones have been met.

National Carp Awareness Week/Gone Fishing Day

Seftons proposal recommended a National Carp Awareness Week be launched to raise awareness of the prevalence of carp in our waterways. Seftons existing liaised with Australian Recreational Fishing Foundation and identified an annual calendar event – Gone Fishing Day, held each year in October, which could be a suitable vehicle to promote carp awareness. The program was planned to reach not only recreational fishers, but communities throughout Australia that rely on waterways for recreational purposes. The proposal is with NCCP for approval.

Key deliverables included:

- Investigated Gone Fishing Day
- Reviewed of activity in 2017 to determine suitability
- Contacted ARFF to express interest in involvement
- Reviewed of proposal for sponsorship
- Facilitated telemeeting with organisations to gauge more information
- Facilitated follow up telemeeting to ask further information

- Developed recommendations document on how NCCP could leverage
- Developed leveraging budget to support recommendations
- Seftons recommendations plan with NCCP for approval

Identified and co-ordinated keynote speaking opportunities

To provide an opportunity for NCCP to share key messages face-to-face about the program and its progress, Seftons identified and negotiated a number of speaking opportunities for National Co-ordinator Matt Barwick including:

- Australian Rural Leadership Foundation Key Note Address 2018 – Seftons provided speech outline, advised on how to engage with audience and development of program key messages.
- Murray Darling Association Conference.
- Fish Biology Society Conference.
- NSW Local Government Water Conference.
- Australian Local Government Association Conference Stall (NCCP declined).
- Cotton Conference Meet the Research (NCCP declined).

National Rural Press Club

Seftons secured an invitation for NCCP to attend the National Rural Press Club (NPC) to understand the event format ahead of a possible hosting opportunity to coincide with release of the Final Recommendations. Seftons introduced Matt Barwick to NPC Chair Colin Bettles to familiarise him with the NCCP program, scope and timeline. Securing initial interest from NPC, Seftons will pursue the opportunity once the release date is confirmed by NCCP.

Provided event management support for Matt Barwick

Seftons provided support to NCCP ahead of a number of key events including:

- Sourcing NCCP collateral.
- Developing speaking notes.
- Providing logistical overviews on key speakers, agendas, participation channels.
- Liaising with event organisers on behalf of NCCP.
- Identifying additional opportunities for NCCP as they emerged.

Seftons also co-ordinated event logistics on behalf of NCCP for:

- Possible involvement in Cotton Conference.
- Australian Local Government Association (ALGA) conference.
- Murray Darling Association National Conference.
- NSW Local Government Water Conference.

- OzWater Conference.
- RAMROC briefings.
- CWG and PI workshop events.

Provided weekly media analysis and reporting

Seftons prepared weekly media reports providing NCCP with analysis of relevant coverage received from media outlets.

See Project Materials Developed copies of the Media Reports developed.

Results

The outputs and outcomes of the project include:

- Development 14 proactive pieces of media material, with an additional 13 pieces scheduled to be developed through to delivery of NCCP Final Recommendations in December 2018.
- Engagement with 635 different media outlets nationally on a regular basis.
- Reactive media releases, statements, interview preparation and co-ordination as required.
- Immediate issues management support 24/7.
- Content for NCCP electronic newsletter. NCCP approved content and design before putting eNewsletter on hold due to program uncertainty.
- Attendance at Principal Investigator Workshops held by NCCP in February and May. Workshop scheduled for August cancelled by NCCP.
- Management of Communications Working Group (CWG) including co-ordination of and participation in five CWG Meetings.
- Development of Stakeholder Engagement Strategy, Action Plan, Events Calendar and Key Influencers Database.
- Development of collateral and briefing materials to support communications and stakeholder engagement activities.
- Engagement with federal, state and local government representatives.
- Webinar for key stakeholders regarding Water NSW Research and NCCP progress.
- Management of Bang the Table including content development and drafting of responses.
- Proposal for Carp Awareness Week in conjunction with Gone Fishing Day.
- Facilitated meeting with Clean Up Australia Day regarding strategic partnership with NCCP.
- Secured National Rural Press Club interest in NCCP Final Recommendations Address.
- Negotiated media partnership with Fairfax Agricultural Media including possible editorial opportunities. Secured NCCP article in The Land. Media partnership not pursued due to program uncertainty.
- Strategic alliance with Murray Darling Association.
- Event management support for Matt Barwick as required.
- Monthly engagement with Dr Jackie Schirmer regarding social research.
- Identification and co-ordination of keynote speaking opportunities for NCCP.
- Delivered monthly milestone reporting (January 2018 – August 2018).

- Attended weekly NCCP work-in-progress meetings
- Attended weekly Communications WIP meetings with NCCP as required.
- Delivered 36 end of week communications reporting (summary of outputs).
- Attended one face-to-face meeting with NCCP in Sydney and multiple stakeholder briefings.
- Provided additional strategic support/advice including affiliated partner engagement and digital media.

Specific media outcomes include:

- A total of 635 journalists nationally were engaged regarding the NCCP on a regular basis.
- 218 individual news items were captured through media monitoring mentioning the NCCP.
- Of the 218 items, 123 were newspaper articles, 80 items were on radio, 9 were online and 6 on television.
- There were 7 items which achieved national coverage.
- 170 items (78%) were positive/neutral in sentiment, while 48 items (22%) were negative.
- NCCP National Coordinator Matt Barwick was the key spokesperson in 52 media pieces.
- Articles featured in The Land, The Weekly Times, Queensland Times, Courier Mail, Canberra Times, Gold Coast Sun, Sydney Morning Herald, Weekender Herald and Adelaide Advertiser.
- 72 items featured on ABC radio around Australia including ABC Country Hour, ABC Radio Sydney and ABC Radio Canberra.
- Television coverage included a Landline feature, as well as other coverage on WIN Canberra, Prime 7 Wagga Wagga/Tamworth and Southern Cross Broken Hill/Port Pirie.

Discussion

It is important to note that the 2018 Communications & Engagement Strategy was written on the premise that research milestones and reports would be available on a monthly basis, and that the NCCP would release the Draft Plan in July 2018 and Final Recommendations in December 2018.

When it became apparent that these milestones were not going to be met by the NCCP, Seftons communicated to the NCCP that the communications and engagement program would be adjusted to reach key stakeholders using alternative tactics and channels.

Despite these unforeseen changes, the communications and engagement activities undertaken over the past nine months have delivered against the objectives identified in the original Strategy.

Awareness has continued grow across key stakeholder groups and the broader community about the NCCP program and its objectives.

The issue of carp is also now clearly on the national agenda, with widespread media coverage about the impact of the pest species on Australian waterways and native fish species.

Sharing insights into research findings also encouraged discussion around the depth of science that will be used to inform recommendations to government.

While this has helped to build more trust in the NCCP, further work is needed to position NCCP as an independent party to the final decision making process.

While stakeholders and interest groups with differing views about carp control have often loudly shared their opinions, media coverage of the NCCP has been largely balanced, with 78% of coverage either positive or neutral in sentiment.

Transparency and sharing information about NCCP progress and timelines will support long-term engagement, along with providing opportunities for stakeholders to contribute their knowledge and understanding of local issues and impacts at program phases.

While social media remains a challenge, the launch of BTT and the support of the Communications Working Group (CWG) in sharing NCCP information via their digital media channels provides a workable solution for the time being. Ongoing engagement with CWG members will encourage support NCCP communication and engagement initiative through their own channels and programs.

Solid progress has been made, and once clarification on project scope and timing is reached, NCCP will be well placed to re-set the communications and engagement framework and proceed with finalising the positive and innovative research underway.

Conclusion

The prevalence of carp in Australia's waterways remains an ongoing challenge to address. The work undertaken by NCCP to date has helped to educate communities, the media and stakeholders about the complexity of carp and the impact they have on Australia's waterways. It has also provided communities with an opportunity to share their thoughts and concerns in relation to carp impacts and control options.

Seftons believes stakeholders largely remain open to reviewing the important research and work underway by the NCCP, as well as the outcomes from this research, before a definitive decision is reached by many.

Stakeholders and the media also remain largely interested in understanding how NCCP findings and outcomes fit against international learnings and best practice and as such ongoing dialogue between these international stakeholders remains critical.

There remains the need for NCCP to reset the agenda and timeline for stakeholders so they too have clarity around the scope of activity, the timeframe for delivery as well as the opportunity they have to contribute to important recommendations.

It's an important project for Australia with the potential benefits to stakeholders, communities and the environment significant.

Implications

n/a

Recommendations

The objectives outlined in the 2018 Communications and Stakeholder Engagement Strategy, and the and the tactics recommended to support delivery of the Draft Plan and Final Recommendations were effective and successful in reaching out to and engaging with media and stakeholders. The delays experienced by NCCP were not detrimental to the implementation of the communications and stakeholder engagement program, however it did lead to the recommendation in August 2018 that the program be placed on hold while clarity over future direction of the program was reached. Once clarity is received around program timelines, the Strategy should be revisited and communications and engagement activities implemented as recommended.

Further development

n/a

Extension and Adoption

n/a

Project coverage

Please refer to Project Materials Developed for Media Reports.

in current design standard

Glossary

n/a

Project materials developed

Please find following Monthly Reports including projects materials developed.

From: Jayne Goldring
Sent: Thursday, 13 September 2018 2:51 PM
To: Mikala Dickie
Subject: FW: NCCP Stakeholder Engagement Plan
Attachments: NCCP Stakeholder Engagement approach 21Mar18.pdf

From: Jayne Goldring <jayne.goldring@seftons.com.au>
Date: Wednesday, 21 March 2018 at 4:41 pm
To: "matt.barwick@frdc.com.au" <matt.barwick@frdc.com.au>
Cc: Pamela Milnes <Pamela.Milnes@frdc.com.au>, Tom Rayner <tom.rayner@frdc.com.au>, Kerin Heatley <kerin.heatley@seftons.com.au>, Katie Paynter <katie.paynter@seftons.com.au>, Mikala Dickie <Mikala.dickie@seftons.com.au>
Subject: NCCP Stakeholder Engagement Plan

Hi Matt,

As promised, please find attached the stakeholder engagement approach for NCCP.

There are several documents attached:

1. NCCP Stakeholder Engagement Approach - The first is a summary of the strategy around the stakeholder engagement
2. NCCP Stakeholder Engagement List - The second is a comprehensive database of our stakeholders and key events / opportunities. This will continue to be added to, but you will note we have started to capture the channels and tools these stakeholders use to communicate so that we can tap into this and multiply our share of voice. These are largely national and state stakeholders – the CWG members will drill down to the local stakeholders in their jurisdictions – we'll just supply the information for them to do so. Note, Local Government is included in the attached as they are a vital conduit of information for us.
3. NCCP Program Timeline - The third document is something I pulled together today for your response to the Dept in relation to program funding. I'll send this over in a separate email with a budget breakdown as well - but just thought I would include now as a draft, as it will help to bring to life how the above will roll out, in collaboration with the media relations, digital communications and other comms components. This document will change and evolve as new opps arise and new issues pop up - it needs to be responsive.

If you're happy with the proposed approach, the next step is really to start cracking on with preparing the materials for the stakeholders, contacting each to share information, identify opps and secure meetings, as well as explore some of the events and speaking opps listed. Underpinning all of this will be our ongoing proactive media relations program.

We're happy to discuss further when convenient for you. Will share the Program Timeline and Budget breakdown with you by tomorrow morning, so that you can respond to the Department as discussed. Let me know if you require this sooner.

Kind regards,

Jayne

Jayne Goldring

Account Director

 jayne.goldring@seftons.com.au

 +61 411 488 825



+61 2 6766 5222



21 Bourke Street



PO Box 1715 Tamworth NSW 2340



seftonpr.com.au

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National Carp Control Plan

Stakeholder Engagement Approach

21 March 2018

YOUR VOICE.
OUR EXPERTISE.



SEFTONS

Stakeholder engagement action plan

PURPOSE OF NCCP ENGAGEMENT

- Broaden networks and our communications reach to firmly place the issue of carp control on the national agenda.
- Raise awareness across key stakeholders and the broader community about the development of the NCCP, its processes and objectives.

OBJECTIVES

- Establish and maintain effective and enduring relationships with key stakeholders through information sharing.
- Facilitate processes that encourage stakeholders to contribute their knowledge and understanding of local issues and impacts.

GUIDING PRINCIPLES

- Trustful and meaningful relationships rely on good information – transparency, accessibility and accountability are key. Regular reflection on what NCCP has heard via community consultation, stakeholder meetings, and forums and the reciprocal sharing of information (face-to-face and online) is important. Equally, making the research and science and considerations about the prospect of policy change is also essential to managing expectations.
- NCCP is fundamentally about achieving healthy waterways and a sustainable population of native fish, longer term. Proposals to control carp to address these challenges via a national plan should be firmly placed in this context, as part of a national conversation.
- Members of the Communications Working Group including State and Territory government agencies are partners. They have a key role to play in helping the Coordinator of the NCCP to achieve mutual objectives and relationship management effort needs to be reciprocated to:
 - educate local communities about the impact of carp and the potential release of carp herpesvirus across jurisdictions

- engage with industry and the community and ensure they are given every opportunity to contribute to each jurisdiction's response to the NCCP
- inform local communities about progress on developing the NCCP and the long-term program of activity still to be developed to support its implementation.

SWOT ANALYSIS

STRENGTHS

The collaborative approach and processes instituted by the NCCP's National Coordinator, States and Territories and the established committees can give people confidence about the integrity of the planning process.

The scale of the planning process and the depth and breadth of the science program enables us to broaden our communications reach to ensure the issue of carp is on the national agenda.

Scientists and science (in an accessible, engaging and educational format) is of appeal to many and people want to meet them and understand their work.

Native fish and fishing are very popular, and anglers are highly engaged in environment protection and natural resource management.

NCCP has a wealth of good quality information that can be repurposed and promoted via different channels for the benefit of many audiences.

The CWG is a perfect forum to work with agency communicators on development of consistent and complementary approaches to communication and engagement that are respectful of roles and responsibilities, structures and agendas.

WEAKNESSES

Stakeholder expectations need to be considered and managed around NCCP engagement, we need to be clear about what we want from others, the 'call to action'.

Tight timeframes and resource limitations mean that NCCPs National Coordinator cannot be the only advocate articulating what we know works and what we believe can be achieved using a biocontrol – others are needed to communicate the fact that there are knowledge gaps and the work underway to address them.

Media and community consultation has piqued community interest. A regular flow of information and progress reporting in addition to communication of milestones is essential to feeding audience interests in the science (as it relates to issues raised via community consultation).

People living in metropolitan areas are less supportive and/or less aware of the Carp problem and more likely to oppose the release of a virus (particularly at sites they spend time at).

Not all State and Territory partners will be proactive while the Plan is in development and decisions about the way forward are yet to be made. Our engagement action plan requires a call to action/articulation of what we want our partners to do to assist with informing, educating and advocating as well as seeking their support to guide, shape and co-design proactive and reactive communication.

OPPORTUNITIES

There is a fondness for our waterways and native species in metropolitan, rural and regional areas. People believe short-term problems are worth it if there is long-term environmental benefit. Therefore, we need to emphasise the long-term environmental benefits.

There are many potential partners who are well placed to help inform, engage, educate, and advocate to metropolitan, rural and regional audiences. There are also several high-profile people, with their own following, who may want to help educate and advocate.

Australia's use of multimedia and smart phones combined with stakeholder use of social networking tools presents opportunities for shareable audio and visual tools that can be shared via stakeholder channels, including social media.

Face-to-face meetings, panel discussions, forums and conferences with stakeholders that share an interest in protecting waterways and native fish, provide good opportunities for NCCP's National Coordinator to offer insights in to where we are at in terms of the policy agenda - timelines, targets and the variables that influence outcomes; informing and updating key stakeholders about the science program; and sharing knowledge and understanding about the planning process.

THREATS

Community members and those organisations who share an interest in maintaining and improving healthy rivers and the issues associated with sustainable native fish populations are potential supporters and advocates. They can also be powerful opponents.

Community feedback suggests there are some issues that are considered the bailiwick of NCCP and require answers, even though many of these are still being considered - clean-up strategy/ies that protect key interests (water quality, environmental and animal health, tourism and recreational river use) planning for worst and best-case scenarios, use of integrated carp control measures (not just virus) plan for follow up environmental health action (don't just 'kill carp and hope for the best') and government's approach to long-term funding.

Resource limitations affecting agencies at all levels of government requires a targeted, coordinated and complementary engagement strategy. State agency communicators won't help to inform, educate, or advocate without being given the opportunity to guide, shape and co-design. They are also resource poor and require maximum lead times and they are not receptive to communication and engagement programs that are not respectful of roles and responsibilities, structures and agendas specific to their jurisdictions.

Recommended approach

Coordinated communication and engagement between NCCP and CWG members

- Provide regular opportunities for CWG members to guide, shape and co-design proactive and reactive messages, create educational tools and promote key communication and engagement activities.
- Create short and concise briefs outlining current issues national and specific to region, with objectives and messaging points to be communicated to mutual stakeholders including MPs.
- Communication and social media toolkits with tools that can be shared by all.

Education and advocacy with the involvement of local, State and Territory experts, scientists and research institutions in engagement activities

- Providing reliable, relatable and relevant information to improve understanding about why carp control on a national scale is needed.
- Raising the conversation so that carp control is firmly placed in the context of educating people about natural processes, what constitutes healthy waterways and how can we improve the environment when conditions are conducive to their abundance.

Regular dialogue with peak bodies, NGO and other stakeholder representative groups who share our interest in improving awareness and understanding of their networks and their members.

- Organisations with a national purview are likely to be actively supportive of the need to inform and educate their members who are people living and working in river systems impacted by carp. As such, dialogue via meetings, round tables, formal presentations at industry led events supported by regular communication updates, are necessary.

Meaningful interaction with local organisations and small groups involving cross section of stakeholder interests

- Nothing beats face to face when it comes to local relationships. The National Coordinator would benefit from a partnership approach with local government and community organisations, to tap in to best opportunities to build and maintain productive relationships. This has been explored to date with the Council webinars and alliance with MDA – Seftons recommends this continues.
- Community information /open days and tours featuring a range of people involved in water and land management locally are ideal for improving awareness and understanding amongst decision-makers and media.

Refer to the accompanying stakeholder engagement opportunities database, which details a calendar of events and opportunities, and national and state focused stakeholders who share an interest in the recovery of native species and habitats in targeted freshwater river systems and waterways throughout metropolitan, rural and regional Australia.

Action Plan

CONSULT: Communications working group members

Timing	Activity	Details	Information requirements/ what's important or what's possible	Who
<p>March kick off, develop.</p> <p>April and updated on regular and ongoing basis</p>	<p>Coordination of national state and local approach through formal request to members of the Communications Working Group including State and Territory government agencies as well as local government and community representatives and other Commonwealth agencies.</p>	<p>Articulate how they can assist by formalising need for information sharing (outside of CWG meetings) and wide promotion particularly in relation to</p> <ul style="list-style-type: none"> • NCCP messaging (proactive as well as reactive responses to issues raised face-to-face and online) • Proactive content creation and engagement with local industry, the community, Federal State and Territory MPs and agencies. 	<p>In the interests of coordination, what do we want or need to support NCCP proactive national campaign?</p> <ul style="list-style-type: none"> - National Carp muster/carp week - Fishing comps promoting native fish and healthy fish habitat - Soliciting the support of community identities i.e. local radio and television hosts, prominent personalities. <p>What's possible, how do we achieve consistent effort in every State and Territory?</p> <ul style="list-style-type: none"> - Reactive messaging: new issues or concerns, opportunities, potential risks. - Sharing of media releases - Digital strategy, partners and others to share NCCP information via their own channels while linking back to website and/or Bang the Table. Support state and local 	<p>Seftons to liaise with CWG members and State and Territory partners.</p>

			speaking engagements/community forums and events/local science by the river	
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Action Plan

INFORM, CONSULT AND INVOLVE: Re-purpose web content that can be packaged and shared with partners and promoted to audiences via stakeholder-owned channels, including social media.

Timing	Activity	Details	Information requirements	Who
<p>March kick off, develop.</p> <p>April and updated on regular and ongoing basis</p>	<p>Empower others (all stakeholders who express support) to help inform, educate and advocate for carp control as per NCCP and its development.</p> <p>Stakeholders:</p> <ul style="list-style-type: none"> - Environment - Agriculture - Fishing/anglers - Local government and community organisations 	<p>CWG to be asked to help circulate NCCP developed briefing kits consisting of a range of tools and resources that can be updated and repurposed for mutual benefit.</p>	<p>Coordination of content creation and investment in information tools:</p> <ul style="list-style-type: none"> - Messages about NCCP and its development - Responses to topical issues (according to consultations and/or within local government) - Visuals (infographics, photos, videos) - Hashtags for social - 'Did you know' tweets and Facebook posts based on NCCP website factual resources. - Shareable calendar of key campaign activities NCCP and science and engagement milestones - Information at community events, CMA LLS offices and locations where people renew licenses, Tourism info, Libraries - Brochures and/or messages and web address on boat and fishing licenses and renewals, (fishing tackle shops, caravan parks, service stations, many Kmart 	<p>Seftons / NCCP</p>

			stores) or local government notices - Newsletter editorials	
March kick off, ongoing	Update briefings for community leaders Stakeholders: - Community leaders	Set up regular briefings for community leaders – webinar and face-to-face in Canberra and other key locations. Also target Local Government and key stakeholder groups	Establish dates and organise meetings (breakfasts, dinners) that correspond with when they are visiting Canberra and other key locations for key meetings.	Seftons
April kick off, ongoing	MP briefing packs - Federal, State representatives. Quarterly briefings. Stakeholders: - Federal MPs - Senators	MP briefing packs (as per communication and social media toolkit)	USBs with localised content according to home State or Territory and/or electorate, based on information available from States and local government CWG reps and scientists. NCCP newsletters and brochure Consider localising content to relate to key portfolios ie health / water etc	Seftons / NCCP

Action Plan

INVOLVE AND ENGAGE: Promote call to action to control carp in the interests of protecting our native fish and sustaining our waterways.

Timing	Activity	Details	Information requirements	Who
April kick off, ongoing	<p>Speaking engagements and conferences focussed on native fish and protecting our waterways</p> <p>Stakeholders:</p> <ul style="list-style-type: none"> - Agriculture - Environment - Fishing/anglers 	Promote public discussion that reflects community consultation that occurred in 2017-18	Seftons to liaise with event organisers to secure NCCP inclusion, assist with presentation development, draft speeches, supporting media relations collateral, facilitate interviews etc	Seftons
April kick off, ongoing	<p>Industry updates/presentations</p> <p>Stakeholders:</p> <ul style="list-style-type: none"> - Agriculture - Environment - Fishing/anglers 	Lock in a program of events in consultation with industry representative bodies, to allow NCCP coordinator, State and local counterparts and scientist to provide regular updates.	Prioritised based on locations.	Seftons
April and early June	<p>Opportunity briefs for media tours</p> <p>Stakeholders:</p>	Invite Portfolio Ministers to tour carp infested waterways and/or 'science in action' opportunities with NCCP Coordinator and stakeholders.	Nominate key dates and liaise with MDA and others local community leaders to lead and coordinate, in collaboration with NCCP, CWG, to ensure mutual benefit.	Seftons

	- Federal MPs/Portfolio Ministers			
May, June, ongoing	<p>Community forums</p> <p>Stakeholders:</p> <ul style="list-style-type: none"> - Local government and community 	<p>Lock in a program of panel discussions that allow local government to coordinate community forums involving NCCP coordinator, State and local counterparts and scientist. These forums must reflect issues raised during community consultation that occurred in 2017-18 – need for forums to be determined by Local Government (fed back during planned webinar series)</p>	<p>Identify opportunities for face-to-face meetings with community leaders.</p>	<p>Invite MDA and others to lead and coordinate, in collaboration with NCCP to ensure mutual benefit.</p>
May, June, ongoing	<p>Mobilise science educators of key metro institutions and urban waterway managers</p> <p>Stakeholders:</p> <ul style="list-style-type: none"> - Urban waterways and science 	<p>NCCP Coordinator and researcher presentations at educational community events and forums</p> <p>Social media toolkit and resources such as brochures and newsletter editorials.</p>	<p>Speaking engagements/community forums and events</p>	<p>Seftons</p>

Key actions

INVOLVE AND ENGAGE: Promote call to action to control carp in the interests of protecting our native fish and sustaining our waterways.

Timing	Activity	Details	Information requirements	Who
	<p>Meet the Principal Investigators panel discussion</p> <p>Stakeholders:</p> <ul style="list-style-type: none"> - Agriculture - Environment - Fishing/anglers - Local government and community 	<p>Canberra workshop to hear updates from Principal Investigators – panel discussion. Invite stakeholders.</p> <p>Where PI updates are delivered interstate, invite relevant govt / industry representatives</p>	Consider streaming for interstate counterparts. Make available on BTT and website.	Seftons / NCCP
July TBC	Draft Report Launch – Parliament House, Canberra	<p>Parliament House breakfast recognising the work and support of stakeholders.</p> <p>Approach parliamentary friends of recreational fishers to host.</p> <p>Contact Persons: Mr Luke Gosling MP, Ms Rebekha Sharkie MP and Senator Johnathan Duniam (Co-Chairs) as well as Ministers, MPs, and government agency representatives</p>	Invite State and Territory Ministers to reflect the national coordination	

TBC Nov	– Community ambassador program Stakeholders: <ul style="list-style-type: none">- Potential community leaders / industry experts	Solicit the support of community personalities known for the love of fish, fishing and waterway recreation.	Seftons to send formal invitations and follow up, once NCCP is agreed on who, 'the ask' and timing.	Seftons
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Next steps

- Develop briefing packs tailored to local, state and federal government (in partnership with CWG members where relevant). Also tailor industry stakeholder briefing packs.
- Socialise briefing packs with CWG members, seek feedback at next working group meetings
- Commence developing a face to face calendar of meeting opportunities for NCCP's Matt Barwick targeting stakeholders and Government representatives
- Investigate events calendar and determine opportunities for coming quarter
- Meet with Dr Jacki Schirmer to seek feedback on targeted research work with stakeholder groups. Develop supporting plan to underpin the feedback / findings.

ASSUMPTIONS

- The stakeholder database (see attachment) provides the roadmap from which we can build from. It is not exhaustive.
- NCCP is already engaged with many stakeholders. As such, we have not identified stakeholders from government agencies, science and research institutions however it would be useful to establish where energy is best spent based on the work already underway. Seek to gain access to NCCP's Matt Barwick calendar again to identify opportunities with media and other stakeholders.
- NRMs, individual local governments, local Aboriginal organisations, State MPs or other stakeholders that State governments are more likely to own have not been included. Rather, we have identified State and nationally focused stakeholders who are likely to share an interest, who can assist us to inform, educate and advocate and who may have not been contacted by NCCP to date.

PT-04 - MILESTONE PROGRESS REPORT



FRDC PROJECT NUMBER: 2016-189

Title: FRDC Milestone 2 2016-189_Communications Program – 5 months

MILESTONE NUMBER: 2

DATE DUE: January 2018

PRINCIPAL INVESTIGATOR: Seftons

OVERALL PROJECT PROGRESS:

Milestone Status

Has this milestone been achieved (Yes/No)	No
Will the project be completed according to the current milestone schedule (Yes/No)	Yes

PROJECT PROGRESS AGAINST PROJECT OBJECTIVES

The communications program is progressing exceptionally well with all agreed outputs met, except for the delivery of two pro-active media releases due to timings with the broader NCCP program.

We have integrated successfully with the NCCP team to ensure seamless delivery of communications, we have developed:

- A framework for communication
- Commenced the distribution of proactive media releases (two remaining)
- Identified issues as and when they arise against the agreed time period
- Responded to reactive media enquiries
- Commenced the development of communications collateral including FAQs, fact sheets and messaging documents
- As well as formed the Communications Working Group and held its first meeting in Canberra.

In addition to agreed outputs and deliverables, Seftons has also delivered additional outputs, beyond the milestone requirements, for the NCCP team including:

- Forming a strategic alliance with the Murray Darling Basin Authority to facilitate critical stakeholder engagement activity with Councils
- Attended the Principal Investigators Workshop in Canberra to meet with all researchers and identify news angles
- Developed a messaging document for internal staff and affiliated personnel connected to the NCCP
- Provided strategic counsel on the management of social media and website development
- Explored and provided a briefing paper on an alternative stakeholder engagement tool for the NCCP called Bang the Table

The only two remaining outputs yet to be delivered for NCCP are two pro-active media releases, which will be carried over until Milestone 3 and result in a total of 6 pro-active media releases (rather than the contracted four) being issued to the media. Seftons was unable to produce these until the meetings with the Communications Working Group and Principal Investigators Workshop took place. We were also hoping to issue a pro-active media release regarding the announcement of the Community Stakeholder Engagement Workshops and Town Hall meetings in Milestone 2 - however this has been delayed until October - at the request of NCCP.

Repeat the following three sections for each milestone in the period being reported on:

1. ORIGINAL MILESTONE DATE AND TITLE:

18/07/2017 - Milestone 2

2. REVISED MILESTONE DATE AND TITLE:

20/08/2017 – Milestone 3 – Delivery of outstanding 2 Media Releases

3. PROGRESS AGAINST MILESTONE (Achieved/Not Achieved):

ACHIEVED

- Deliver communications matrix
 - Developed and wrote Communications Strategy Summary and provided to NCCP
 - Wrote communications project calendar timeline with each task for the communications project and provided to NCCP
- Deliver two pro-active media releases
 - Tailored media distribution list – identified key journalists and publications for national, state and regional media lists
 - Delivered *Research forms part of the process* Media Release – researched angle, drafted release, coordinated edits and approvals, distributed to media, facilitated interview requests and followed-up with media. Resulted in 10 requests for further information and 7 radio interviews
 - Delivered *Ricegrowers' Association preview* Media Release – researched angle, drafted release, coordinated edits and approvals. As a result of MDB story release was advised not to be sent out.
- Preparation of reactive responses to all relevant media within 24 hours
 - Daily media monitoring on issues/challenges to the NCCP and relevant information is forwarded on to NCCP team.
 - Weekly media analysis report provided with sentiment and key themes listed. Each story picked up on Isentia and BuzzWords is analysed, with about 10 questions answered for each, with data kept in a spreadsheet which is updated daily and forms the basis for the report.
 - Key themes are noted and issues management response is developed.
- Ongoing liaison with FRDC to identify and respond to threats
 - Daily phone calls and emails to FRDC/NCCP to discuss next steps and to identify issues.
 - Weekly media analysis report developed and provided
- Development of communications collateral and stakeholder engagement materials
 - Developed creative brief to send to creative agencies
 - Coordinated design and printing of pull-up banners
 - Liaised with NCCP to develop updated Fact Sheet
 - Provided edits to RSPCA article
- Preparation of content for quarterly newsletter
 - Wrote story list and provided ideas to NCCP
 - Established how the newsletter template would be developed
- Supply of communications materials for upload to website and social media
 - Provided Media Release to NCCP to upload to website
- Management of Communications Working Group
 - Provided nominations for CWG members to NCCP, provided contact details and invited attendees to first meeting
 - Updated Terms of Reference for CWG
 - Drafted agenda for CWG meeting
 - Managed RSVPs for first meeting
 - Facilitated first CWG meeting in Canberra
 -

NOT ACHIEVED

- Deliver two pro-active media releases - this output is yet to be delivered for, which will be carried over until Milestone 3 and result in a total of 6 pro-active media releases (rather than the contracted four) being issued to the media. Seftons was unable to produce these until the meetings with the Communications Working Group and Principal Investigators Workshop took place. We were aiming to issue at least one pro-active media release regarding the announcement of the Community Stakeholder Engagement Workshops and Town Hall meetings in Milestone 2 - however this has been delayed until October - at the request of NCCP.

ADDITIONAL OUTPUTS

- Formed a strategic alliance with the Murray Darling Basin Authority to facilitate critical stakeholder engagement activity with Councils
- Attended the Principal Investigators Workshop in Canberra to meet with all researchers and identify news angles
- Developed a messaging document for internal staff and affiliated personnel connected to the NCCP
- Provided strategic counsel on the management of social media and website development
- Developed and wrote a spokesperson policy for internal staff and affiliated personnel

PUBLICATIONS/PRODUCTS

- Communications Strategy Summary
- Communications and Spokesperson Policy
- Media Release 1 – Research forms part of the process
- Media Release 2 – Ricegrowers' Association (held)
- NCCP Talking Points
- Communication and Key Messages Summary
- Communications Action Plan Calendar
- Communications Working Group agenda
- Weekly media analysis report 7.7.2017
- Weekly media analysis report 17.7.2017
- Weekly media analysis report 24.7.2017

SPECIAL CONDITIONS

N/A

INTELLECTUAL PROPERTY ISSUES ARISING:

N/A

CONTACT WITH BENEFICIARIES:

- Emma Bradbury – Murray Darling Association
- Members of the Communications Working Group

PROGRESS AGAINST COMMUNICATION & EXTENSION PLAN:

The communications program is progressing exceptionally well with all agreed outputs met, except for the delivery of two pro-active media releases due to timings with the broader NCCP program. However, these will be delivered in the next milestone.

The communications activities have so far aligned with the objectives of this project. The objectives are to inform and engage communities and stakeholders about the NCCP; widely communicate the NCCP process; provide opportunities for community input into the NCCP; support the running of effective, informative and clear public information sessions; support and enhance FRDCs reputation through developing high quality materials and managing and delivering the project with high professionalism.

VARIATIONS TO PROJECT:

N/A

PT-04 - MILESTONE PROGRESS REPORT

FRDC PROJECT NUMBER: 2016-164

Title: FRDC Communications Program 2018

MILESTONE NUMBER: 3

DATE DUE: 28 February 2018

PRINCIPAL INVESTIGATOR: Seftons

OVERALL PROJECT PROGRESS:

Milestone Status

Has this milestone been achieved (Yes/No)	No
Will the project be completed according to the current milestone schedule (Yes/No)	Yes

PROJECT PROGRESS AGAINST PROJECT OBJECTIVES

Seftons were 'officially' appointed on X February 2018 when the contract was signed by both parties. Despite this two month delay in being formally appointed, the work continued seamlessly since the 1 December 2017.

The focus for work in February was based on the scheduled Communications Working Group meeting held in Canberra, the management of some opposing research papers published and the development of some key communications collateral.

Specific content produced included:

- Development of an agenda for the first CWG meeting of 2018
- Development of a presentation summarising the outputs and results for the 2017 communications and stakeholder engagement program
- Development of a presentation on the strategic direction of the communications and stakeholder engagement program including opportunities and perceived challenges
- Development of a presentation on the initial findings from the 2017 community consultation clicker surveys from NSW and VIC consultation
- Finalisation of five NCCP animations
- Development of the Thresher media release in response to contradictory research
- Collation of meeting minutes from Consultation meetings in Goulburn, Inverell, Muswellbrook, Maitland
- Development of a content plan for Bang the Table – yoursay.carp.gov.au
- Development of briefing notes for NCCP meeting with Minister for Agriculture
- Attendance and facilitation of Canberra consultation
- Media counsel to NCCP in response to Weekly Times article
- Respond to reactive media enquiries including 4RR and Victoria's Channel 9 TV
- Worked closely with NCCP digital representative on digital communications activity including Riverside Stories and Clearer Waters

The only two remaining outputs yet to be delivered for NCCP are two pro-active media releases, which will be carried over until Milestone 4 and result in a total of 4 pro-active media releases (rather than the contracted two) being issued to the media. Seftons was unable to produce these as research projects were not ready for sharing with the general public. Additionally, it was our strategic recommendation to focus on managing the media response to the Thresher paper rather than draw attention to it. Finally, the communications and stakeholder engagement plan did not receive

the support of members of the Communications Working Group until late February at the first face-to-face meeting for 2018.

Repeat the following three sections for each milestone in the period being reported on:

1. ORIGINAL MILESTONE DATE AND TITLE:

28/02/2018 - Milestone 2

2. REVISED MILESTONE DATE AND TITLE:

30/03/2018 – Milestone 3 – Delivery of outstanding 2 Media Releases

3. PROGRESS AGAINST MILESTONE (Achieved/Not Achieved):

ACHIEVED

- Management of the Communications Working Group, in conjunction with NCCP
 - Development of an agenda for the first CWG meeting of 2018
 - Development of a presentation summarising the outputs and results for the 2017 communications and stakeholder engagement program
 - Development of a presentation on the strategic direction of the communications and stakeholder engagement program including opportunities and perceived challenges
 - Development of a presentation on the initial findings from the 2017 community consultation clicker surveys from NSW and VIC consultation
 - Attendance at the meeting and minutes taken
- Delivered five animations for NCCP final review
 - Liaised with CWG to seek feedback to animations
 - Liaised with The Animation Company to edit and finalise five animations
 - Delivered five animations to NCCP.
- Provided reactive media support to NCCP
 - Provided strategic counsel in response to Ron Thresher paper
 - Developed response to Ron Thresher Paper for NCCP
 - Strategic advice to NCCP on response channels for Ron Thresher paper
 - Provided strategic counsel to NCCP following Weekly Times publication of carp story
- Preparation of reactive responses to all relevant media within 24 hours
 - Daily media monitoring on issues/challenges to the NCCP and relevant information is forwarded on to NCCP team.
 - Weekly media analysis report provided with sentiment and key themes listed. Each story picked up on Isentia and BuzzWords is analysed, with about 10 questions answered for each, with data kept in a spreadsheet which is updated daily and forms the basis for the report.
 - Key themes are noted and issues management response is developed.
 - Victoria Channel 9 Gippsland re broader NCCP story
 - 4RR media interview request
 - Fielded media enquiries and requests on behalf of ACT and QLD community consultation events
- Ongoing liaison with FRDC to identify and respond to threats
 - Daily phone calls and emails to FRDC/NCCP to discuss next steps and to identify issues.
 - Weekly media analysis report developed and provided
- Supply of communications materials for upload to website and social media
 - Provided reactive media statements/response to NCCP to upload to website
- Bang the Table content management
 - Developed and delivered content management plan for NCCP Bang the Table
 - Commenced the establishment of working group pages on Bang the Table

NOT ACHIEVED

The only two remaining outputs yet to be delivered for NCCP are two pro-active media releases, which will be carried over until Milestone 4 and result in a total of 4 pro-active media releases (rather than the contracted two) being issued to the media. Seftons was unable to produce these as research projects were not ready for sharing with the general public. Additionally, it was our strategic recommendation to focus on managing the media response to the Thresher paper rather than draw attention to it. Finally, the communications and stakeholder engagement plan did not receive the support of members of the Communications Working Group until late February at the first face-to-face meeting for 2018.

PUBLICATIONS/PRODUCTS

- Communications Working Group agenda – February 2018
- Presentation to summarise results of 2017 Communications / Stakeholder Engagement program
- Presentation to summarise community engagement activity and early results from NSW and VIC
- Delivery of five NCCP animations to NCCP for final approval
- Weekly media analysis report 5.2.2018
- Weekly media analysis report 12.2.2018
- Weekly media analysis report 19.2.2018
- Weekly media analysis report 26.2.2018

SPECIAL CONDITIONS

N/A

INTELLECTUAL PROPERTY ISSUES ARISING:

N/A

CONTACT WITH BENEFICIARIES:

- Members of the Communications Working Group
- Liaised with CSIRO re Ron Thresher paper and response

PROGRESS AGAINST COMMUNICATION & EXTENSION PLAN:

The communications program is getting off to a positive start well with all agreed outputs met, except for the delivery of two pro-active media releases due to timings with the broader NCCP program. However, these will be delivered in the next milestone.

The communications activities have so far aligned with the objectives of this project. The objectives are to inform and engage communities and stakeholders about the NCCP; widely communicate the NCCP process; provide opportunities for community input into the NCCP; support the running of effective, informative and clear public information sessions; support and enhance FRDCs reputation through developing high quality materials and managing and delivering the project with high professionalism.

VARIATIONS TO PROJECT:

N/A

Agenda – Communications Working Group

Date:	Tuesday 13 th February Time 9am – 4pm
Chair:	Robbie Sefton
Attendees:	Vicki Woodburn (MDBA), Fontella Koleff (PIRSA), Geoff Virtue (ACT Govt), Stacey Vogel (CottonInfo), Emma Bradbury (MDA via teleconference), Louise Pemble (DAWR), Matt Michel (DAWR), Dr. Jacki Schirmer (Uni. Of Canberra), Maggie Hill (VIC), Ian McDonald (Invasive Animals), Ofa Fitzgibbons (CSIRO), NSW DPI (Name TBA via teleconference), Jayne Goldring (Seftons), Kerin Heatley (Seftons)
Location:	Murray Darling Basin Authority Offices – 33 Allara St, Canberra ACT
Teleconference Details	Redbank Conferencing Phone: 1800 896 323 Code: 4848 418 521

Time	Agenda Item	Resp.
9:00 – 10:30am	Meeting Opens The meeting will begin with a combined session of the NCCP Science Advisory Group, Policy Advisory Group, Operations Working Group and Communications Working Group. This session will involve NCCP presentations, with time for questions. Following these presentations, the four NCCP bodies will adjourn to separate meeting rooms to address agenda items.	Matt Barwick, NCCP
10:30 – 10:45am	Morning Tea (Advisory Groups adjourn to meeting rooms)	
10:45am	Welcome Meeting Apologies	Chair – Robbie Sefton
10:50am – 11:50am	1. State / Territory Communications Reports 1.1.1 Stakeholder engagement update 1.1.2 Media relations update 1.1.3 Issues management 1.1.4 2018 Opportunities	State & Territory representatives
11:50am – 12:30pm	2. Community Consultation Reporting 2.1 Overview of outcomes to date 2.2 State feedback & localised activity 2.3 Next steps	Seftons All
12:30 – 1:15pm	3. Social Research Overview 3.1 Update on analysis and insights 3.2 Questions	Jacki Schirmer

1:15pm – 1:45pm	Catered Lunch Provided	
1:45pm – 2:15pm	4. 2018 Strategic Direction & Upcoming Activity	Seftons
2:15pm – 2:45pm	5. Digital Media Update 5.1 Clear Waters Series 5.2 Riverside Stories Series	Tom Rayner
2:45pm – 3:00pm	6. Additional Communications Components 6.1 Bang the Table 6.2 Animations 6.3 Any other business	Tom Rayner All All All
3:00pm – 4:00pm	Plenary Session & Meeting Review This facilitated session will involve a combined session of the NCCP Science Advisory Group, Policy Advisory Group, Operations Working Group and Communications Working Group to discuss: <ul style="list-style-type: none"> • Critical 2018 milestones / deliverables for each group • Major inputs from / outputs to other groups • Identify suitable workflow processes • Issues / Concerns The meeting will close with a review from Matt Barwick and Charis on discussions and actions for each group.	All
CLOSE		

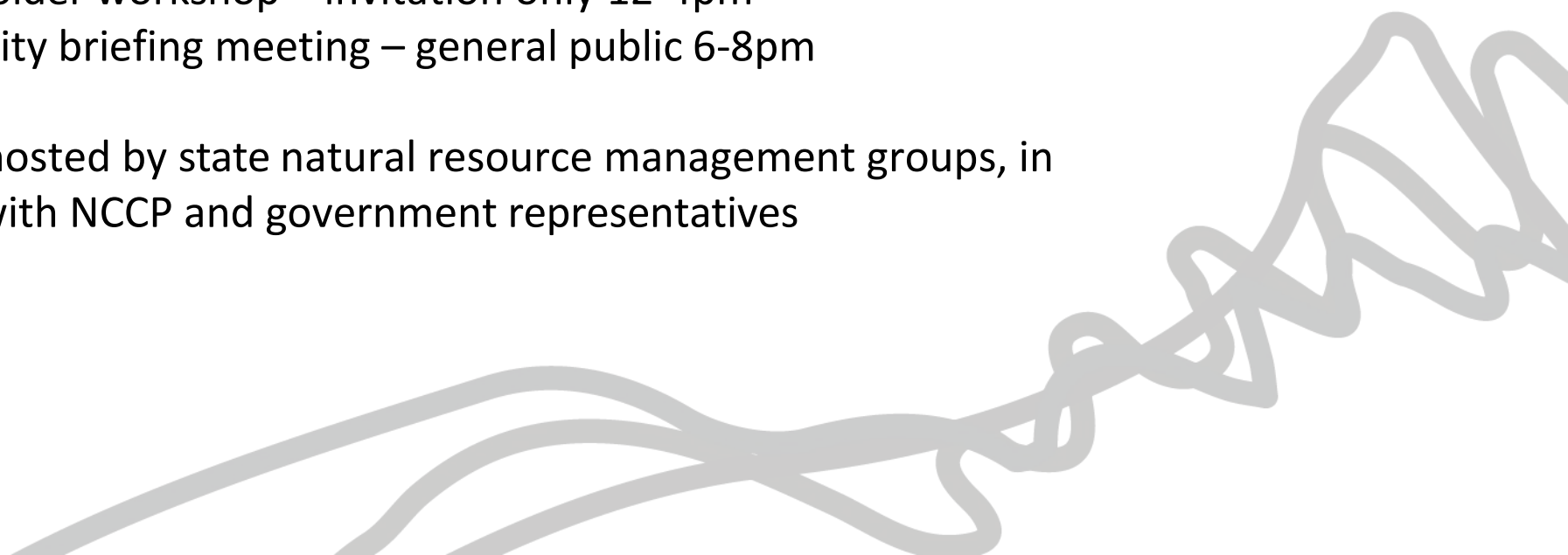
National Carp Control Plan Community Consultation Summary

Communications Working Group Meeting
13 February 2018



Stakeholder Workshops & Community Briefings

- Stakeholder workshops and community briefing meetings have been held in 33 locations throughout Australia to date.
- Approximately 7 locations remain for ACT, Queensland, Tasmania and WA.
- Majority of locations hosted a:
 - A stakeholder workshop – invitation only 12-4pm
 - Community briefing meeting – general public 6-8pm
- Events were hosted by state natural resource management groups, in partnership with NCCP and government representatives

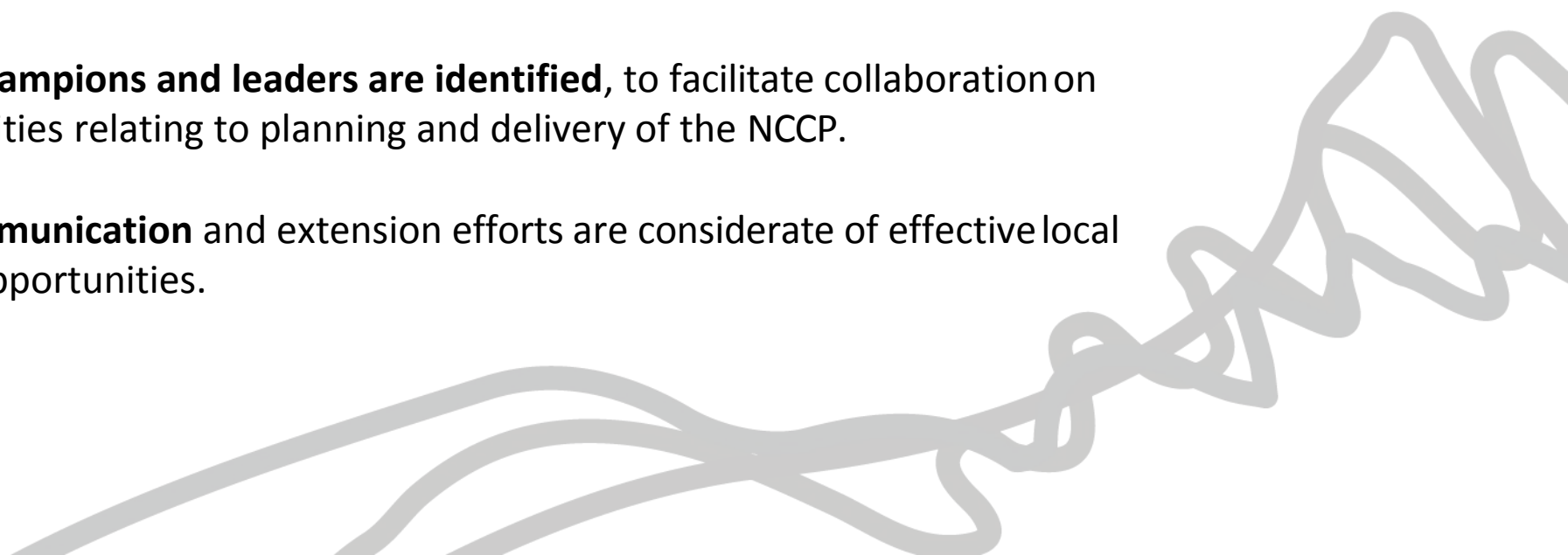


Stakeholder Engagement Workshop Audience

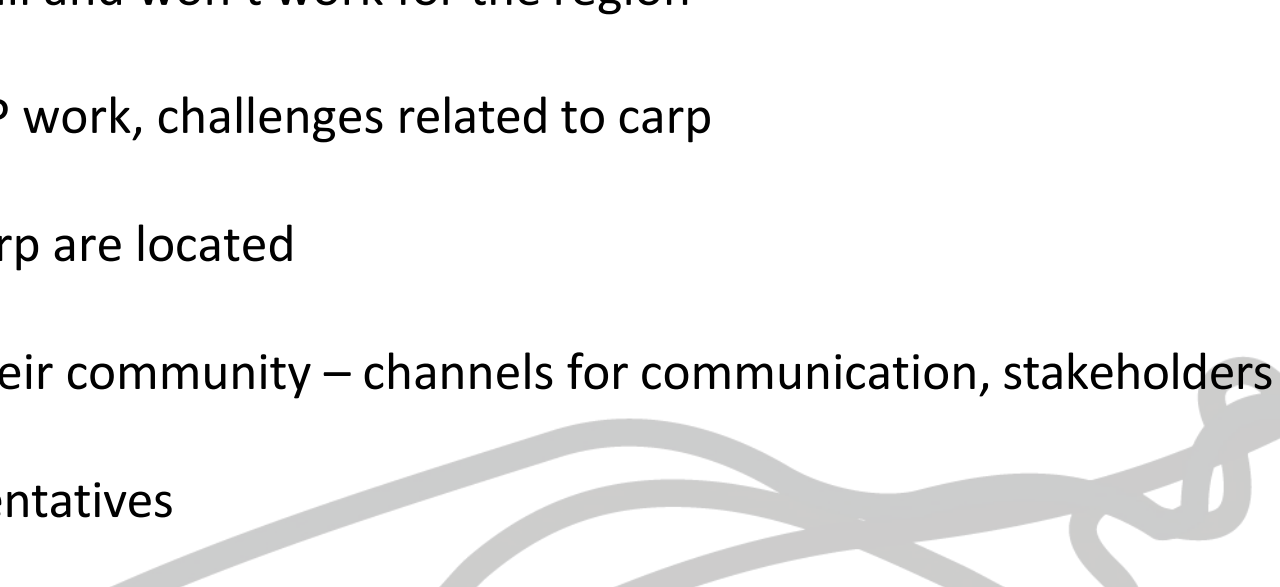


Stakeholder Workshop Objectives

- Ensure **stakeholders are up to date re the NCCP**, including focus, process, timelines, supporting information and activities.
- Key stakeholder groups have an **opportunity to provide input** to the development of the plan.
- Those developing the **NCCP have a more detailed understanding of key local assets and risks that require consideration** for planning.
- Key **local champions and leaders are identified**, to facilitate collaboration on future activities relating to planning and delivery of the NCCP.
- **Future communication** and extension efforts are considerate of effective local tools and opportunities.



Stakeholder Engagement Format

- **State lead presentation (where applicable)**
 - State Govt. activities underway to encourage recovery of aquatic ecosystems
 - Importance of the NCCP
 - **NRM presentation**
 - Local insights into the issue of carp in the region
 - Work already underway / tried
 - What solutions will and won't work for the region
 - **NCCP presentation**
 - Overview of NCCP work, challenges related to carp
 - **Facilitated Sessions**
 - Identify where carp are located
 - Risk identification
 - Understanding their community – channels for communication, stakeholders to be consulted
 - Q&A with representatives
 - Next steps
- 

Community Briefing Meeting Objectives



- To provide an opportunity for members of the general public to:
 - Hear about the work underway by the NCCP, NRM and government
 - Learn more about carp, the challenges they present and the impact on waterways
 - Understand what carp reduction methods have been tried before and why a virus is being considered
 - Ask questions on areas of interest / concern

Consultation Analysis

Multiple methods for capturing feedback and measuring effectiveness of consultation:

- Keepad Interactive – Response Clickers
- Registration forms
- Participant survey forms
- Q&A sessions at each meeting with information captured
- Stakeholder workshops - group notes



Consultation Reporting

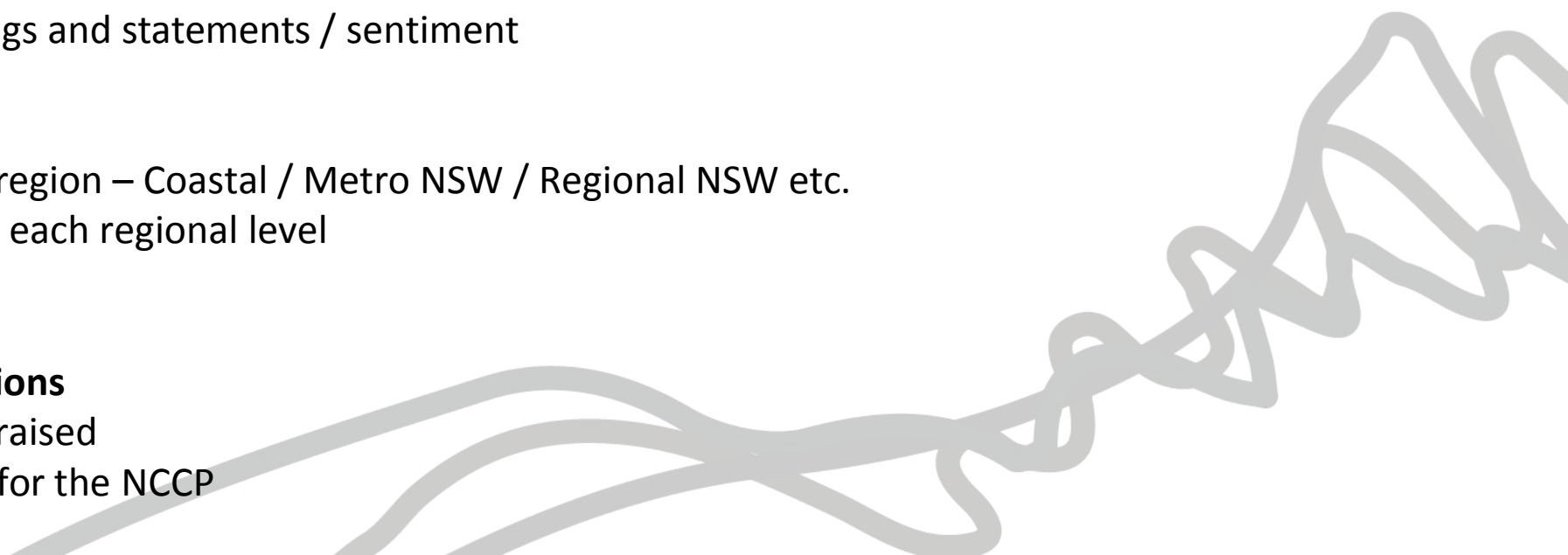
Overall Report

- How many events
- Where they were held (map of locations)
- How many people were engaged
- Demographics of those attendees
- Major issues raised (across questions and clicker data)
- Preferred engagement methods by attendees
- Clean-up insights – community views on who should lead / be involved
- Breakdown of findings and statements / sentiment

Regional summary

- Breakdown by region – Coastal / Metro NSW / Regional NSW etc.
- Issues raised at each regional level
- Risks identified

Overall Recommendations

- Summary of issues raised
 - Recommendations for the NCCP
- 

- Preferred Ongoing Communications Methods

Some Initial Insights (NSW & VIC)



What category best describes your overall interest?

1. What category best describes your overall NCCP interest?

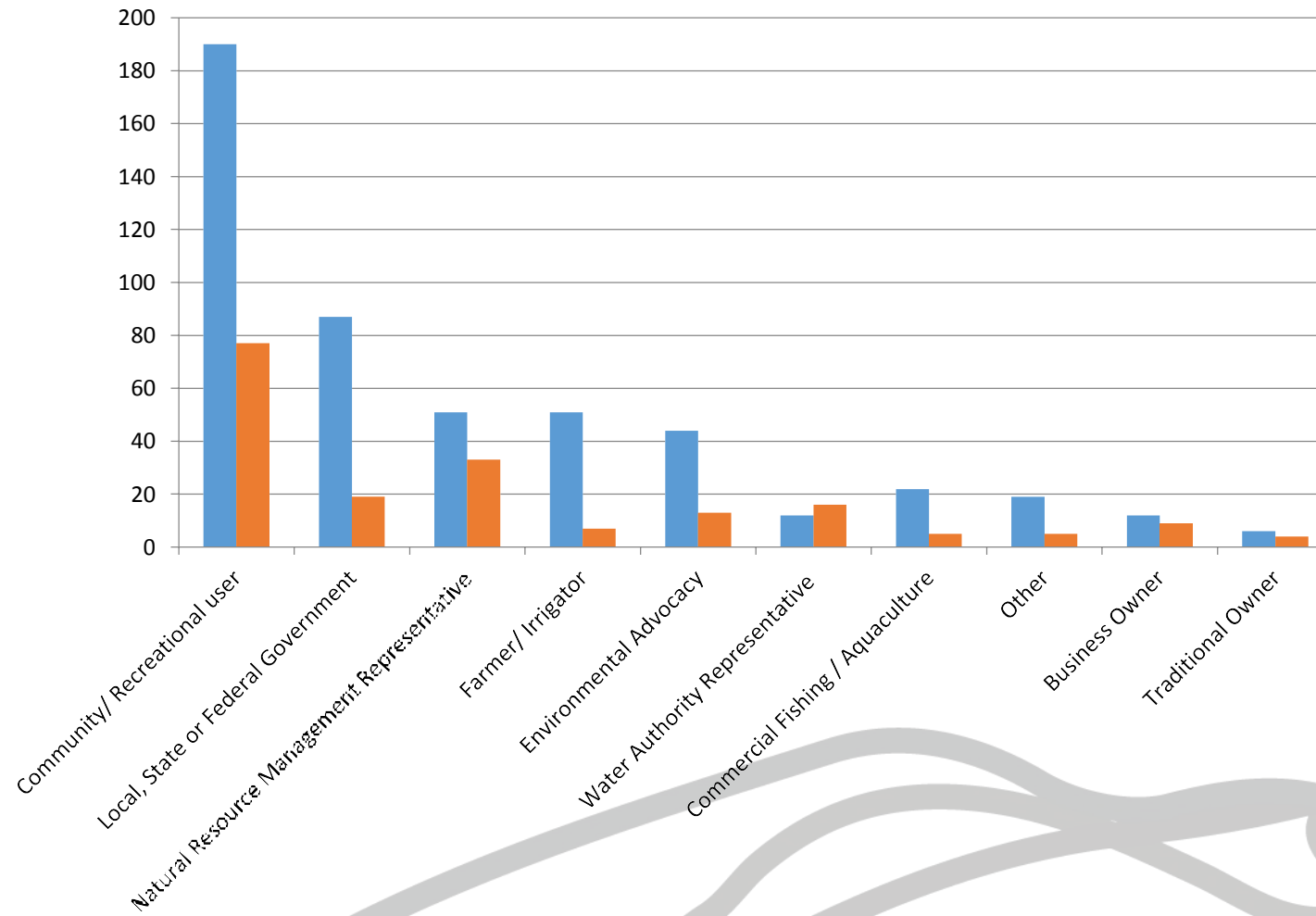
	Responses		
	NSW Count	VIC Count	Total Count
Community/ Recreational user	190	77	267
Local, State or Federal Government	87	19	106
Natural Resource Management Representative	51	33	84
Farmer/ Irrigator	51	7	58
Environmental Advocacy	44	13	57
Water Authority Representative	12	16	28
Commercial Fishing / Aquaculture	22	5	27
Other	19	5	24
Business Owner	12	9	21
Traditional Owner	6	4	10
Totals	494	188	682

Which are the most important aspects of today / tonight's discussion for you?

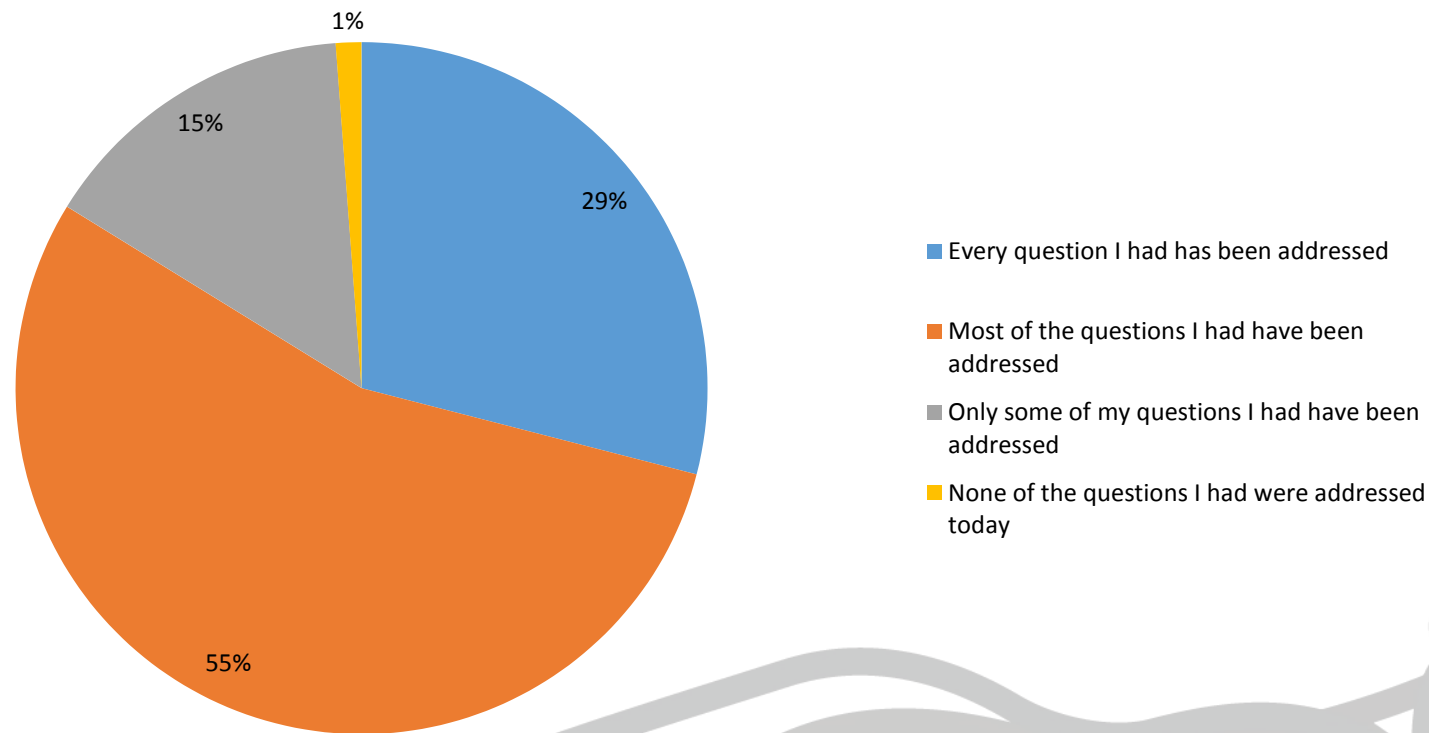
2. Which are the most important aspects of today tonight's discussion for you?

	Responses		
	NSW Count	VIC Count	Total Count
Clean up strategies	117	35	152
Virus evolution	100	22	122
How our rivers might change with fewer carp.	41	25	66
Carp virus.	40	19	59
Water quality Impact.	38	11	49
How the virus release might occur.	26	5	31
Impact of virus outcomes on recreational water use.	15	7	22
Economic impact on industry	16	5	21
Human health considerations	8	5	13
Impacts on tourism & local business	6	4	10
Water access for human use	9	1	10
Visual & odour impacts of fish kills	9	1	10
Totals	425	140	565

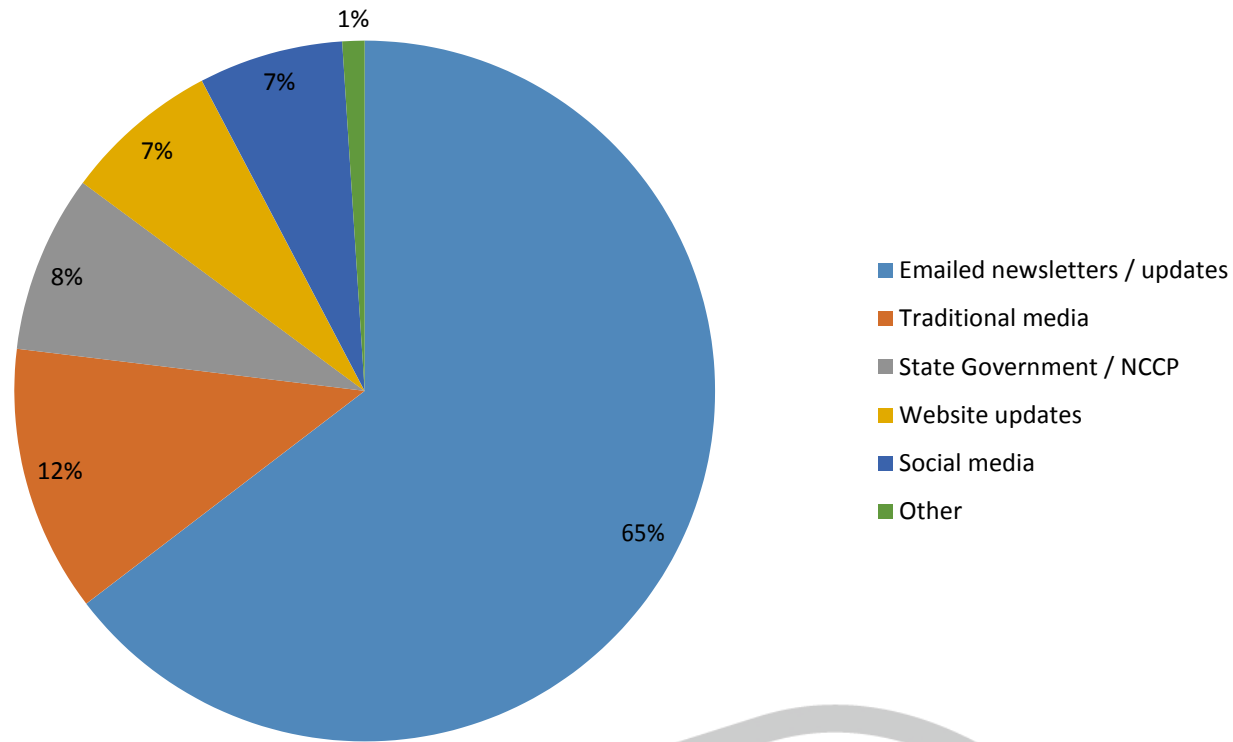
Which are the most important aspects of today / tonight's discussion for you?



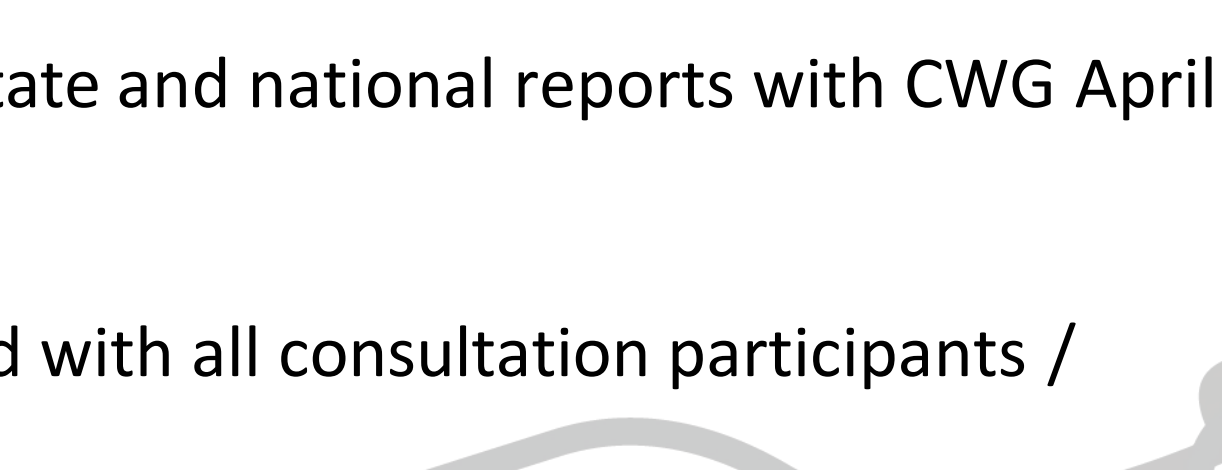
After the meeting and information that has been shared, which of the following is most true for you in regard to the NCCP?



How would you prefer the NCCP and State Government continue to communicate with you?



Next Steps

- Continue consultation in QLD, ACT, TAS and WA
 - Commence analysis of data – underway now
 - Aim to share draft state and national reports with CWG April 2018.
 - Reports to be shared with all consultation participants / attendees
- 

National Carp Control Plan – Weekly Media Report

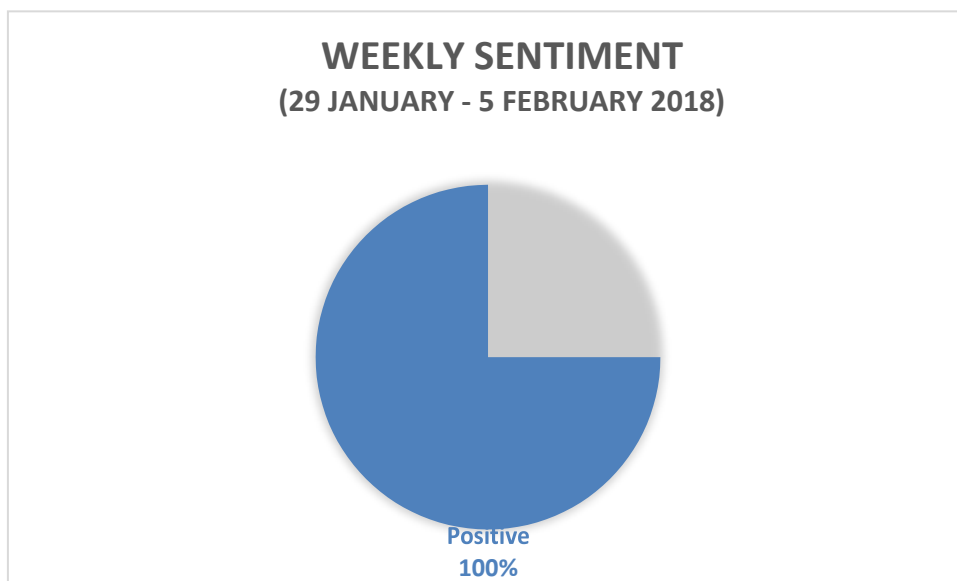
29 January – 5 February 2018

Total NCCP articles published this week: 2

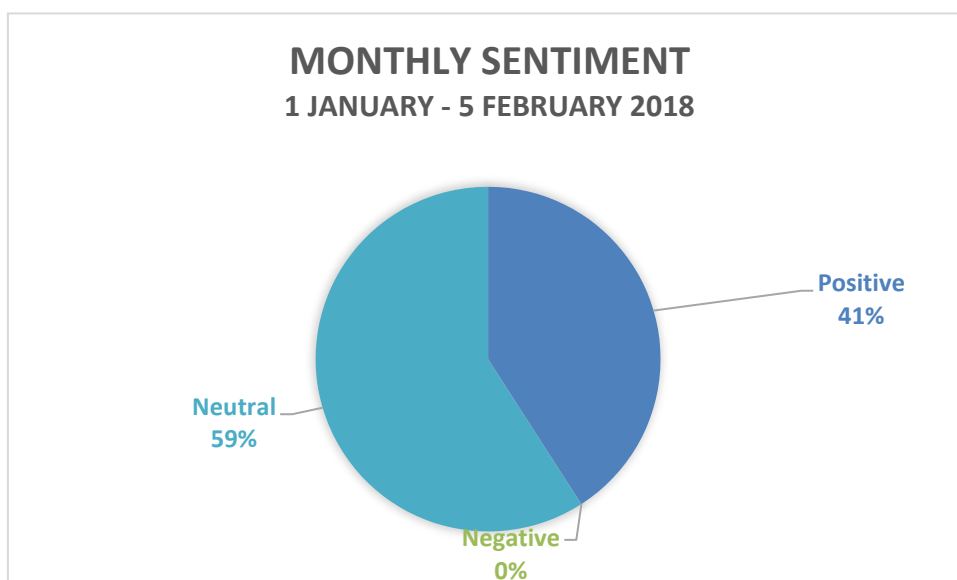
Total NCCP articles published this month: 22

The below pie chart illustrates the number of articles and the general 'sentiment' for the National Carp Control Plan, for the week and for the month. For more on how to read the chart, see below.

Number of Articles and Sentiment in media – this week



Number of Articles and Sentiment in the media – month (January)



Number of Articles and Sentiment in media – this week

- In the period 29 January – 5 February 2018, the National Carp Control Plan received coverage in two stories one print and one online.
- ❓ Both of these articles were of positive in sentiment.
- ❓ Murray Valley Standard includes an article discusses the upcoming NCCP community session at Mannum.
- ❓ Featuring on the South Australian, Primary Industries and Regions website is a mention of the upcoming NCCP community sessions in Mannum and Adelaide.

Number of Articles and Sentiment in media – month

- ❓ This month (January), NCCP has received coverage in 15 articles. With seven additional articles with relevance to Carp.

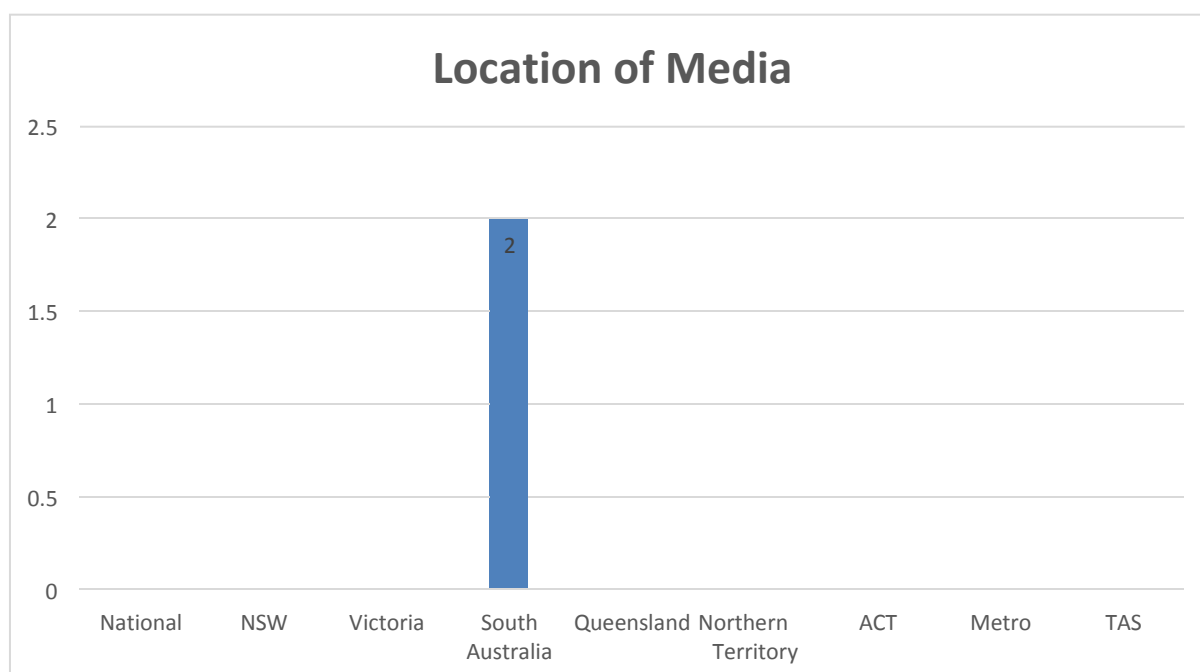
How to read the chart:

The pie chart represents the Neutral, Positive and Negative sentiment of media monitored for the week.

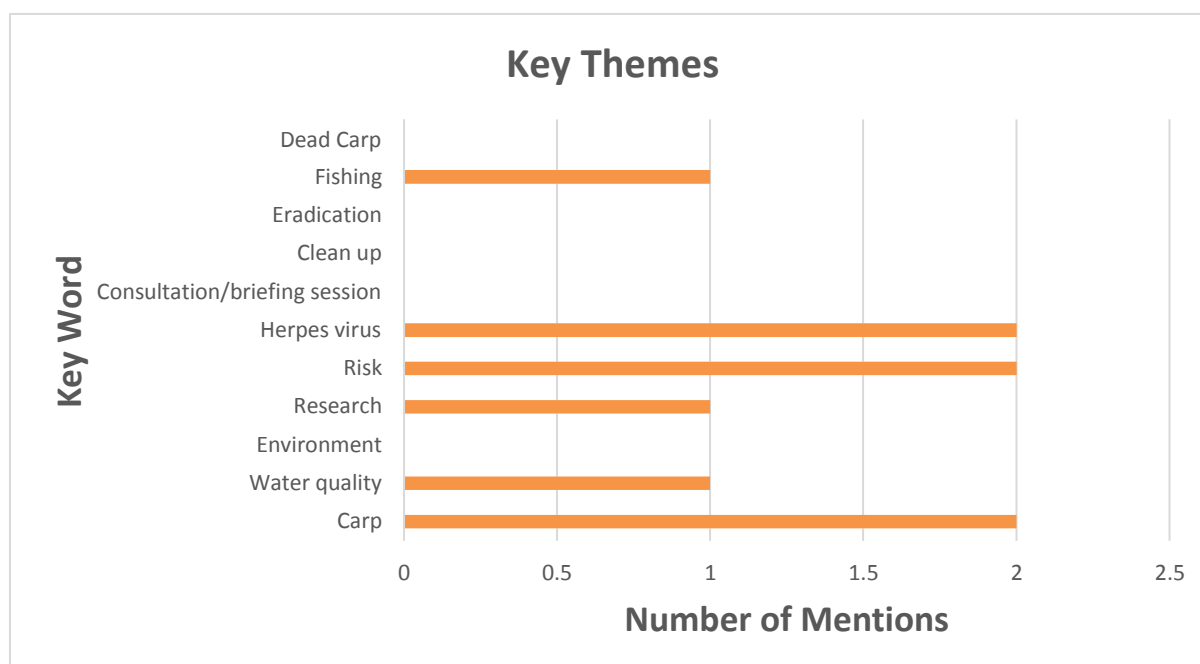
Sentiment is based on a simple points system, where 1 point is given to each article which has been deemed positive, negative or neutral.

Location of Media - week

- The below chart identifies what state the articles appear – they are broken down in to state (individual), national or metro locations.



Key themes/messages in media – this week



- 2 In the two articles monitored this week the key themes were carp and herpes virus & risk. Although the theme may be mentioned more than once in the article, this is only captured once to show what the key theme in the article was. An article may have more than one key theme.

National Carp Control Plan – Weekly Media Report

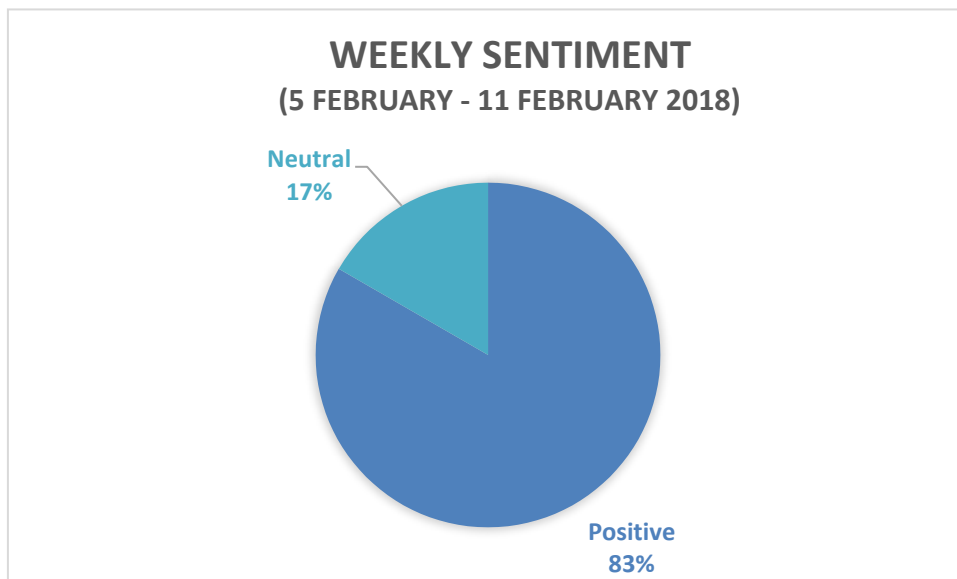
5 February – 11 February 2018

Total NCCP articles published this week: 6

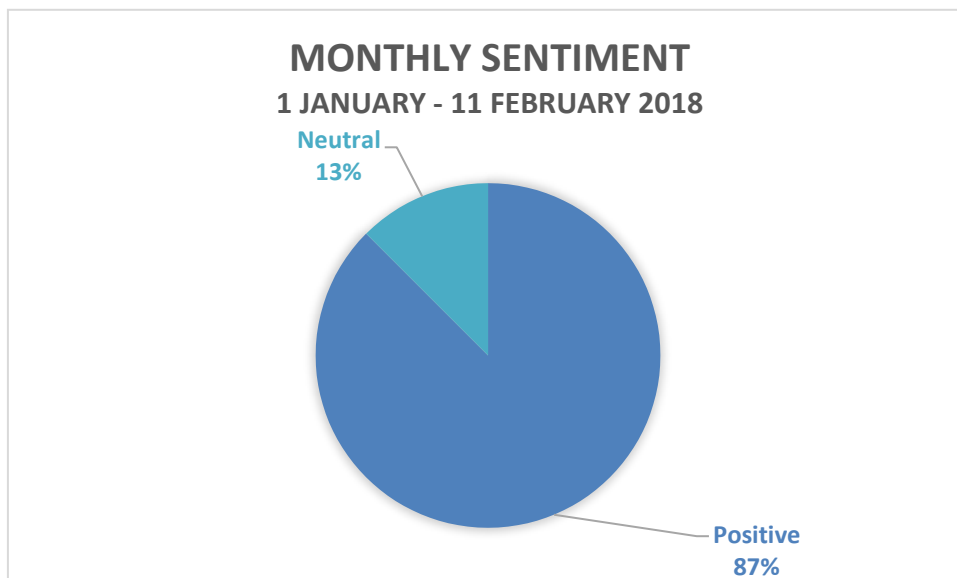
Total NCCP articles published this month: 8

The below pie chart illustrates the number of articles and the general ‘sentiment’ for the National Carp Control Plan, for the week and for the month. For more on how to read the chart, see below.

Number of Articles and Sentiment in media – this week



Number of Articles and Sentiment in the media – month (February)



Number of Articles and Sentiment in media – this week

- In the period 5 February – 11 February 2018, the National Carp Control Plan received coverage in six stories, four radio mentions and two print articles.
- ❑ Five of these stories were positive in sentiment with one neutral mention.
- ❑ ABC Radio Adelaide, ABC Radio Riverland and ABC Radio Central Victoria all discuss the upcoming community sessions to discuss the National Carp Control Plan.
- ❑ The Murray Valley Standard included an article on the Mannum NCCP Carp community session.
- ❑ Southern Times Messenger includes an article on the removal of 1500 carp that have been removed from the McLaren flat.

Number of Articles and Sentiment in media – month

- ❑ This month (February), NCCP has received coverage in 8 articles. With seven additional articles with relevance to Carp.

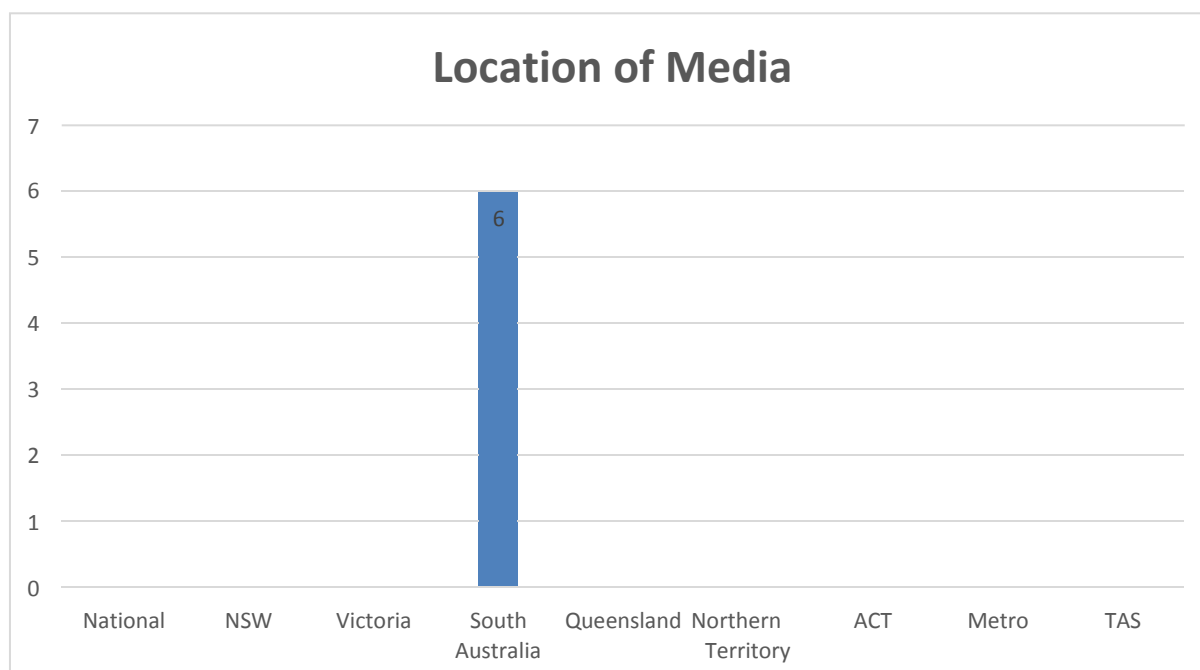
How to read the chart:

The pie chart represents the Neutral, Positive and Negative sentiment of media monitored for the week.

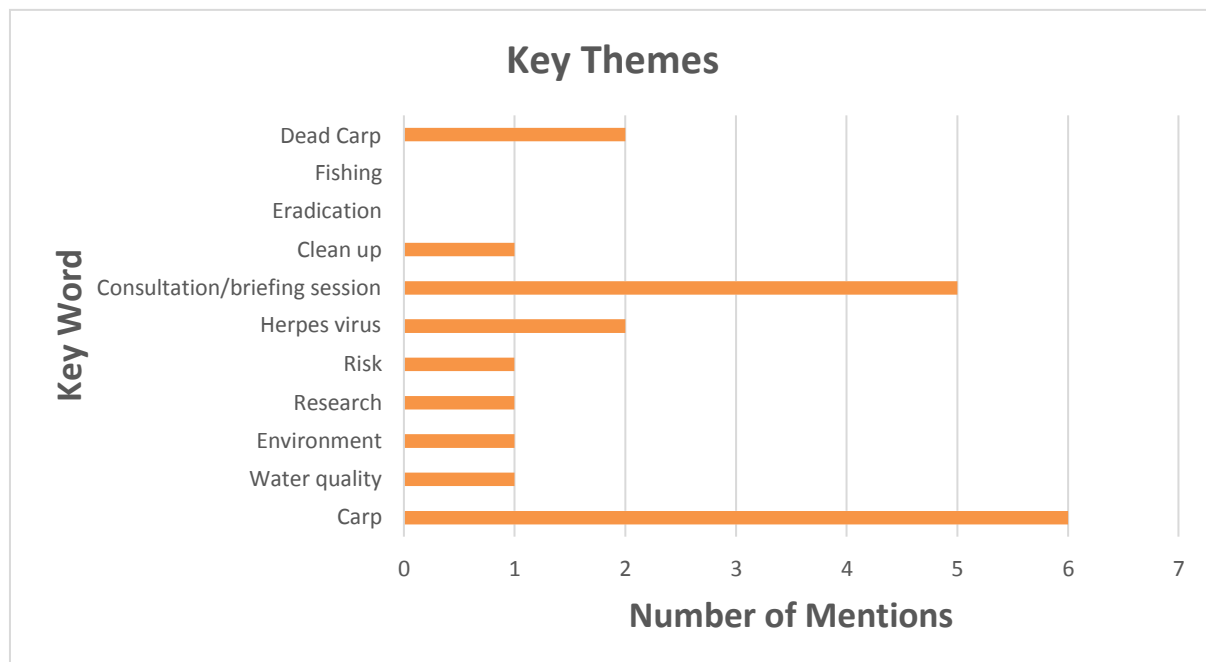
Sentiment is based on a simple points system, where 1 point is given to each article which has been deemed positive, negative or neutral.

Location of Media - week

- The below chart identifies what state the articles appear – they are broken down in to state (individual), national or metro locations.



Key themes/messages in media – this week



- ❓ In the six articles monitored this week the key themes were carp and consultation/briefing session followed by dead carp and herpes virus. Although the theme may be mentioned more than once in the article, this is only captured once to show what the key theme in the article was. An article may have more than one key theme.

National Carp Control Plan – Weekly Media Report

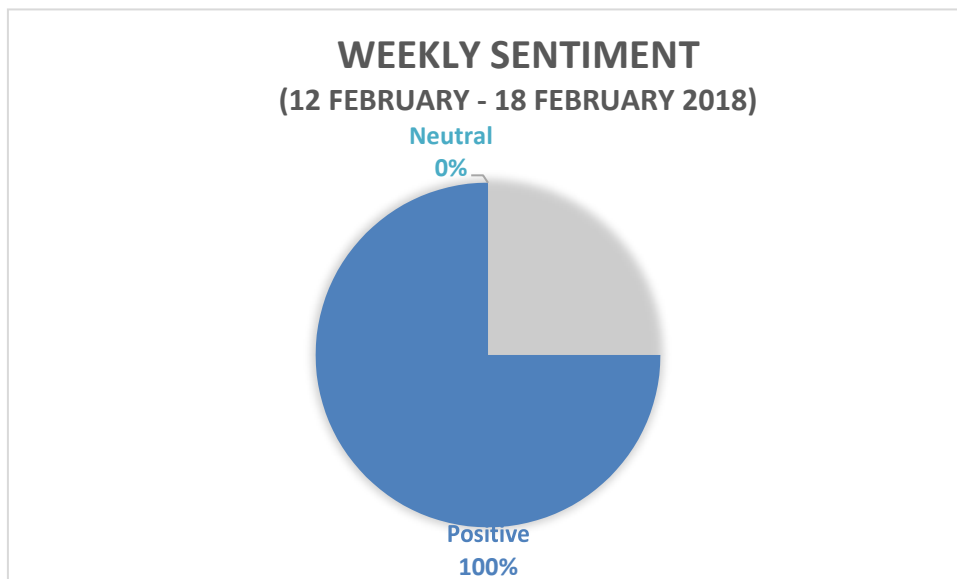
12 February – 18 February 2018

Total NCCP articles published this week: 6

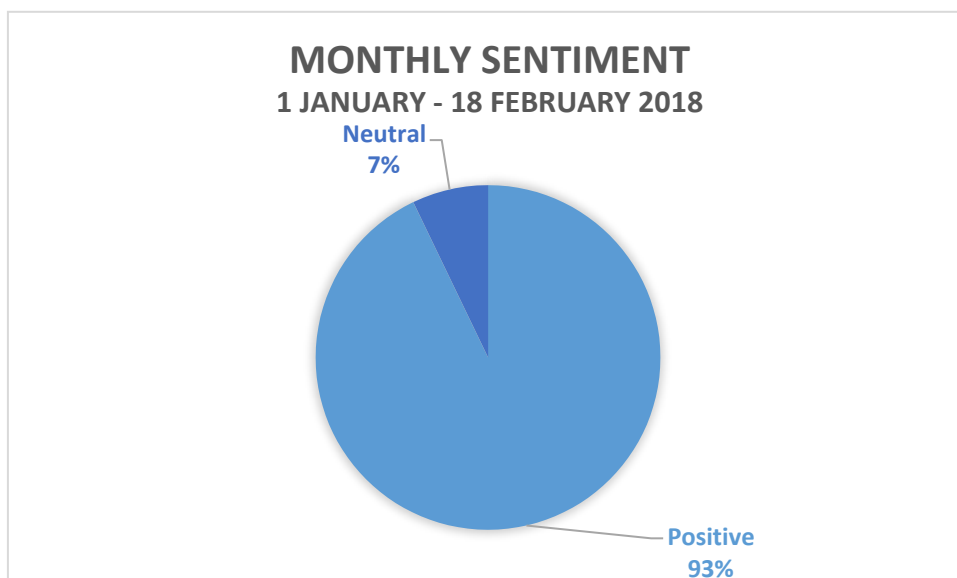
Total NCCP articles published this month: 14

The below pie chart illustrates the number of articles and the general 'sentiment' for the National Carp Control Plan, for the week and for the month. For more on how to read the chart, see below.

Number of Articles and Sentiment in media – this week



Number of Articles and Sentiment in the media – month (February)



Number of Articles and Sentiment in media – this week

- In the period 12 February – 18 February 2018, the National Carp Control Plan received coverage in six stories, three radio mentions and three print articles.
- ❑ All of these stories were positive in sentiment.
- ❑ ABC Radio Canberra and ABC Riverina all discuss the upcoming community sessions to discuss the National Carp Control Plan.
- ❑ The Murray Valley Standard included two articles on the Mannum NCCP Carp community session.
- ❑ Northside Cronicle includes an article on the NCCP and the upcoming community information session in Ainslie.

Number of Articles and Sentiment in media – month

- ❑ This month (February), NCCP has received coverage in 14 articles.

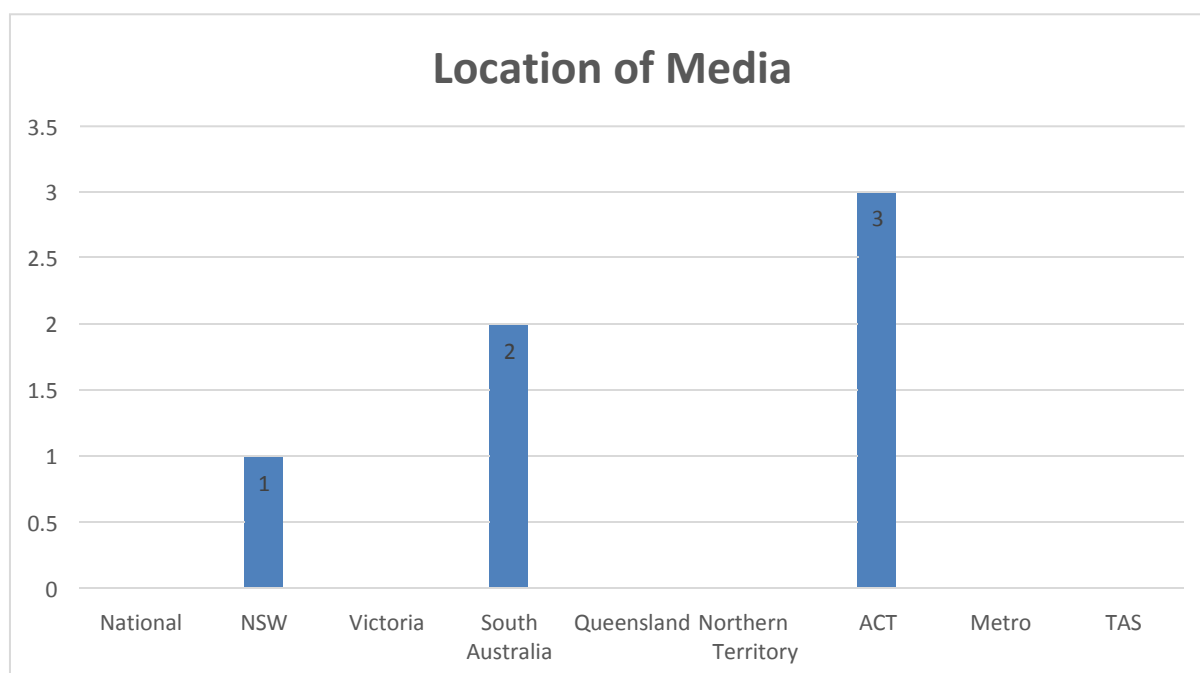
How to read the chart:

The pie chart represents the Neutral, Positive and Negative sentiment of media monitored for the week.

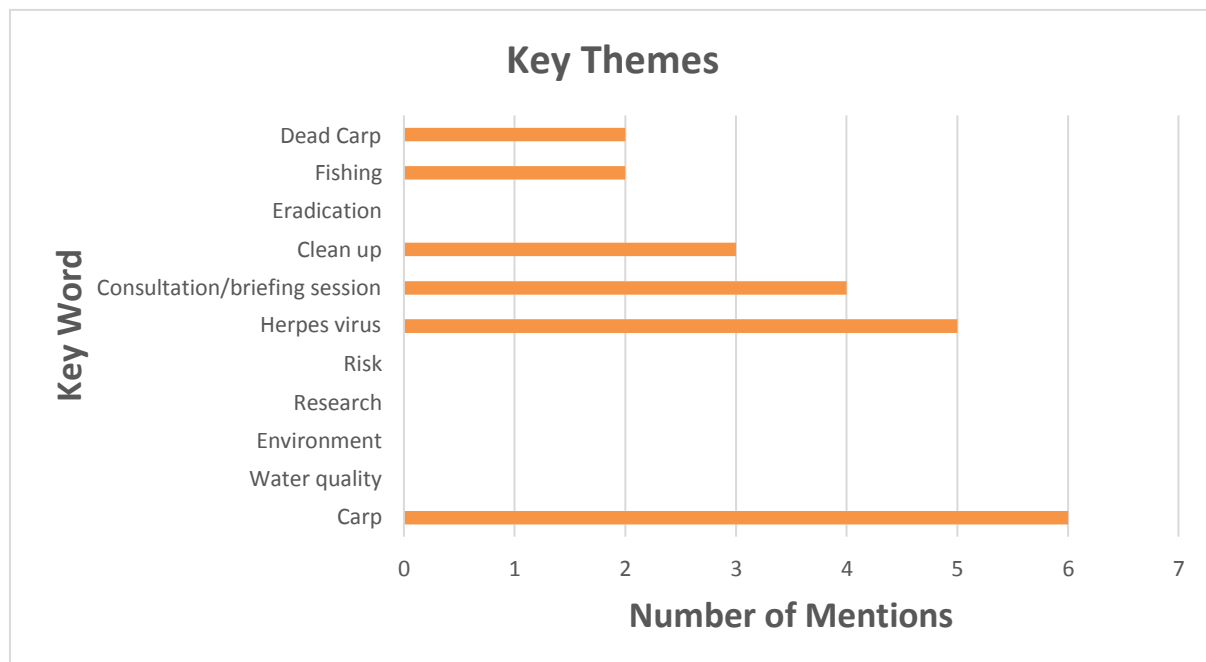
Sentiment is based on a simple points system, where 1 point is given to each article which has been deemed positive, negative or neutral.

Location of Media - week

- The below chart identifies what state the articles appear – they are broken down in to state (individual), national or metro locations.



Key themes/messages in media – this week



- ❓ In the six articles monitored this week the key themes were carp and herpes virus followed by consultation/briefing session and clean up. Although the theme may be mentioned more than once in the article, this is only captured once to show what the key theme in the article was. An article may have more than one key theme.

National Carp Control Plan – Weekly Media Report

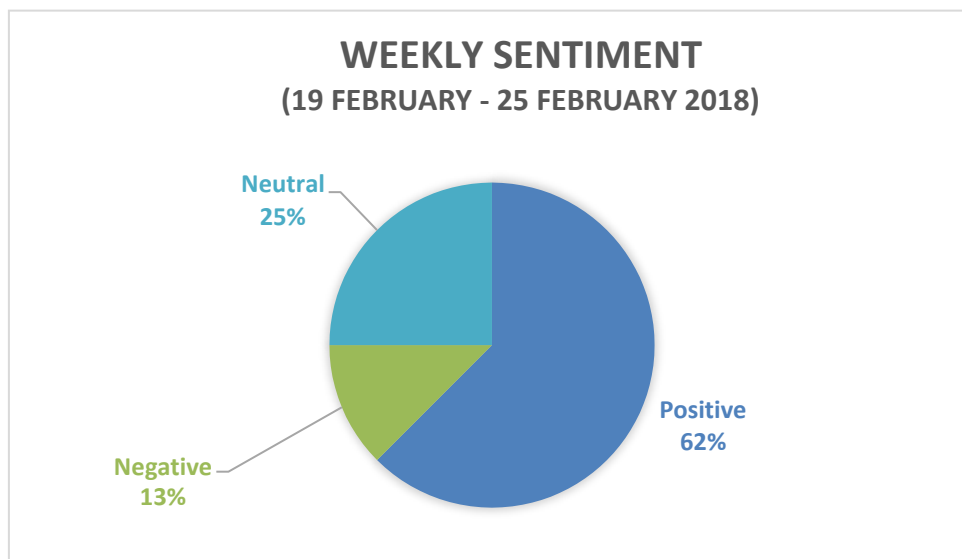
19 February – 25 February 2018

Total NCCP articles published this week: 8

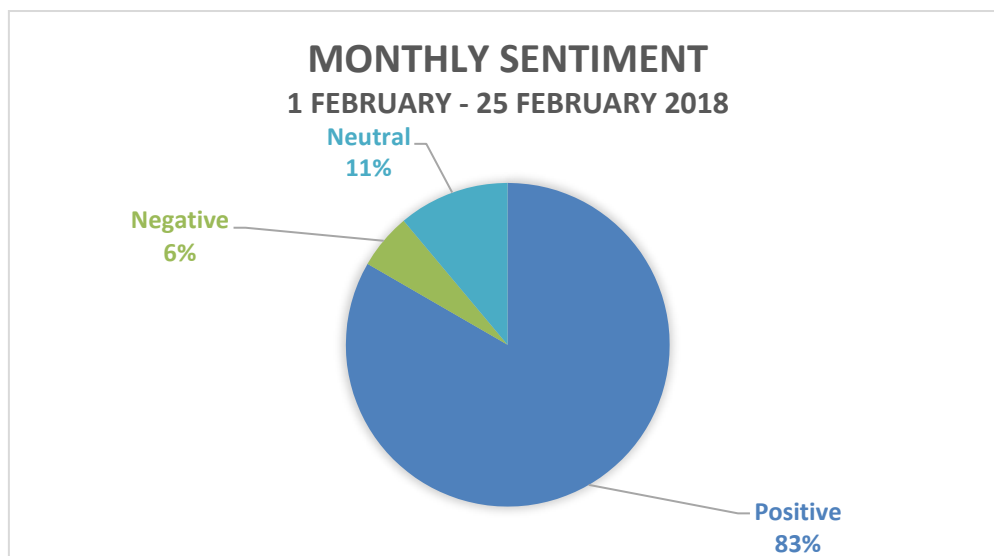
Total NCCP articles published this month: 22

The below pie chart illustrates the number of articles and the general 'sentiment' for the National Carp Control Plan, for the week and for the month. For more on how to read the chart, see below.

Number of Articles and Sentiment in media – this week



Number of Articles and Sentiment in the media – month (February)



Number of Articles and Sentiment in media – this week

- In the period 19 February – 25 February 2018, the National Carp Control Plan received coverage in eight stories: one online journal, two radio mentions and five print articles.
- Five of these stories were positive in sentiment, two were neutral and one was negative.
- 2CC Radio Canberra segment discussed the upcoming community sessions held by National Carp Control Plan.
- All Queensland articles discuss the upcoming National Carp Control Plan community sessions and encouraged attendance or contact with the National Carp Control Plan.
- Nature.com featured an online research article discussing the efficacy of the virus and sentiment was negative.

Number of Articles and Sentiment in media – month

- This month (February), NCCP has received coverage in 22 articles.

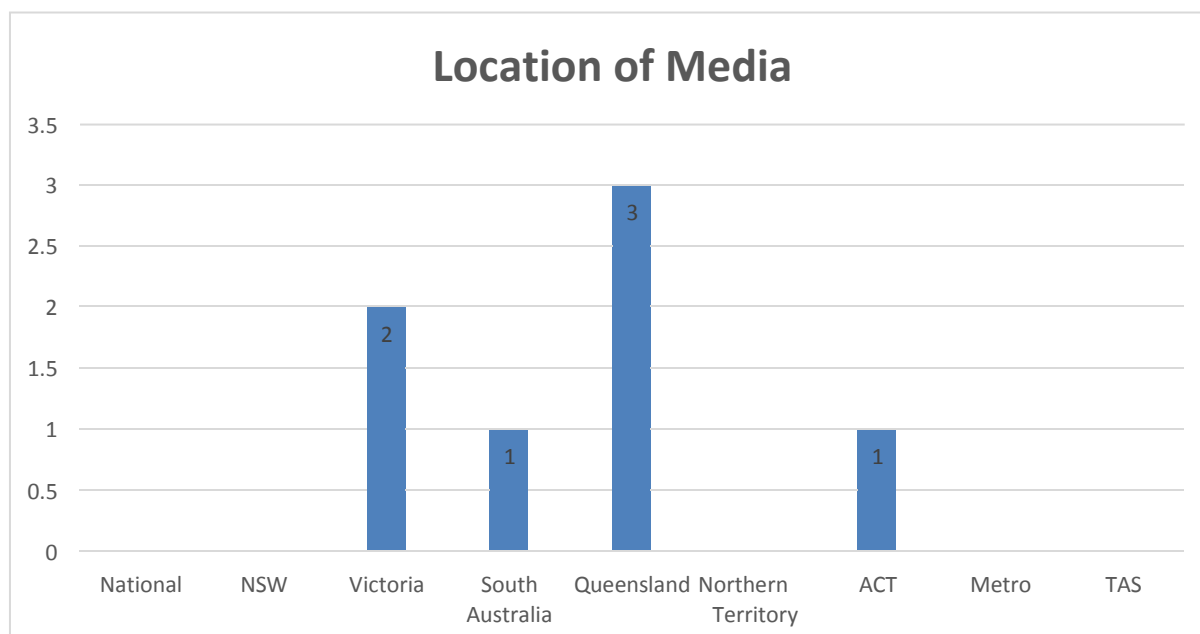
How to read the chart:

The pie chart represents the Neutral, Positive and Negative sentiment of media monitored for the week.

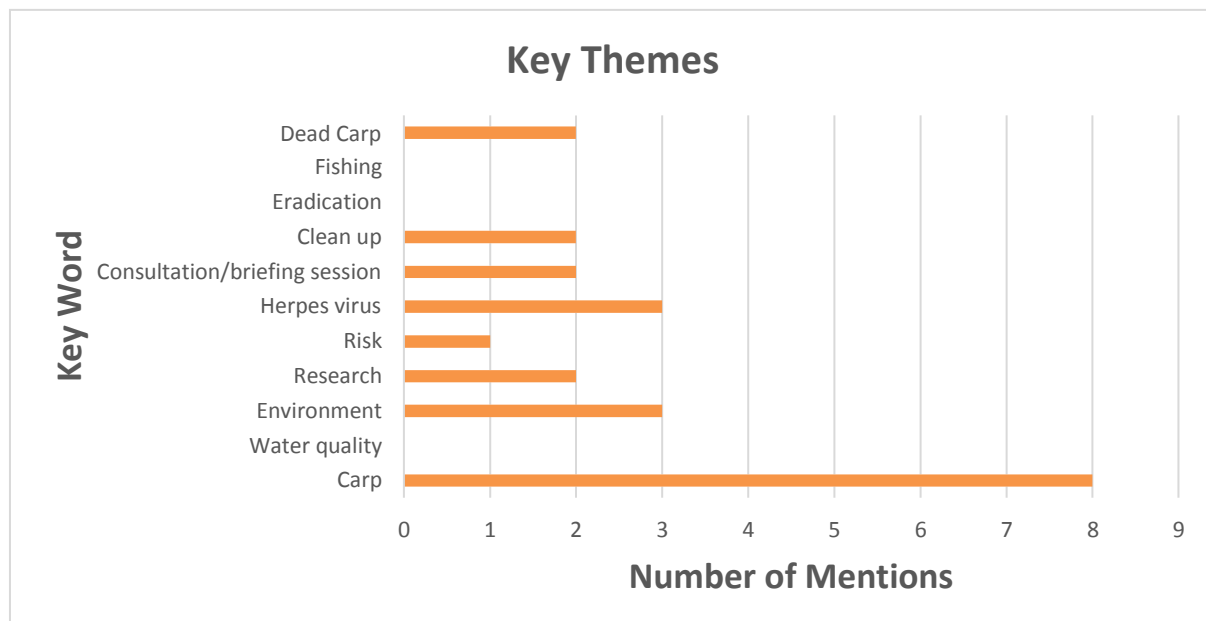
Sentiment is based on a simple points system, where 1 point is given to each article which has been deemed positive, negative or neutral.

Location of Media - week

- The below chart identifies what state the articles appear – they are broken down in to state (individual), national or metro locations.



Key themes/messages in media – this week



- 2 In the eight articles monitored this week the key themes were carp followed by herpes virus and environment, research, consultation/briefing session and clean up. Although the theme may be mentioned more than once in the article, this is only captured once to show what the key theme in the article was. An article may have more than one key theme.

PT-04 - MILESTONE PROGRESS REPORT

FRDC PROJECT NUMBER: 2016-189

Title: FRDC Communications Program 2018

MILESTONE NUMBER: 3

DATE DUE: 31 March 2018

PRINCIPAL INVESTIGATOR: Seftons

OVERALL PROJECT PROGRESS:

Milestone Status

Has this milestone been achieved (Yes/No)	Yes
Will the project be completed according to the current milestone schedule (Yes/No)	Yes

PROJECT PROGRESS AGAINST PROJECT OBJECTIVES

The communications program continues to progress well against the agreed NCCP communications and engagement strategy.

The level of proactive engagement with the public is increasing and stronger relationships are being formed with communications working group members (following new members to the group and a positive meeting in late February 2018).

There was an increased level of negative sentiment, particularly in the digital space, which required careful management and resulted in a strategic hold on proactive media relations until this negative sentiment settled.

Program milestones and outputs were all met. Specific content produced included:

- Development of talking points to publicised doubts about science program
- Development of stakeholder engagement program based on identification of stakeholders and communications channels. Included creation of a key events list for NCCP leveraging.
- Attended and facilitated Queensland consultation meetings
- Liaised with Clean Up Australia Day to identify strategic partnership opportunities
- Wrote a proactive media release to support Clean Up Australia Day (although not distributed due to short time frames for NCCP approval)
- Liaised with leads of NCCP PAG, SAG and OWG to develop content for working group pages for NCCP Bang the Table
- Managed the NCCP including liaison with Queensland regarding suitable representation
- Developed an e-newsletter story list and investigated design options to refresh look and feel. Drafted copy.
- Finalised 2018 media relations calendar based on NCCP feedback and milestone calendar
- Developed media partnership proposal for Fairfax media
- Liaised with Arthur Rylah Institute to develop a carp biomass media release

While the two proactive media releases (Biomass and Clean Up Australia) were drafted, they are yet to be distributed. The Clean Up Australia Day media release was not authorised by Clean Up Australia Day until the eve of the event, presenting a lack of time for FRDC approvals. The Biomass release is drafted and is scheduled to be distributed in April.

Repeat the following three sections for each milestone in the period being reported on:

1. ORIGINAL MILESTONE DATE AND TITLE:

31/03/2018 – Milestone 4

2. REVISED MILESTONE DATE AND TITLE:

n/a

3. PROGRESS AGAINST MILESTONE (Achieved/Not Achieved):

ACHIEVED

- Management of the Communications Working Group, in conjunction with NCCP
 - Circulation of final approved NCCP Communications and Stakeholder Engagement strategy
 - Liaison with members to encourage the supply of state/territory communications plans
 - Liaison with members to ensure they are aware of digital sentiment surrounding science doubts
 - Liaised with members regarding the development of a stakeholder engagement calendar – seeking state and territory opportunities and events for NCCP involvement
- Development of supporting communications collateral
 - NCCP requested edits made to animations, final drafts supplied.
- Development of two proactive media releases per month
 - Drafted media release for NCCP to leverage Clean Up Australia Day messaging (not distributed due to short timeframes)
 - Drafted biomass media release (to be distributed in April)
- Preparation of reactive responses to all relevant media within 24 hours
 - Provided talking points and strategic counsel to NCCP re Science response
 - Provided verbal counsel to Matt Barwick re strategic response to digital commentary
 - Daily media monitoring on issues/challenges to the NCCP and relevant information is forwarded on to NCCP team.
 - Weekly media analysis report provided with sentiment and key themes listed. Each story picked up on Isentia and BuzzWords is analysed, with about 10 questions answered for each, with data kept in a spreadsheet which is updated daily and forms the basis for the report.
 - Key themes are noted and issues management response is developed.
- Ongoing liaison with FRDC to identify and respond to threats
 - Daily phone calls and emails to FRDC/NCCP to discuss next steps and to identify issues.
 - Weekly media analysis report developed and provided
- Supply of communications materials for upload to website and social media
 - Provided reactive media statements/response to NCCP to upload to website
 - Liaised with NCCP Tom Rayner re the development of Clearer Waters video series. Provided strategic counsel on the proposed methods to launch these videos.
- Bang the Table content management
 - Liaised with PAG, SAG and OWG leads to source content for BTT working group pages
 - Continued to develop content and build page for BTT public page (to be launched in April 2018)

NOT ACHIEVED

All milestone outputs were met, however it is worth noting that the two proactive media releases prepared in March are yet to be distributed. The biomass media release is scheduled for distribution in April and the Clean Up Australia Day is being held over and will be assigned a distribution date following a face-to-face meeting with Clean Up Australia Day Committee next month.

PUBLICATIONS/PRODUCTS

- Delivery of five final animations to NCCP
- Development of partnership proposal for Fairfax Media
- Clean Up Australia Day / NCCP draft release
- Draft Biomass media release for approval
- Draft media relations calendar for NCCP review
- Delivery of five final NCCP animations to NCCP for final approval
- Weekly media analysis report 5.3.2018
- Weekly media analysis report 12.3.2018
- Weekly media analysis report 19.3.2018
- Weekly media analysis report 26.3.2018

SPECIAL CONDITIONS

N/A

INTELLECTUAL PROPERTY ISSUES ARISING:

N/A

CONTACT WITH BENEFICIARIES:

- Members of the Communications Working Group

PROGRESS AGAINST COMMUNICATION & EXTENSION PLAN:

The communications program is progressing positively with all agreed outputs met. The communications activities have so far aligned with the objectives of this project. The objectives are to inform and engage communities and stakeholders about the NCCP; widely communicate the NCCP process; provide opportunities for community input into the NCCP; support the running of effective, informative and clear public information sessions; support and enhance FRDCs reputation through developing high quality materials and managing and delivering the project with high professionalism.

VARIATIONS TO PROJECT:

N/A



SEFTONS

Delivery of five final animations to NCCP:

<https://drive.google.com/drive/folders/1S0SPaBZkZEYlt0WEPWrN3rjqPntmat7Z?usp=sharing>

National Carp Control Plan

Fairfax editorial proposal

OVERVIEW

Carp have been in Australia for more than 100 years and are now established in all states and territories, except the Northern Territory. They completely dominate freshwater fish communities and have environmental, economic and social impacts, affecting water quality, native fish and plant species, fishing and irrigation.

The National Carp Control Plan (NCCP) has been established to consider a new way of tackling this enormous problem, coordinating a large program of research and consultation to identify a safe and effective suite of measures to control carp impacts. A key focus of this process will be to explore the potential use of biocontrol measures, including the release of a virus into Australia's carp population.

An extensive community consultation process began last year, with NCCP representatives working with state government department representatives at meetings in towns and cities across the Murray Darling Basin. Consultation meetings are continuing this year and are a chance for stakeholders to learn more about what's proposed and gather feedback from attendees. A media relations program has been running in conjunction with these meetings to raise awareness about the issue and the consultation process.

As part of this ongoing community awareness campaign, we're proposing a regular column for Fairfax Media publications in the areas impacted by the carp problem.

A REGULAR COLUMN --- HOW AND WHY

The NCCP has a team of experts working to gather the scientific data and relevant information required to eventually make a decision on the virus release. It's proposed that a fortnightly column would explore a different topic each week, from the point of view of those at the coalface of this complex process. NCCP coordinator Matt Barwick remains the key spokesperson, but a different research leader from each of the NCCP research projects would compose each column.

Potential topics include:

- Numbers of carp in Australian waterways;
- The origins of carp in Australia;
- The impact on the Murray Darling Basin;
- The impact on native fish species;



- The carp virus and the overseas experience;
- Control measures rolled out in the past (including community efforts like carp musters) and why they weren't successful;
- What else is being done in conjunction with specific carp control measures to improve the health of our waterways (eg. minimising cold water pollution);
- What would happen if we did nothing about carp;
- If the carp virus is released, what happens next?

These columns would be between 400 and 800 words – dependant on publication requirements --- and editorial quality and relevance would be assured. The idea is for these columns to be highly readable, deconstructing a lot of the scientific language that can sometimes be a barrier to understanding the issues at hand.

This is an important issue affecting many people and communities, and will become an even bigger story as the date for a decision draws closer. It's proposed this column will give readers and participating media outlets a front seat to the process as it moves forward and an insight into all the issues that will help shape the final outcome.

TARGET MEDIA

The NCCP is proposing the column for the Australian Community Media arm of Fairfax Media because of its wide ownership of Australia's agriculture print media, a primary focus for raising community awareness in the NCCP.

These publications include:

- The Land (NSW);
- Queensland Country Life;
- Stock and Land (Victoria and southern NSW);
- Stock Journal (South Australia).

In NSW the column may be of interest to a number of agriculture insert publications and free weeklies that circulate through vast areas of the state on a weekly basis:

- The Country Leader (New England and North West NSW);
- Western Magazine (Central West NSW);
- The Rural (NSW Riverina);
- The Hunter Valley News.

And in Queensland, Victoria and South Australia, it would be applicable for:

- Sunraysia Daily (Mildura, Victoria);
- Wimmera-Mail Times (Horsham, Victoria);
- The Advertiser (Bendigo);
- The Border Mail (Albury/Wodonga);
- The Courier (Ballarat);
- The Standard (Warrnambool);
- Gippsland Farmer;

- The Guardian (Swan Hill);
- Murray Valley Standard (South Australia- eg. Berri, Mannum);
- Beaudesert Times (Queensland);
- Goondiwindi Argus (Queensland).

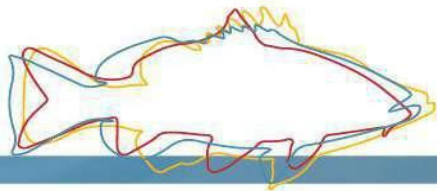
These are all areas where carp have an impact and where community consultation sessions have been held.

To conclude, the NCCP can offer:

- Access to scientific experts and academia;
- Relevant and up-to-date content for readers, and where possible local statistics and data;
- A communications team to facilitate content development;
- A suite of high-quality imagery.

NEXT ACTIONS

The next recommended step would be to put together a calendar of spokespeople and topics in line with the project timeframe, retaining the flexibility to adjust these topics according to issues or situations that may arise at any given time.



MEDIA RELEASE

2nd March 2018

The National Carp Control Plan supports Clean Up Australia Day in its efforts to conserve Australia's waterways

The National Carp Control Plan (NCCP) is supporting Clean Up Australia Day this Sunday 4th March, to remind Australians about the importance of protecting their local environment and conserving parks, bushlands, waterways and oceans.

The NCCP is exploring ways to improve the quality of Australian waterways by managing the pest species carp, which dominate freshwater fish communities in Australia, and account for over 80% of fish biomass.

Carp affect water quality, native fish, fishing and irrigation, and damage river ecosystems, according to NCCP National Coordinator Matt Barwick.

"The NCCP is committed to cleaning up the nation's waterways and Clean Up Australia Day is a fantastic opportunity to raise awareness of the need to recover the health of our aquatic ecosystems.

"Carp are one of the most destructive introduced pest species in Australia, and cause major damage to native fish populations and the quality of our waterways.

"The purpose of the NCCP is to return the waterways back to healthy and viable ecosystems to improve the water for drinking, fishing, commercial and recreational use," Barwick said.

The NCCP has been tasked through the Fisheries Research and Development Corporation (FRDC) to head a \$15 million planning process on behalf of the Australian Government to explore options to improve the quality of our waterways through the biocontrol of carp and the possible release of cyprinid herpesvirus-3 (carp virus).

For Ian Kiernan AO, Chairman and founder of Clean Up Australia, participating in Clean Up Australia Day encourages individual responsibility and community involvement in the clean-up of local environments.

Figures from Clean Up Australia Day 2017 shows pollution from waterways accounted for 17% of total waste collected through the organised clean-up sites, demonstrating freshwater water systems to be a major polluted source.

"Signing up for 2018 Clean Up Australia Day is the ideal way for every Australian to take a positive position - lots of small actions like picking up local rubbish can help reduce the 8 million tonnes of plastic entering oceans worldwide each year," said Mr Kiernan. "We can all play a part by simply caring for our local environment."

About the National Carp Control Plan

The National Carp Control Plan (NCCP) is being prepared to explore the release of the carp virus cyprinid herpesvirus-3. The Fisheries Research and Development Corporation (FRDC) is leading the \$15 million planning process on behalf of the Australian Government. At the end of 2018, the FRDC will provide the completed NCCP to the Australian Government, which will then decide whether to release the virus or not. For more information please visit: www.carp.gov.au

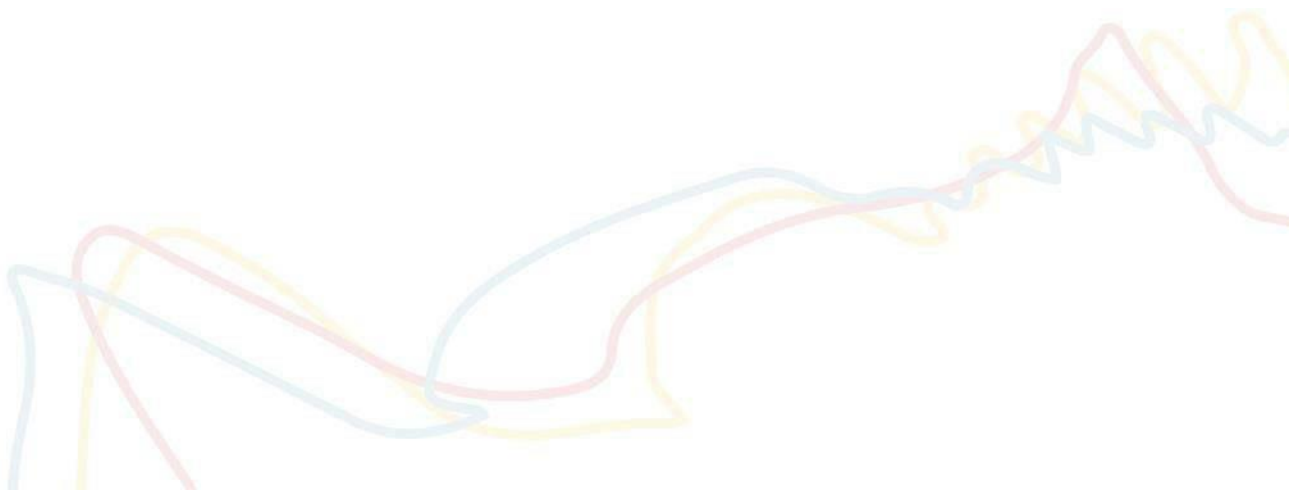
About the Clean Up Australia Day

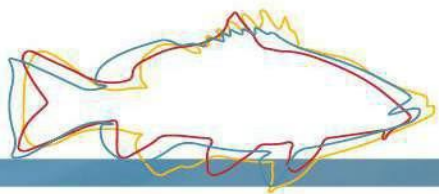
Clean Up Australia Day is being held on Sunday 4 March 2018 and is an opportunity for all Australians to take action to protect our parks, bushland, waterways and oceans.

- To register your Clean Up site go to: <http://www.cleanupaustraliaday.org.au>

ENDS**For further information please contact:**

Kerin Heatley, 0404 831 253, kerin.heatley@seftons.com.au





DRAFT MEDIA RELEASE

XX May 2018

How do you use 10 tonnes of dead carp?

Curtin University researchers are investigating options for the sustainable use of the carp biomass that could result from release of Cyprinid herpesvirus 3 (carp virus) should it be approved for use in the future under the National Carp Control Plan (NCCP).

The research project: *“Assessment of options for utilisation of virus-infected carp”*, involves laboratory-based processing trials, as well as commercial-scale trials of processes that produce usable carp-based products including fertilisers, compost, fishmeal and aquaculture feed ingredients.

Principal researcher from Curtin University, Dr Janet Howieson, says the objective is to provide the NCCP with a range of efficient, effective and appropriate uses for carp biomass, and that all methods are being carefully explored.

“The research is designed to deliver detailed analysis of the benefits and costs of various carp utilisation processes being investigated including attention to harvest strategies, transport logistics and fish quality at various locations,” says Dr Howieson, “Identifying local solutions and a community-based approach to using carp biomass is a key component of the project.”

Researchers recently completed a commercial-scale trial in partnership with Goulburn Valley Water in Victoria to separate two tonnes of dead carp into solids for local composting trials and liquids for further laboratory-based trials. Another 300kg of whole carp was sent to a nearby worm farm. This follows a similar trial in Port Lincoln, South Australia using enzyme hydrolysis to break down 10 tonnes of carp biomass into smaller peptides and amino acids – which can be used for fertiliser or as an aquaculture feed ingredient. Outcomes for the remaining bones and scales are also being investigated.

“We are considering the feasibility of using carp waste as insect feed – specifically for the Black Soldier Fly – which produces larvae that can be used as high-quality aquaculture feed. Products from the insect larvae feeding trials will then be tested in fish feeding trials to evaluate market opportunity,” adds Dr Howieson.

NCCP National Coordinator Matt Barwick says an essential part of the NCCP is to identify the best strategy for cleaning up dead carp and disposing of or utilising the resource. It is important to consider both the economical and environmental viability of options considered in the search for the best productive use for carp.

“We know there are large volumes of carp in our waterways, so working out what to do with the carp if biocontrol proceeds provide us with a measured approach to help inform NCCP recommendations and the subsequent decision-making process.” says Mr Barwick.

“One of the most frequent comments received at our community consultation sessions relate to how we can best use potential carp biomass. We are encouraging the public to engage with the

NCCP to share their thoughts and opinions in relation to the impact of carp, the proposed methods for reducing carp numbers and possible options for carp biomass use. It is a collaborative plan and one that we're keen to ensure reflects the thoughts and opinions of all stakeholders."

Other NCCP research projects underway include: completion of trials testing the susceptibility of non-target species to the carp virus, strategies for cleaning up carp if the carp virus is released and biomass estimations to determine how many carp inhabit Australia's aquatic environments.

In addition to research, a comprehensive stakeholder engagement plan is being undertaken to consult with, and seek feedback from the general public and special interest groups. Results from this consultation will be made available to the public via the NCCP website.

Do you have a question for the NCCP team or Curtin University's Janet Howieson about this important work? Simply go to: www.yoursay.carp.gov.au

Ends

About the National Carp Control Plan

The National Carp Control Plan (NCCP) is being prepared to explore the release of the carp virus Cyprinid herpesvirus-3. The Fisheries Research and Development Corporation (FRDC) is leading the \$15 million planning process on behalf of the Australian Government. At the end of 2018, the FRDC will provide the completed NCCP to the Australian Government, which will then decide whether to release the virus or not.

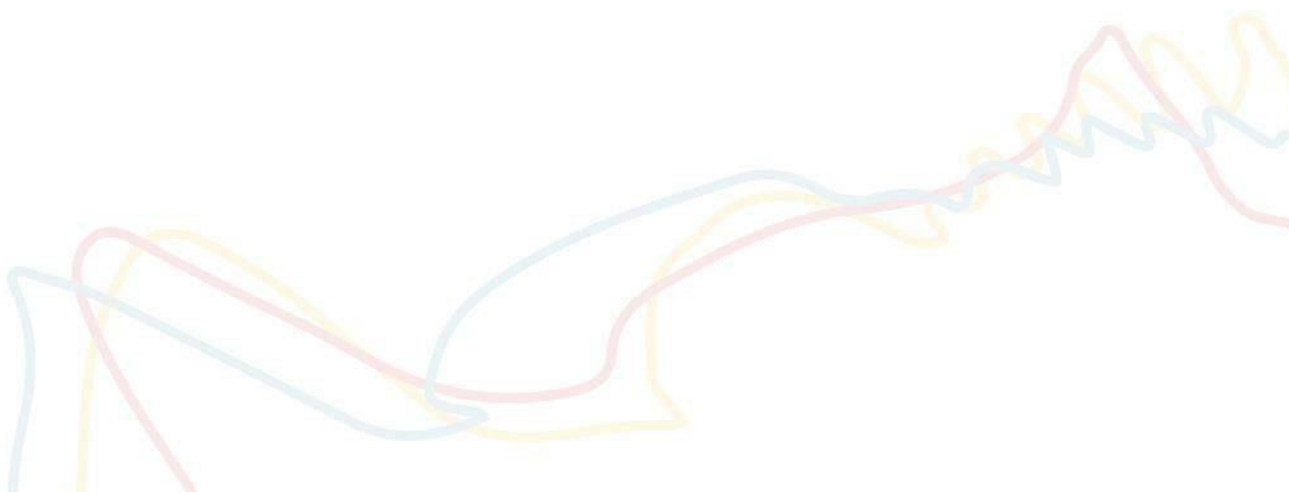
For more information visit www.carp.gov.au

Media inquiries

Katie Paynter

0417 057 243

katie.paynter@seftons.com.au



NCCP Media Schedule to 6 May 2018

The below does not take into consideration reactive and ad hoc media opportunities that are expected to arise.

NCCP 2018 Media Relations Schedule				
Timing	Angle	Tool/s	Spokesperson/s	Proposed Outlet/s
w/c 23 April OR	Carp biomass research update. How much carp is in Australia? <i>Link to Clearer Waters video release.</i>	<ul style="list-style-type: none"> Media release (National/local Bega) 	<ul style="list-style-type: none"> Matt Barwick Jarod Lyon, Arthur Rylah Institute 	<ul style="list-style-type: none"> Bega local story (carp sighting) National release
	23 April GVW Carp Utilisation Trial (TBA)	<ul style="list-style-type: none"> Media release with GVW 	<ul style="list-style-type: none"> Matt Barwick Janet Howieson GVW spokesperson 	<ul style="list-style-type: none"> Local media Victorian media
	Putting virus infected carp to good use – a sustainable solution (refer to GVW trial).	<ul style="list-style-type: none"> Media release 	<ul style="list-style-type: none"> Matt Barwick Janet Howieson 	<ul style="list-style-type: none"> National print and radio Local Shepparton media
	24 April Logan Albert Case Study Workshop	<ul style="list-style-type: none"> Media Alert/Briefing Media Release 	<ul style="list-style-type: none"> Matt Barwick Researcher (TBC) 	<ul style="list-style-type: none"> Local media Queensland media
	CSIRO QA Underway (TBA)	<ul style="list-style-type: none"> Media release 	<ul style="list-style-type: none"> Matt Barwick Ken McColl (TBA) 	<ul style="list-style-type: none"> National print and radio
w/c 30 April	Control of carp through commercial fishing. <i>Link to Clearer Waters video release.</i>	<ul style="list-style-type: none"> Media release 	<ul style="list-style-type: none"> Matt Barwick Researcher (TBA) 	<ul style="list-style-type: none"> National print and broadcast ABC Radio Fishing Shows
	Epi modelling – world first.....(TBA)	<ul style="list-style-type: none"> Media release 	<ul style="list-style-type: none"> Matt Barwick Peter Durr 	<ul style="list-style-type: none"> Science Media Centre
	Channel 9 Gippsland	<ul style="list-style-type: none"> Pitch story on NCCP Research 	<ul style="list-style-type: none"> Matt Barwick Researchers 	<ul style="list-style-type: none"> Charlotte Lam (Channel 9 Gippsland)
	2/3 May Lachlan Community Consultation	<ul style="list-style-type: none"> Media Release 	<ul style="list-style-type: none"> Matt Barwick Local representative (TBC) 	<ul style="list-style-type: none"> Local media
Sunday 6 May	Landline			

National Carp Control Plan – Weekly Media Report

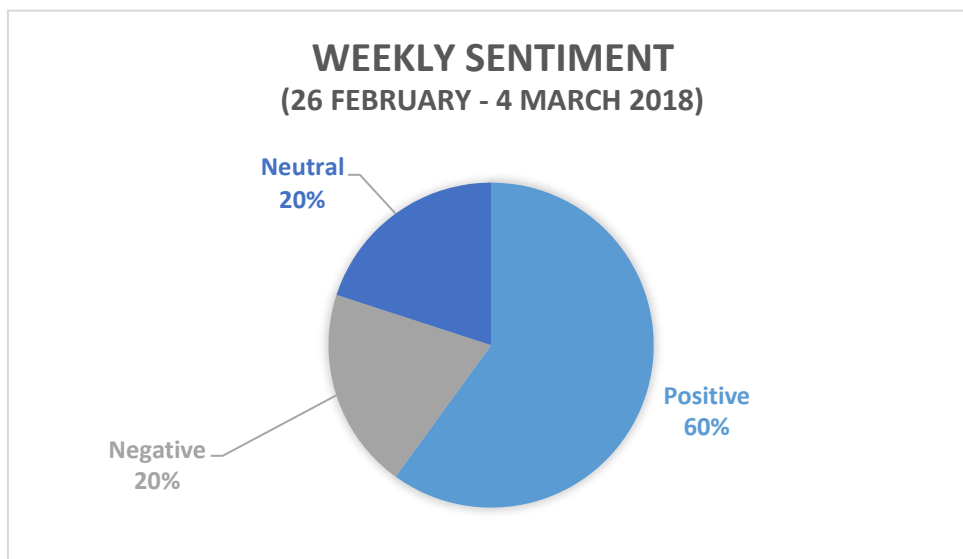
26 February – 4 March 2018

Total NCCP articles published this week: 5

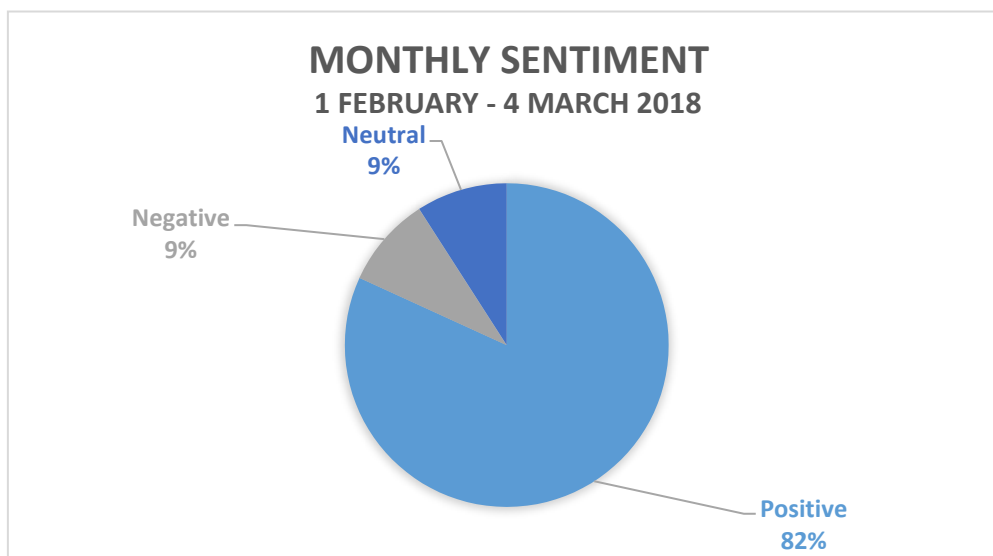
Total NCCP articles published this month: 23

The below pie chart illustrates the number of articles and the general 'sentiment' for the National Carp Control Plan, for the week and for the month. For more on how to read the chart, see below.

Number of Articles and Sentiment in media – this week



Number of Articles and Sentiment in the media – month (February)



Number of Articles and Sentiment in media – this week

- In the period 26 February – 4 March 2018, the National Carp Control Plan received coverage in five stories: one international online news site and four print articles.
- Three of these stories were positive in sentiment, one was neutral and one was negative.
- All print articles discussed the upcoming National Carp Control Plan Queensland community sessions and encouraged attendance or contact with the National Carp Control Plan.
- The online story was negative and featured on a global news site questioning the efficacy of the carp virus.
- The neutral story was non-related and the story focused on the release of fingerlings by schools in Victoria.

Number of Articles and Sentiment in media – month

- This month (February), NCCP has received coverage in 23 articles.

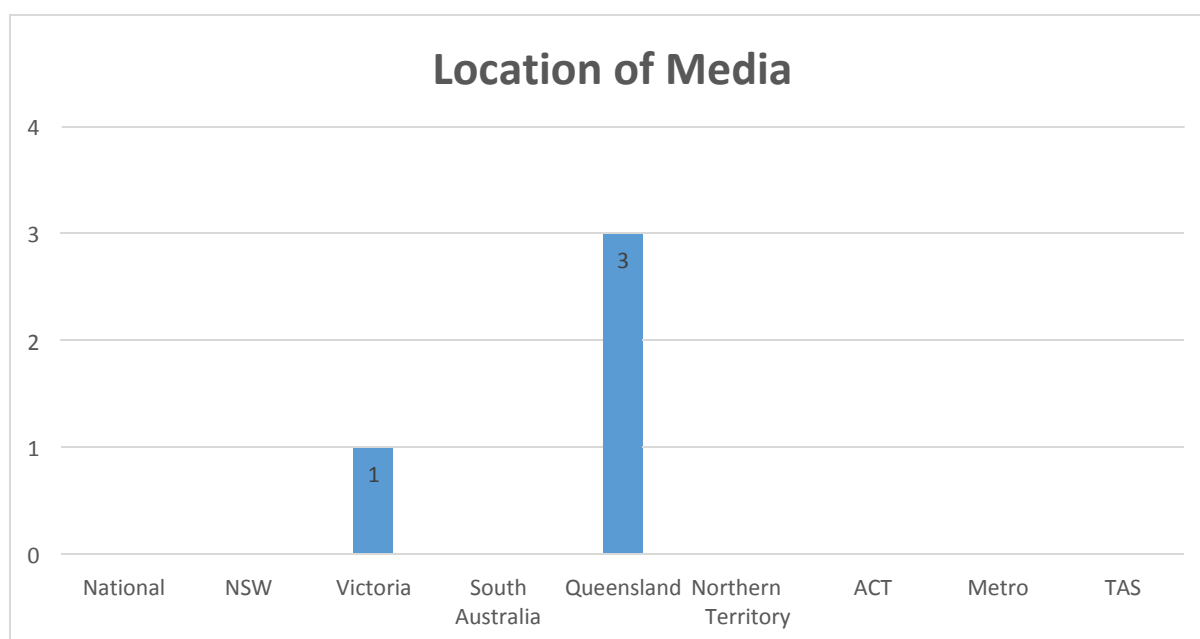
How to read the chart:

The pie chart represents the Neutral, Positive and Negative sentiment of media monitored for the week.

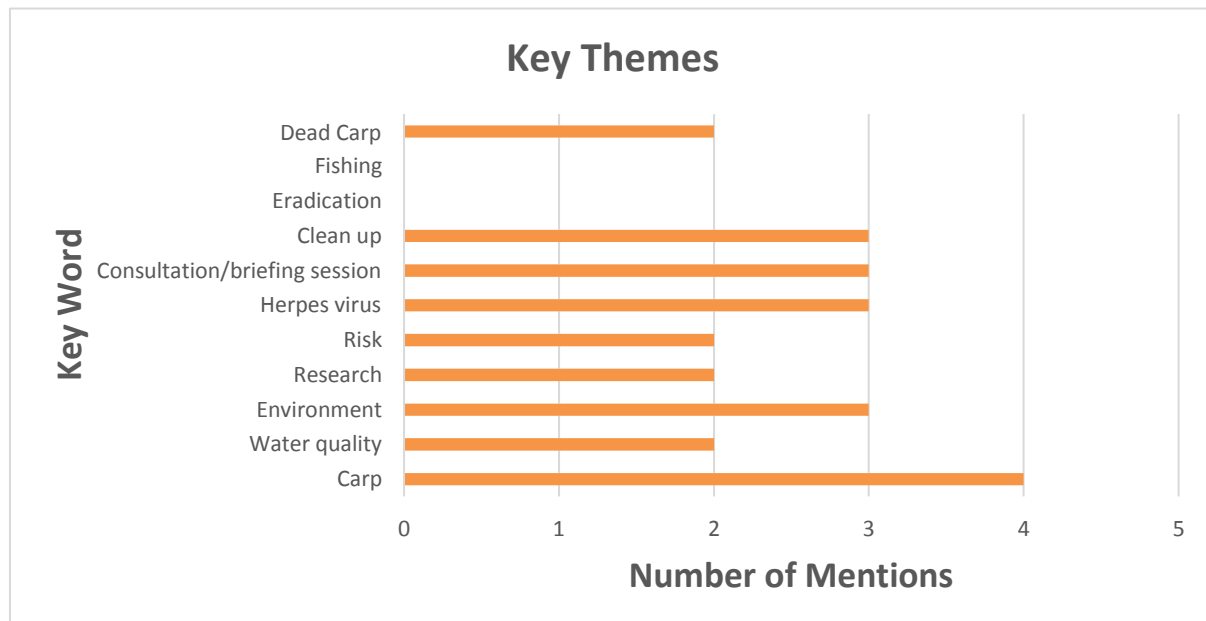
Sentiment is based on a simple points system, where 1 point is given to each article which has been deemed positive, negative or neutral.

Location of Media - week

- The below chart identifies what state the articles appear – they are broken down in to state (individual), national or metro locations.



Key themes/messages in media – this week



- 2 In the five articles monitored this week the key themes were carp followed by herpes virus, environment, consultation/briefing session and clean up. Although the theme may be mentioned more than once in the article, this is only captured once to show what the key theme in the article was. An article may have more than one key theme.

National Carp Control Plan – Weekly Media Report

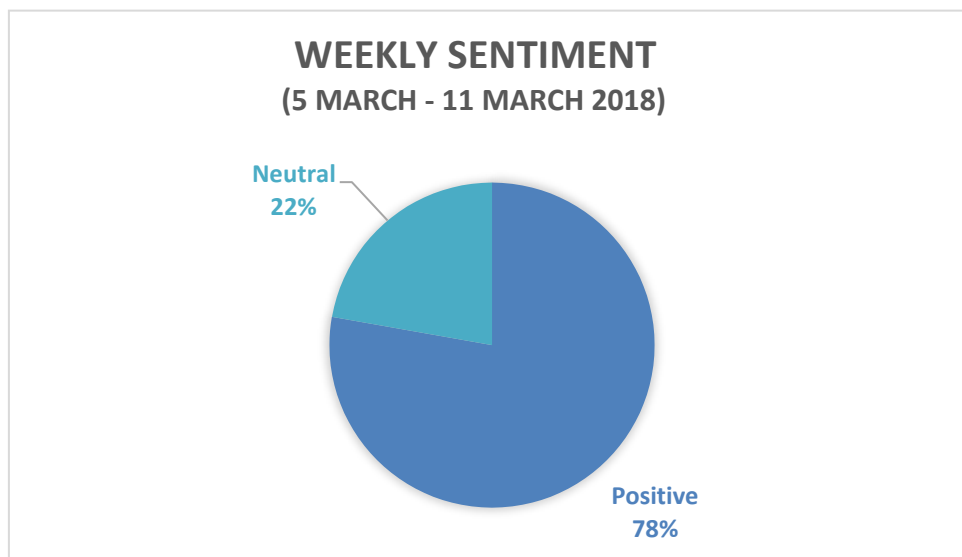
5 March –11 March 2018

Total NCCP articles published
this week: 9

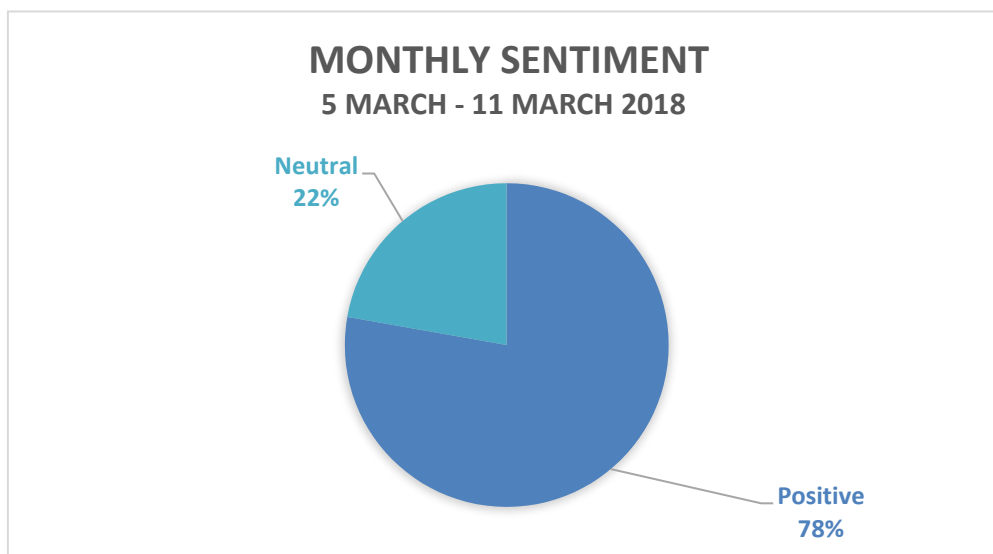
Total NCCP articles published
this month: 9

The below pie chart illustrates the number of articles and the general 'sentiment' for the National Carp Control Plan, for the week and for the month. For more on how to read the chart, see below.

Number of Articles and Sentiment in media – this week



Number of Articles and Sentiment in the media – month (March)



Number of Articles and Sentiment in media – this week

- In the period 5 March – 11 March 2018, the National Carp Control Plan received coverage in nine stories: seven print articles, one online news article and one AM radio segment
- Seven of these stories were positive in sentiment and two were neutral.
- Print articles heavily focused on the community consultations taking place around Queensland in the past weeks.
- The online story was a repeat of one of these print articles.
- The neutral stories were related to community carp musters located in NSW.

Number of Articles and Sentiment in media – month

- This month (March), NCCP has received coverage in 9 articles.

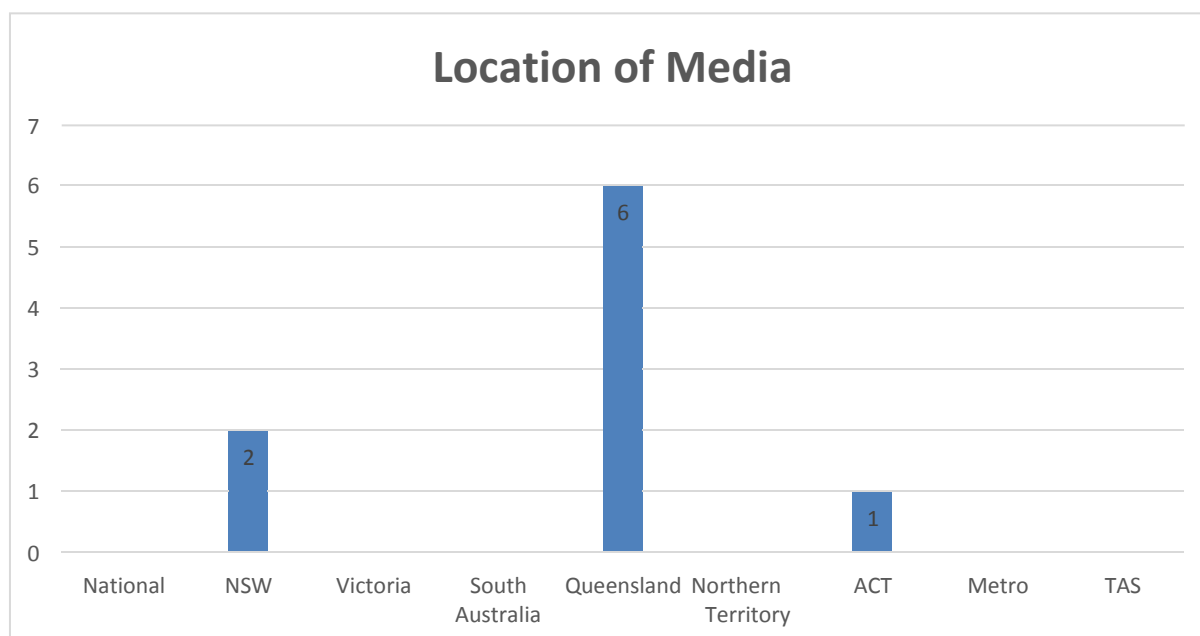
How to read the chart:

The pie chart represents the Neutral, Positive and Negative sentiment of media monitored for the week.

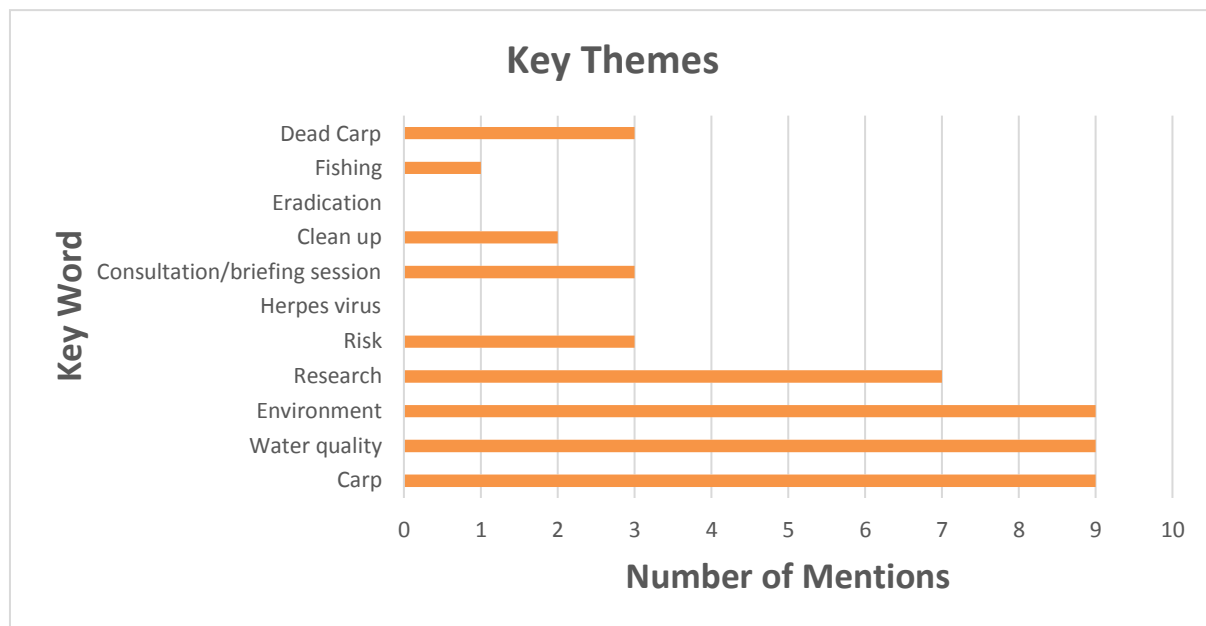
Sentiment is based on a simple points system, where 1 point is given to each article which has been deemed positive, negative or neutral.

Location of Media - week

- The below chart identifies what state the articles appear – they are broken down in to state (individual), national or metro locations.



Key themes/messages in media – this week



- 2 In the nine articles monitored this week the key themes were carp, environment and water quality followed by research. Although the theme may be mentioned more than once in the article, this is only captured once to show what the key theme in the article was. An article may have more than one key theme.

National Carp Control Plan – Weekly Media Report

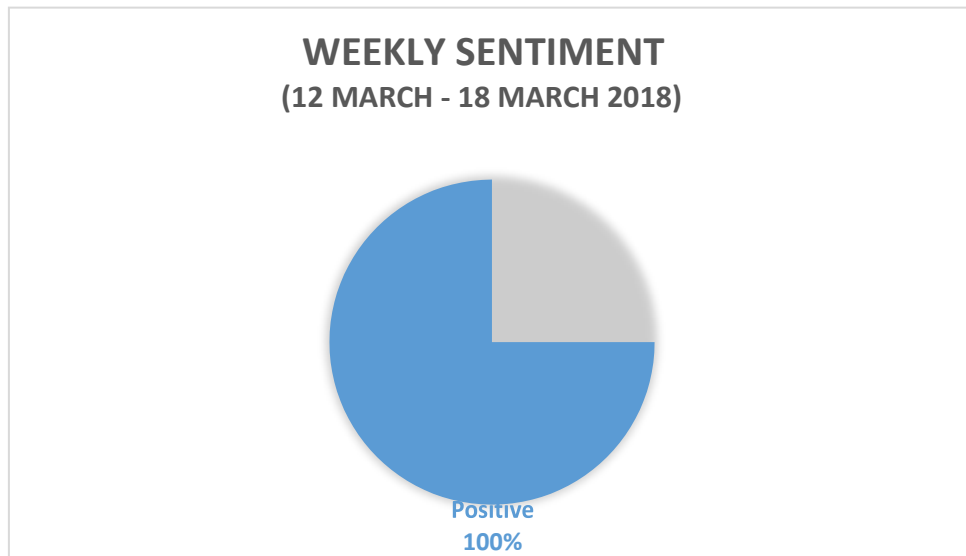
12 March –18 March 2018

Total NCCP articles published this week: 5

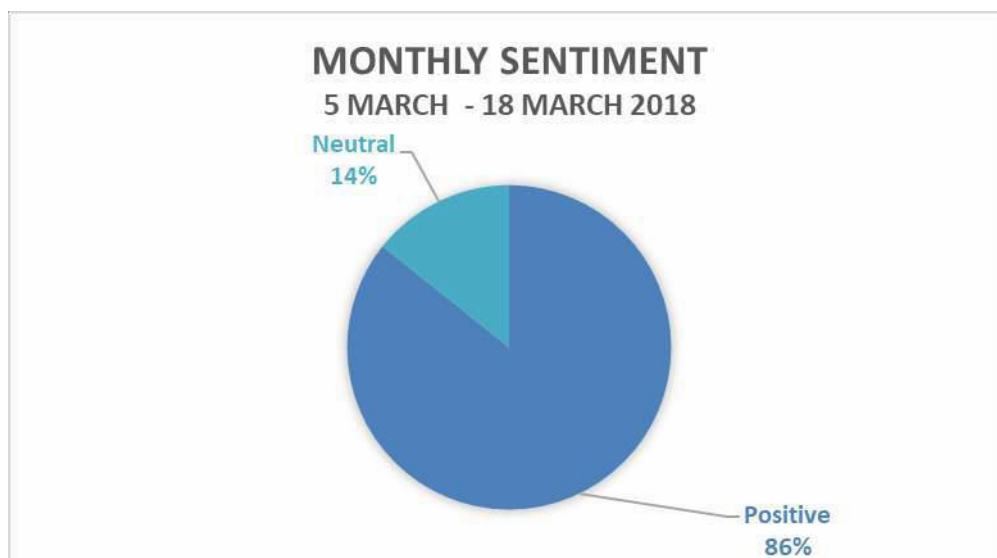
Total NCCP articles published this month: 14

The below pie chart illustrates the number of articles and the general 'sentiment' for the National Carp Control Plan, for the week and for the month. For more on how to read the chart, see below.

Number of Articles and Sentiment in media – this week



Number of Articles and Sentiment in the media – month (March)



Number of Articles and Sentiment in media – this week

- In the period 12 March – 18 March 2018, the National Carp Control Plan received coverage in five stories: all print articles.
- ❓ All of these stories were positive in sentiment.
- ❓ Three print articles heavily focused on the community consultations taking place around Queensland in the past weeks whilst the Victorian print articles discuss the issues with carp, the NCCP plan and current research underway.

Number of Articles and Sentiment in media – month

- ❓ This month (March), NCCP has received coverage in 14 articles.

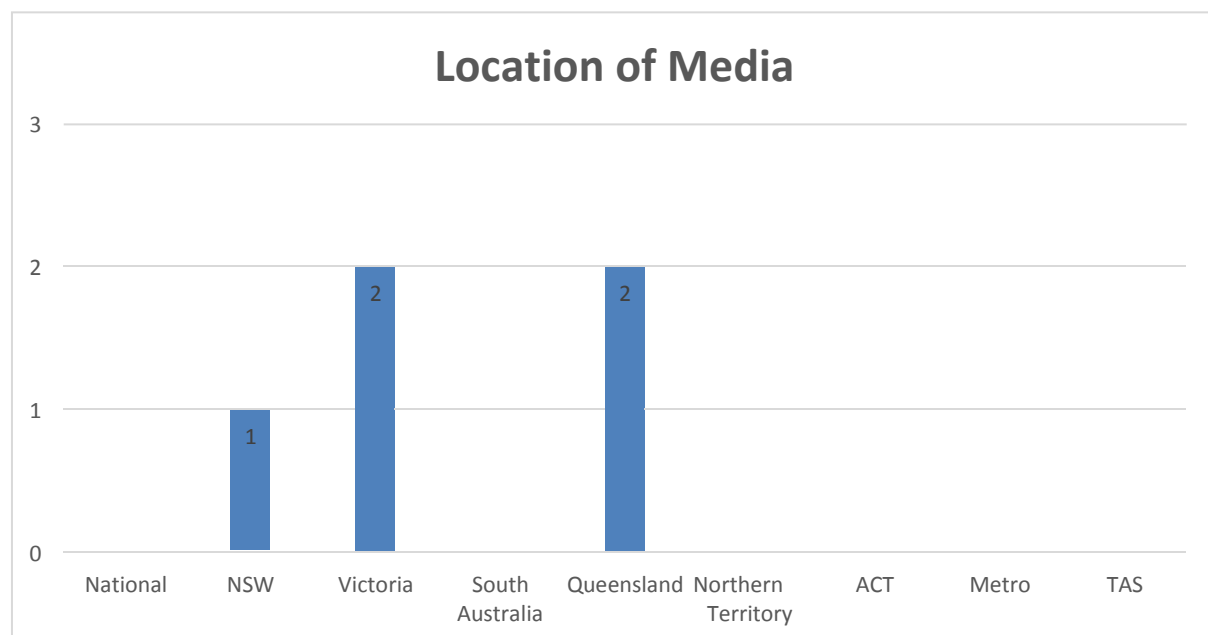
How to read the chart:

The pie chart represents the Neutral, Positive and Negative sentiment of media monitored for the week.

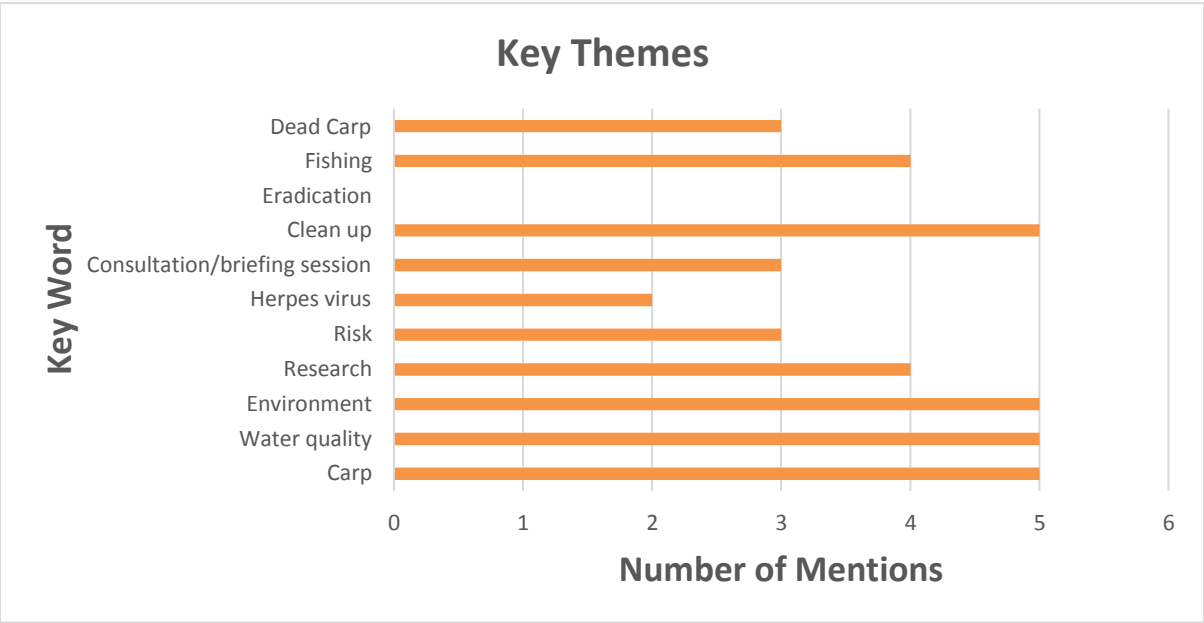
Sentiment is based on a simple points system, where 1 point is given to each article which has been deemed positive, negative or neutral.

Location of Media - week

- The below chart identifies what state the articles appear – they are broken down in to state (individual), national or metro locations.



Key themes/messages in media – this week



2 In the five articles monitored this week the key themes were carp, environment and water quality and clean up. Although the theme may be mentioned more than once in the article, this is only captured once to show what the key theme in the article was. An article may have more than one key theme.

National Carp Control Plan – Weekly Media Report

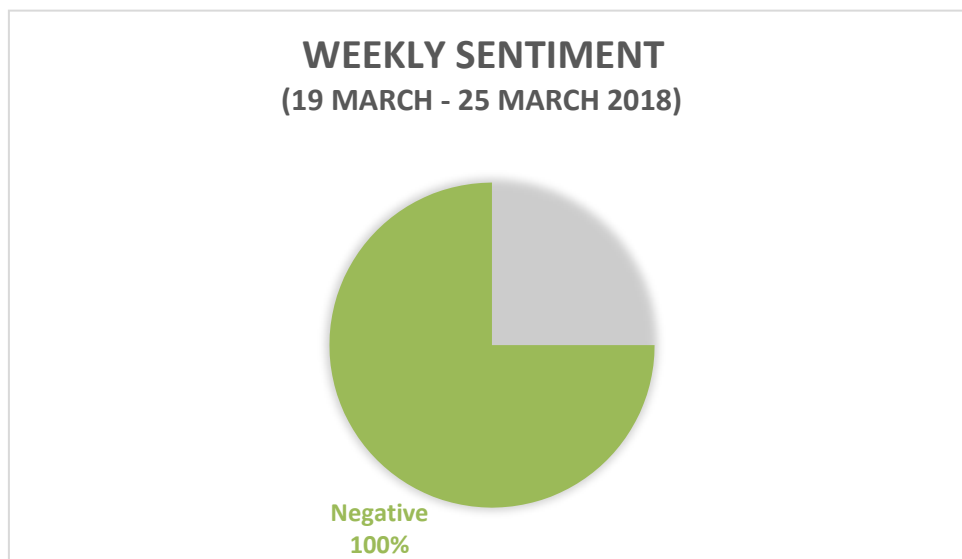
19 March –25 March 2018

Total NCCP articles published this week: 2

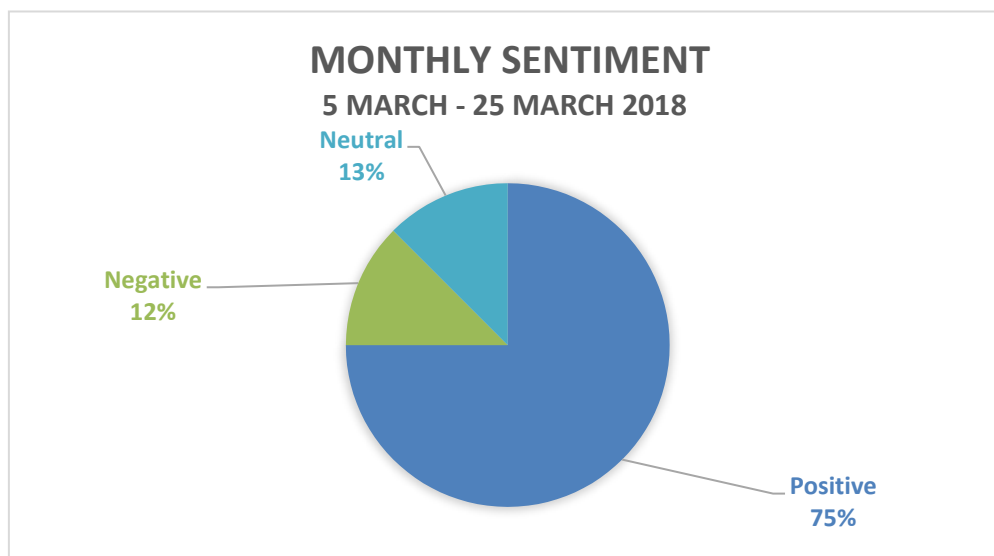
Total NCCP articles published this month: 16

The below pie chart illustrates the number of articles and the general 'sentiment' for the National Carp Control Plan, for the week and for the month. For more on how to read the chart, see below.

Number of Articles and Sentiment in media – this week



Number of Articles and Sentiment in the media – month (March)



Number of Articles and Sentiment in media – this week

- In the period 19 March – 25 March 2018, the National Carp Control Plan received coverage in two stories: one print and one AM radio piece.
- ❓ Both of these stories were negative in sentiment.
- ❓ Both print articles heavily focused on the clean up process, particularly in relation to the concerns of the Mid Murray Council in South Australia.

Number of Articles and Sentiment in media – month

- ❓ This month (March), NCCP has received coverage in 16 articles.

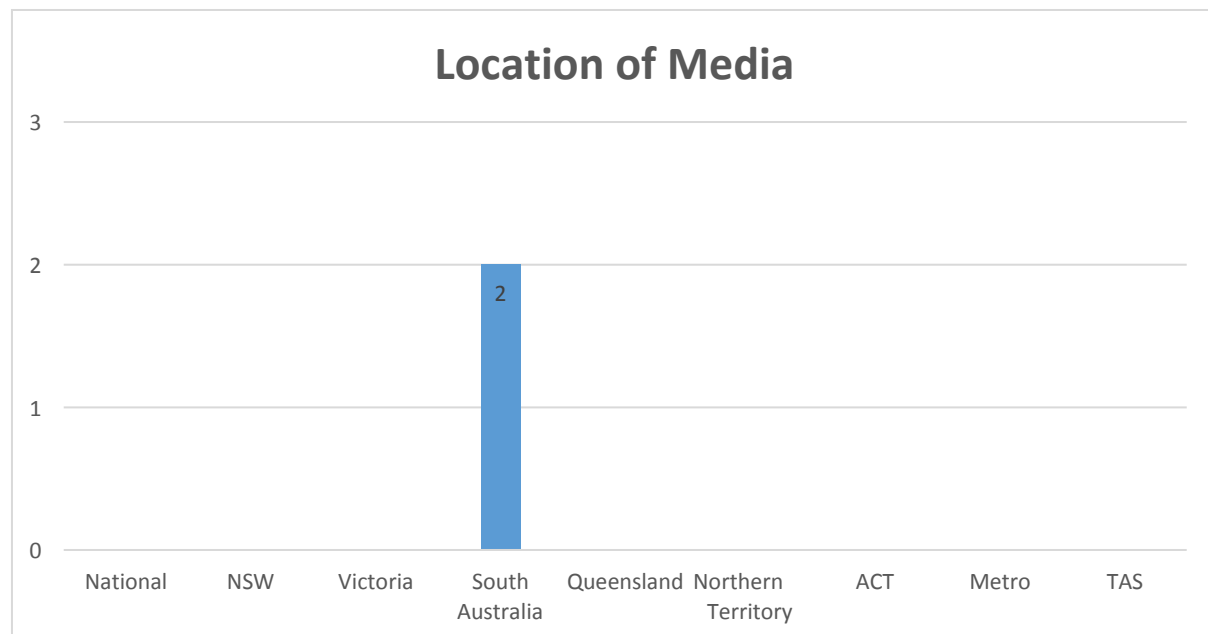
How to read the chart:

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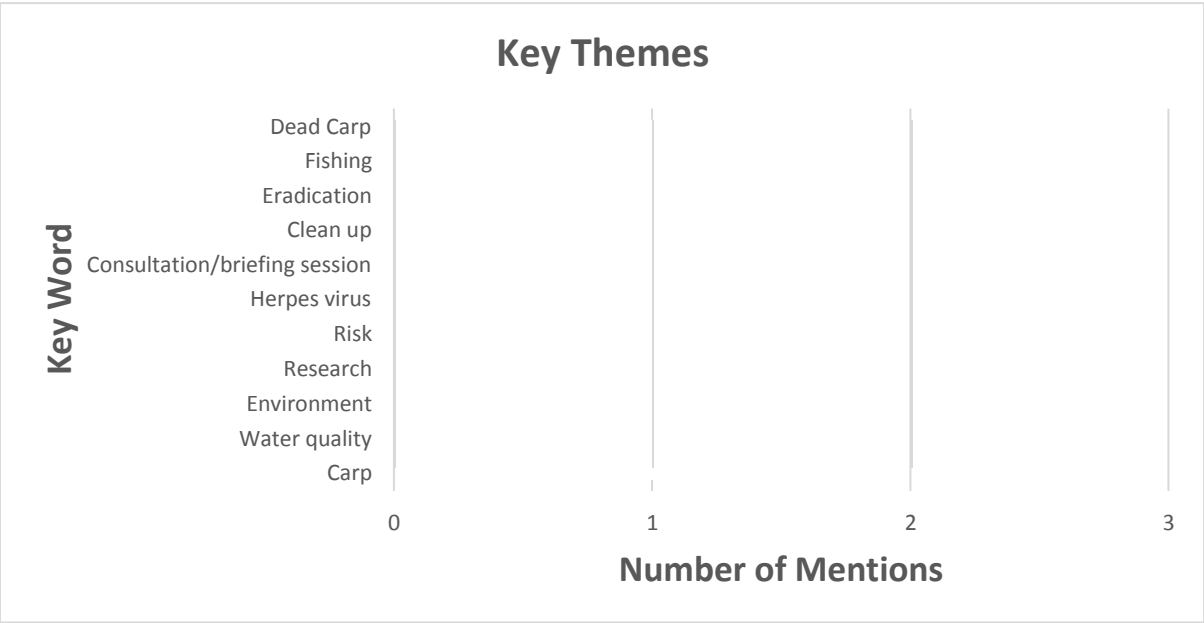
Sentiment is based on a simple points system, where 1 point is given to each article which has been deemed positive, negative or neutral.

Location of Media - week

- The below chart identifies what state the articles appear – they are broken down in to state (individual), national or metro locations.



Key themes/messages in media – this week



2 In the two articles monitored this week the key themes were dead carp, environment, consultation sessions and clean up. Although the theme may be mentioned more than once in the article, this is only captured once to show what the key theme in the article was. An article may have more than one key theme.

PT-04 - MILESTONE PROGRESS REPORT



FRDC PROJECT NUMBER: 2016-164

Title: FRDC Communications Program 2018

MILESTONE NUMBER: 5

DATE DUE: 31 April 2018

PRINCIPAL INVESTIGATOR: Seftons

OVERALL PROJECT PROGRESS:

Milestone Status

Has this milestone been achieved (Yes/No)	No
Will the project be completed according to the current milestone schedule (Yes/No)	Yes

PROJECT PROGRESS AGAINST PROJECT OBJECTIVES

The communications program is intensifying with significant outputs in the media relations and stakeholder engagement space.

The stakeholder engagement platform www.yoursay.carp.gov.au is also nearing completion providing a dedicated platform for the public and communities to engage with the NCCP.

Program milestones and outputs were all met. Specific content produced included:

- A considerable number of meetings scheduled for NCCP and key stakeholder groups including Local Government, Recreational Fishers, Australian Veterinarian Association, Australian Local Government Association, NSW Local Government Water Conference to name a few
- Proactive media relations with the development of a number of media releases including Albert-Logan trial, carp utilisation media release, tailoring of biomass release for Bega media, Letter to the Editor re Terry Logan and Epi modelling release.
- Strategic media and stakeholder counsel including the development of a media relations calendar for the NCCP, key messages for Landline filming, FAQs for website, drafting of letter for Lincolnshire Fish Health Laboratories
- Finalisation of the Bang the Table site with final content being developed for public site
- Support to NCCP around the finalisation and launch strategy for Clearer Waters Videos
- Management of the Communications Working Group including the development of a series of papers reporting on stakeholder engagement, media relations, contract outputs, risk management and digital media. Confirmed and invited members to participate in an interim telemeeting prior to face-to-face PI Workshop in May.

Repeat the following three sections for each milestone in the period being reported on:

1. ORIGINAL MILESTONE DATE AND TITLE:

30/04/2018 – Milestone 5

2. REVISED MILESTONE DATE AND TITLE:

3. PROGRESS AGAINST MILESTONE (Achieved/Not Achieved):

ACHIEVED

- Management of the Communications Working Group, in conjunction with NCCP
 - Development of CWG papers including Stakeholder Engagement Strategy Update, Media Relations Calendar Update, Contract Outputs Update, Digital Media recommendations, Risk Analysis Update
 - Set meeting for interim telemeeting ahead of PI Workshop
 - Invited CWG members to telemeeting to brief on immediate communications challenges and opportunities
 - Liaised with CWG on communications program via BTT platform.
 - Worked with NCCP to coordinate PI / CWG Meeting for Adelaide
- Development of supporting communications collateral
 - Worked closely with NCCP to review and finalise the Clearer Waters video series
 - Liaised with NCCP on need for Council brochures ahead of stakeholder meeting request with Local Councils in MDA
 - Advised NCCP to hold on printing of new collateral until project timelines were determined
- Development of two proactive media items per month
 - Drafting of carp utilisation media release
 - Drafting of epi modelling media release
 - Drafting of Albert Logan media release
 - Drafted localised biomass release for Bega media
 - Liaised with Goulburn Valley Water regarding media potential for Janet Howieson trial
 - Liaised with Fairfax media for partnership meeting and opportunities
- Preparation of reactive responses to all relevant media within 24 hours
 - Provided talking points and FAQs to Matt Barwick ahead of Landline interview
 - Provided talking points and FAQs to Matt Barwick ahead of Fairfax interview
 - Drafted letter of response to Lincolnshire Fish Health Laboratories UK
 - Drafted letter to the editor in response to Terry Logan letter
 - Telemeeting with Craig Ingram to explore opportunities for Channel 9 Gippsland filming
 - Responded to media request from 2CCC Canberra re Kambah Pools activity
 - Developed new FAQs for website as identified
 - Daily media monitoring on issues/challenges to the NCCP and relevant information is forwarded on to NCCP team.
 - Weekly media analysis report provided with sentiment and key themes listed. Each story picked up on Isentia and BuzzWords is analysed, with about 10 questions answered for each, with data kept in a spreadsheet which is updated daily and forms the basis for the report.
 - Key themes are noted and issues management response is developed.
- Undertaken proactive engagement with key stakeholders
 - Strategic counsel and planning ahead of NCCP meeting with Koi Society
 - Planning underway for Lachlan community workshop
 - Liaising with LGNSW regarding NCCP presentation at upcoming conference, prepare proposal
 - Liaised with MDAs Emma Bradbury regarding upcoming MDA Regional meeting opportunities
 - Coordinated and provided NCCP updates for Border Region Organisation of Councils, Region 5 Riverland, Region 2 Moira Shire Council, Environment & Waterways Alliance NSW, Namoi Group of Councils, RAMROC opportunities.
 - Liaised with Australian Veterinarians Association re date for upcoming meeting
 - Liaised with Australian Recreational Fishers regarding partnership opportunities for Gone Fishing Day
 - Delivered newsletter copy to MDA for upcoming newsletter
 - Liaised with MDA re NCCP support for ALGA conference
 - Developed stakeholder engagement schedule
 - Summarised ANU paper re virus risk to humans and shared with Ian McDonald at Invasive Pests

- Ongoing liaison with FRDC to identify and respond to threats
 - Provided strategic counsel to NCCP regarding commercial fishing video and correlation against commercial research findings
 - Responded as required to carp inbox enquiries from members of the public (Jamie Bishop and Adrian Falconer)
 - Updating NCCP risk register and sharing with CWG for input
 - Daily phone calls and emails to FRDC/NCCP to discuss next steps and to identify issues.
 - Weekly media analysis report developed and provided
- Supply of communications materials for upload to website and social media
 - Provided reactive media statements/response to NCCP to upload to website
 - Updated FAQs for NCCP to upload to website
 - Liaised with NCCP Tom Rayner re the development of Clearer Waters video series. Provided strategic counsel on the proposed methods to launch these videos.
- Produce one newsletter per month
 - Supplied newsletter copy to MDA for their newsletter.
- Consultation Reporting
 - Completed data entry for consultation workshops
 - Completed data analysis for consultation workshops
 - Commenced writing report for consultation workshops
- Bang the Table content management
 - Finalised copy for BTT public site
 - Uploaded materials to CWG for review / insights
 - Worked to provide PAG members with access to CWG page

NOT ACHIEVED

The development of the newsletter will be delivered as part of Milestone 6. Note, NCCP newsletter copy was delivered to MDA for inclusion in their newsletter.

PUBLICATIONS/PRODUCTS

- Carp utilisation media release
- Epi modelling media release
- Albert Logan media release
- Lincolnshire Fish Laboratories Response
- Briefing notes for Matt Barwick ahead of Landline Interview
- Stakeholder Engagement Schedule & Plans for CWG meeting
- Updated FAQs for NCCP website
- Media Relations Calendar for CWG meeting
- Comms Risk Register for CWG meeting
- CWG meeting agenda for telemeeting
- Carp Inbox Adrian Falconer email
- Carp Inbox Jamie Bishop email
- Weekly media analysis report 2.4.2018
- Weekly media analysis report 9.4.2018
- Weekly media analysis report 16.4.2018
- Weekly media analysis report 23.4.2018

SPECIAL CONDITIONS

N/A

INTELLECTUAL PROPERTY ISSUES ARISING:

N/A

CONTACT WITH BENEFICIARIES:

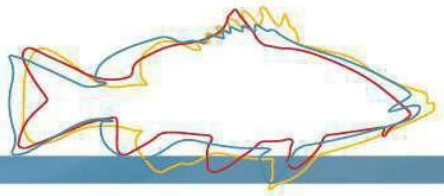
- Members of the Communications Working Group
- Murray Darling Association and its member councils
- South Australian Government
- Central West Local Land Services
- Australian Local Government Association
- Australian Recreational Fishers Association
- LGNSW
- VFA's Craig Ingram
- Goulburn Valley Water
- Curtin University
- Australian Veterinarian Association
- Clean Up Australia Day Committee
- Water NSW's Joe Pera

PROGRESS AGAINST COMMUNICATION & EXTENSION PLAN:

The communications program is progressing positively with all agreed outputs to be met by end of the project period. The communications activities have so far aligned with the objectives of this project. The objectives are to inform and engage communities and stakeholders about the NCCP; widely communicate the NCCP process; provide opportunities for community input into the NCCP; support the running of effective, informative and clear public information sessions (when required); support and enhance FRDCs reputation through developing high-quality materials and managing and delivering the project with high professionalism.

VARIATIONS TO PROJECT:

N/A



DRAFT MEDIA RELEASE

XX May 2018

How do you use 10 tonnes of dead carp?

Curtin University researchers are investigating options for the sustainable use of the carp biomass that could result from the potential release of Cyprinid herpesvirus 3 (carp virus), under the National Carp Control Plan (NCCP).

The research project, *Assessment of options for utilisation of virus-infected carp*, involves laboratory-based processing trials, as well as commercial-scale trials of processes that produce usable carp-based products including fertilisers, compost, fishmeal and aquaculture feed ingredients.

Lead researcher Dr Janet Howieson, from the School of Molecular and Life Sciences at Curtin University, said the objective is to provide the NCCP with a range of efficient, effective and appropriate uses for carp biomass, and that all methods are being carefully explored.

“The research is designed to deliver detailed cost-benefits analyses of the various carp utilisation processes being investigated including attention to harvest strategies, transport logistics and fish quality at various locations,” Dr Howieson said.

“Identifying local solutions and a community based approach to using carp biomass is a key component of the project.”

Researchers recently completed a commercial-scale trial in partnership with Goulburn Valley Water in Victoria to separate two tonnes of dead carp into solids for local composting trials and liquids for further laboratory-based digestion trials looking at biogas production. Another 300kg of whole carp was sent to a nearby worm farm.

This followed a similar trial in Port Lincoln, South Australia using enzyme hydrolysis to break down 10 tonnes of carp biomass into smaller peptides and amino acids, which can be used for organic fertiliser or as an aquaculture or animal feed ingredient. Outcomes for the remaining bones and scales are also being investigated.

“We are considering the feasibility of using carp waste as insect feed, specifically for the Black Soldier Fly, which produces larvae that can be used as high quality aquaculture feed. Products from the insect larvae feeding trials will then be tested in fish feeding trials to evaluate market opportunity,” Dr Howieson said.

A large scale composting trial is also being undertaken with carp biomass with different composting methods and substrates being tested with monitoring and evaluation being conducted throughout the trial.

NCCP National Coordinator Matt Barwick says identifying economically viable and productive uses for carp is an essential part of the NCCP's clean-up strategy.

"We know there are large volumes of carp in our waterways, so working out what to do with the carp biomass if biocontrol proceeds provide us with a measured approach to help inform NCCP recommendations and the subsequent decision-making process," Mr Barwick said.

"One of the most frequent comments received at our community consultation sessions relate to how we can best use potential carp biomass. We are encouraging the public to engage with the NCCP to share their thoughts and opinions in relation to the impact of carp, the proposed methods for reducing carp numbers and possible options for carp biomass use. It is a collaborative plan and one that we're keen to ensure reflects the thoughts and opinions of all stakeholders."

Other NCCP research projects underway include completion of trials testing the susceptibility of non-target species to the carp virus, strategies for cleaning up carp if the carp virus is released and biomass estimations to determine how many carp inhabit Australia's aquatic environments.

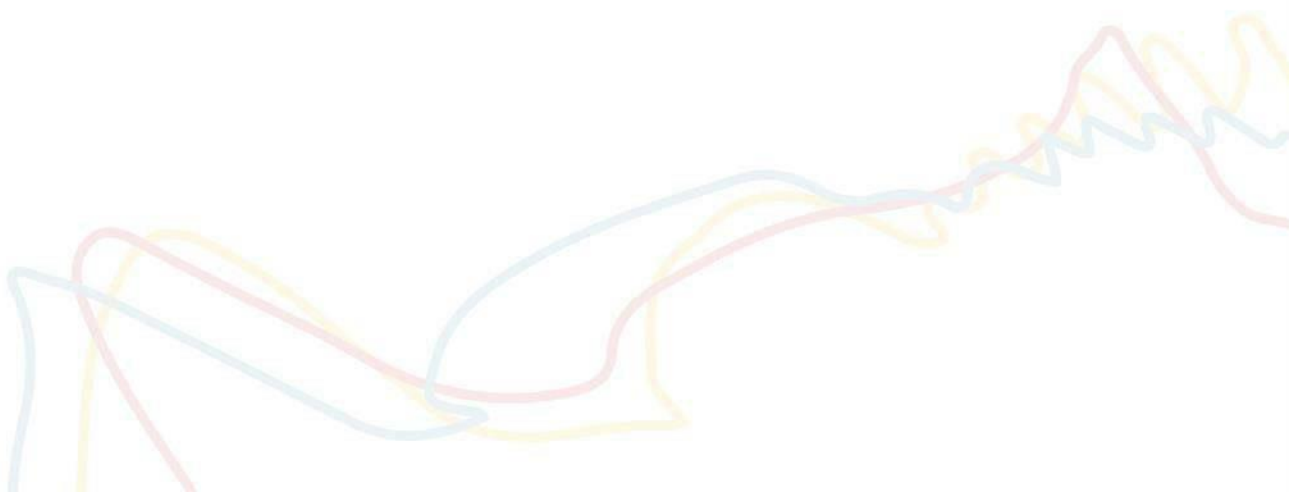
In addition to research, a comprehensive stakeholder engagement plan is being undertaken to consult with, and seek feedback from the general public and special interest groups. Results from this consultation will be made available to the public via the NCCP website.

Do you have a question for the NCCP team or Curtin University's Janet Howieson about this important work? Simply go to: www.yoursay.carp.gov.au

Ends

About the National Carp Control Plan

The National Carp Control Plan (NCCP) is being prepared to explore the release of the carp virus Cyprinid herpesvirus-3. The Fisheries Research and Development Corporation (FRDC) is leading the \$15 million planning process on behalf of the Australian Government. At the end of 2018, the FRDC will provide the completed NCCP to the Australian Government, which will then decide whether to release the virus or not.



For more information visit www.carp.gov.au

Media inquiries Katie Paynter

0417 057 243

katie.paynter@seftons.com.au

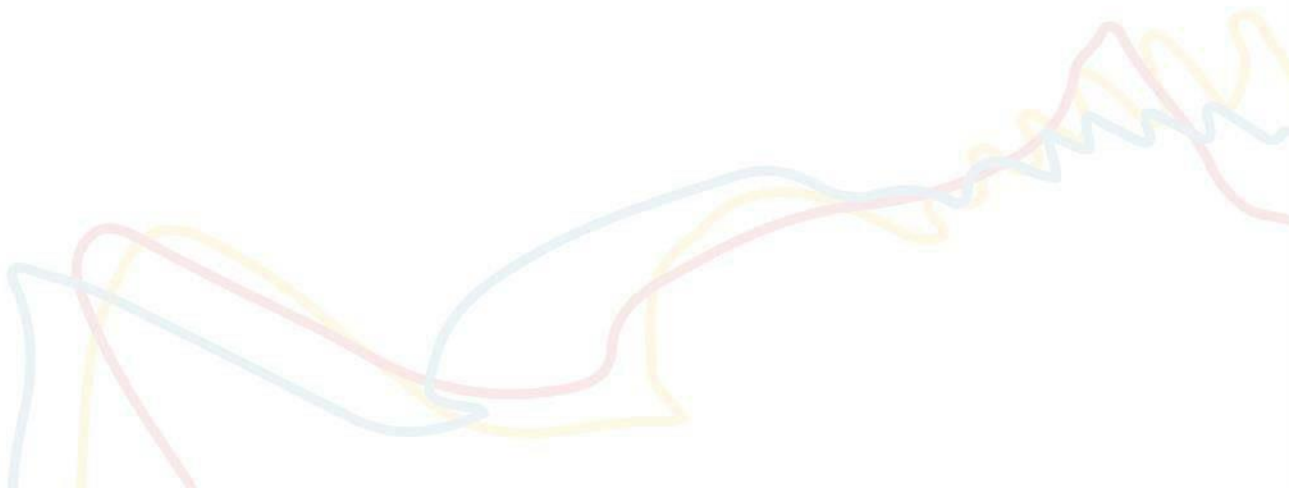
Lucien Wilkinson, Media Consultant, Curtin University

Tel: (08) 9266 9185 Mobile: 0401 103 683

Email: lucien.wilkinson@curtin.edu.au

Web: <http://news.curtin.edu.au/media-centre/>

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MEDIA RELEASE

XX May 2018

World-class computer simulation informs carp virus release strategy

Complex computer modelling, the first of its kind in Australia, will be used to predict the effect of the Cyprinid herpesvirus-3 on carp by simulating how the virus spreads from one fish to another.

The National Carp Control Plan (NCCP) has brought together world-class experts on rivers and waterways, fish biology, virology and disease spread (epidemiology) and computer programming to assess the factors that influence virus transmission and identify ways to enhance spread through the carp population.

CSIRO veterinary epidemiologist Peter Durr is leading the research project: *Development of hydrological, ecological, and epidemiological modelling to inform a CyHV-3 release strategy for the biological control of carp in the Murray Darling Basin.*

With kill rates from the carp virus strongly influenced by multiple factors including water temperature, virus concentration and fish schooling behavior, NCCP National Co-ordinator Matt Barwick said that this epidemiology modelling project was one of the most complex ever attempted.

“We have a lot of knowledge about Cyprinid herpesvirus-3. We know that, while the virus can cause disease in carp at water temperatures between 16C and 26C, the optimal window for infection is 20C to 24C. Transmission of the virus is also at its highest when carp are densely populated. By assessing these factors, we can identify seasonal windows to maximise virus-induced carp kills,” says Mr Barwick.

“The challenge is that no epidemiology model in existence considers rivers and how they behave, parameters like water temperature and flow, a target species and how it occupies a complex environment, a biocontrol agent and its movement through populations and, most importantly, the ecological outcome,” Matt Barwick adds, “So the research team combined four or five independent modelling processes to create a super-model, using incredible amounts of data, to predict the success of the virus before it is released.”

CSIRO’s Peter Durr says the model will have several uses including when and where to release the virus to manage the carp removal and reduce impacts on water quality. He also adds that the research team also made a break-through discovery during the complex modelling exercise.

“In the process of making the critical dimensions of the virus work optimally, we understood that water temperature was critical, but soon discovered that Australia did not have a water temperature data layer. This means you can’t easily identify the water temperature of individual rivers or streams,” Mr Durr says, “Through the course of this project, we identified that air temperature and flow data can be used to determine water

temperature – not just at the surface, but down through the water column. So as a result of this project, Australia now has a national water temperature data layer.”

Epidemiological modelling is just one of many research projects currently underway. Leading social scientists, biologists, economists, risk assessment specialists and water quality experts are investigating the challenges, risks, costs, opportunities and potential benefits of carp biocontrol.

Other NCCP research projects underway include: completion of trials testing the susceptibility of non-target species to the carp virus, strategies for cleaning up carp if the carp virus is released and biomass estimations to determine how many carp inhabit Australia’s aquatic environments.

In addition to research, a comprehensive stakeholder engagement plan is being undertaken to consult with, and seek feedback from the general public and special interest groups. Results from this consultation will be made available to the public via the NCCP website.

Ends

About the National Carp Control Plan

The National Carp Control Plan (NCCP) is being prepared to explore the release of the carp virus Cyprinid herpesvirus-3. The Fisheries Research and Development Corporation (FRDC) is leading the \$15 million planning process on behalf of the Australian Government. At the end of 2018, the FRDC will provide the completed NCCP to the Australian Government, which will then decide whether to release the virus or not.

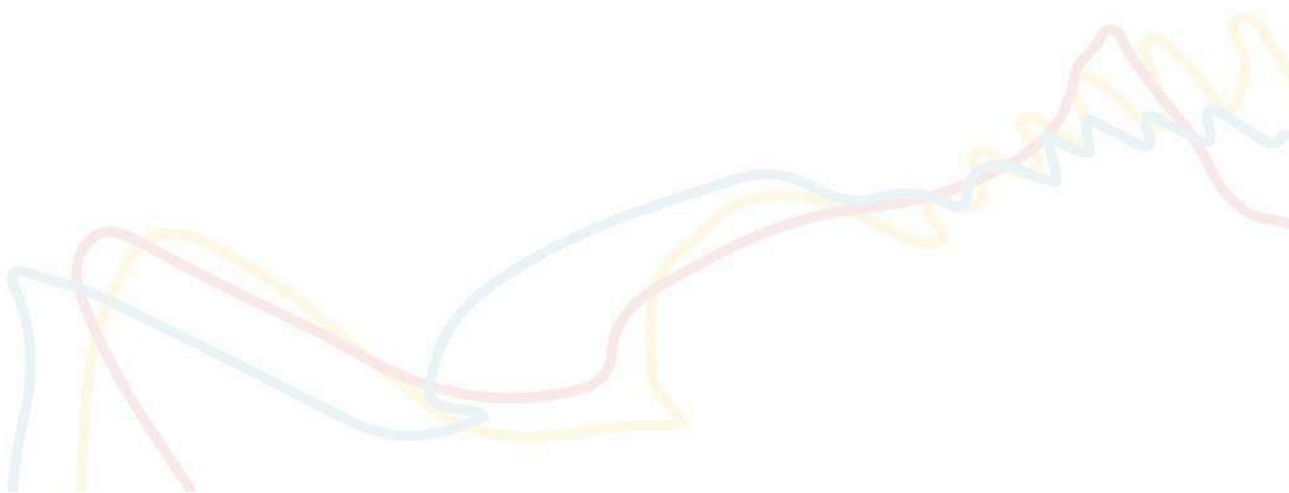
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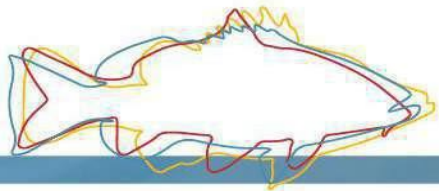
Media inquiries

Katie Paynter

0417 057 243

katie.paynter@seftons.com.au





MEDIA RELEASE

23 April 2017

Talking 'carp' in Queensland's Logan-Albert Catchment

The National Carp Control Plan (NCCP) team will meet today with local waterway experts in Queensland's Logan-Albert catchment to share science and knowledge that will help inform consideration of whether the carp virus should be released as part of a strategy to reduce carp impacts in Australia

From mapping local carp hotspots to understanding the catchment's hydrology and water scheme, the workshop will be used to inform regional planning, and develop release and clean-up strategies at a catchment level - should the carp virus be released.

The Logan-Albert region has been selected as one of a number of case study areas for the NCCP which together cover a range of geographic areas and habitat types to better understand on-ground considerations associated with possible release of the carp virus.

NCCP National Coordinator Matt Barwick says working closely with stakeholders on a regional scale to test ideas and understand the complexities of local river systems is an essential part of the carp control process.

"With NCCP research well underway and project findings being delivered, it is important to test the practicalities of these learnings at a local level. For example, we need to pinpoint where carp are present, understand any operating constraints and determine priority clean up locations and possible disposal methods to inform consideration of the viability of this approach to carp control," says Mr Barwick.

"We also use these sessions to look for any gaps in our knowledge and science, and work with stakeholders to help design NCCP strategies," Mr Barwick adds.

The Logan-Albert workshop in Beaudesert follows a similar session held in the Lachlan Catchment earlier this year. Information from these workshops will be used to develop case studies to inform potential operations strategies and implementation planning on a local scale.

Visit www.carp.gov.au for the latest new from the NCCP.

Ends

About the National Carp Control Plan

The National Carp Control Plan (NCCP) is being prepared to explore the pros and cons of the possible release of the carp virus cyprinid herpesvirus 3. The Fisheries Research and Development Corporation (FRDC) is leading the planning process on behalf of the Australian Government. Once complete, the National Carp Control Plan will inform a decision by governments on whether to release the virus or not.

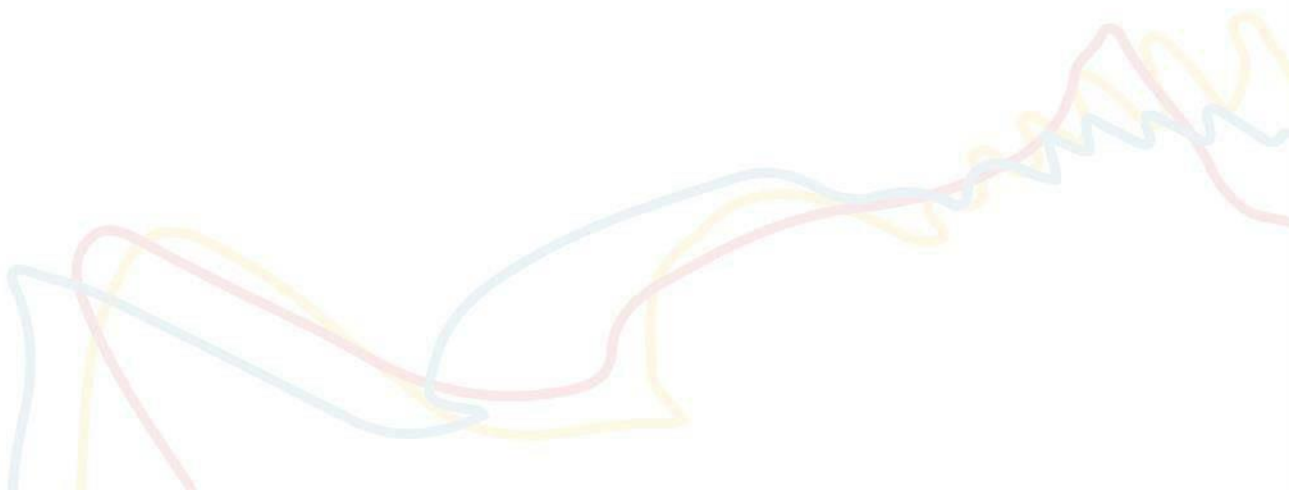
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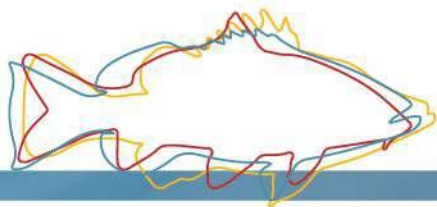
Media inquiries

Katie Paynter

0417057243

katie.paynter@seftons.com.au





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2 May 2018

Dr Paula Reynolds
Consultant in Fish Medicine, Aquatic Pathobiologist, Director of Research
LFH Laboratories
The Little Paddock Millfield Lane West
Frampton, Lincolnshire, PE20 1BW
United Kingdom

Dear Dr Reynolds

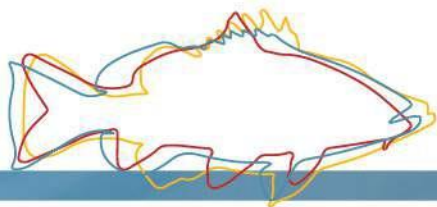
An undated copy of your letter to an Australian Senator raising your concerns about the proposed release of Cyprinid herpesvirus three (CyHV-3, hereafter 'the carp virus') into the Australian environment has recently been forward to me.

Although the letter is not addressed to me, I would like to respond directly to your concerns on behalf of the National Carp Control Plan (NCCP).

First, please accept my apologies for any misunderstanding regarding our work in the biosecurity sphere to control the introduced pest species common carp (*Cyprinus carpio*) in Australian waterways. Such misunderstanding was certainly not my intention.

As you are probably aware, the current stage of the NCCP is a planning process led by the Fisheries Research and Development Corporation (FRDC) on behalf of the Australian Government. The process is thoroughly investigating the most appropriate options for an integrated program of carp control, with a focus on the potential release of the carp virus, along with a complementary suite of measures.

Through this 18-month period of extensive scientific research and community and stakeholder consultation, the NCCP will ensure that the benefits and risks of a biocontrol strategy for carp are fully explored, understood and communicated. After considering all the evidence, the NCCP will make recommendations to the Australian government about the best integrated approach for controlling



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carp, and whether the carp virus should be used. Governments will then reach a decision regarding virus release.

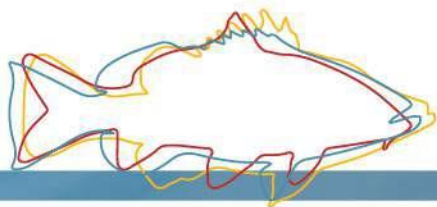
We welcome all feedback and contributions to the NCCP – including your contribution – and I want to emphasise that the NCCP is a process, not a foregone conclusion. We do not take this responsibility lightly.

Australian decisions on carp biocontrol must reflect our unique environments and the wildlife and people who rely on them. We are extremely mindful of the potential risks of biocontrol programs in Australia and the final recommendations and decisions will draw on the best available research, from within Australia and around the world.

The NCCP is bringing together world-class social scientists, economists, biologists, water-quality experts, veterinarians and risk assessment specialists to investigate the challenges, risks, costs, opportunities and potential benefits of carp biocontrol.

Our extensive research program into the potential release of the carp virus includes:

- Research using market and non-market valuation techniques to understand costs and benefits of carp biocontrol;
- A multi-method biomass study that will provide the most accurate picture obtained to date of carp abundance and distribution in Australian waterways.
- Epidemiological modelling exploring patterns of viral transmission and efficacy under varying scenarios and environmental conditions.
- Completion of trials testing susceptibility of non-target species to the carp virus.
- A quantitative assessment of the social, economic, and ecological risks posed by carp biocontrol.
- Field experiments and modelling investigating risk of water quality impacts including anoxia and blue-green algal blooms following major carp mortalities.
- Development of strategies for cleaning up dead carp.
- Exploring feasibility of secondary carp control approaches.
- Assessing productive uses for harvested dead carp.



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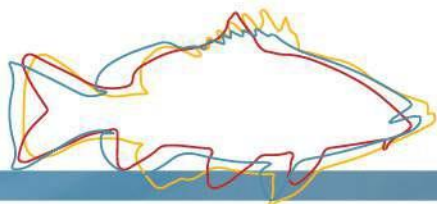
- Social science investigating community attitudes to carp biocontrol.

For more detail on these projects please visit <http://www.carp.gov.au/What-we-are-doing/Research/NCCP-research-projects>.

I speak on behalf of all those working on the NCCP when I say that we are committed to investigating and understanding international experiences with the carp virus, and using these to inform our research. This is a similar approach to that taken by Australian scientists when assessing the risks and benefits of releasing two control agents for rabbits – myxoma virus and rabbit calicivirus. In the United Kingdom (and much of Europe), both the myxoma virus and rabbit calicivirus were unwanted intruders rather than carefully-deployed biocontrol agents, and Australian plans to use calici for rabbit biocontrol drew concern and criticism from international scientists. For example, Dr Brian Cooke, the CSIRO epidemiologist involved in the initial rabbit calicivirus release, described his European colleagues' scepticism as follows:

Our visits aroused a lot of controversy and interest and I particularly remember a talk I gave in Tübingen, Germany, at the Federal Research Centre for Virus Diseases in Animals. The seminar room was packed while I faced a grilling by veterinarians and researchers who were concerned about such use of a lethal virus. Despite some difficulties in explaining how the risks of introducing a virus could be balanced against expected economic and conservation gains from its release, this two-way exchange of information was highly beneficial. I was better able to explain and weigh up risks and benefits, while scientists in Europe had better back-ground information to help them think about the issues in context. (Cooke, 2014, p. 68).

As Dr Cooke describes, these discussions provided a basis for mutually-beneficial dialogue between Australian and international scientists, ultimately contributing to a highly-successful biocontrol program. Indeed, rabbit biocontrol using both myxoma virus and calicivirus provided a benefit of approximately A\$70 billion to Australian agriculture in the 60 years to 2011 (Cooke et al., 2013). Neither virus has infected Australian native animals, nor have they negatively affected human health. The environmental benefits of reduced rabbit populations have been substantial (Cooke et al., 2013). While rabbit and carp biocontrol are not always directly comparable, Australia's experience of the former indicates that viral biocontrol of vertebrate pests deserves thorough investigation.

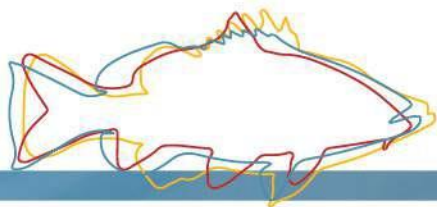


I note that page two of your letter raises some particular concerns including species specificity, the impact of dead carp and secondary infections. I propose that we re-open dialogue so that we can better understand your references to literature and work undertaken in the United Kingdom. However, as a first step, please find below a summary of work currently being undertaken by the NCCP in relation to these matters:

CyHV-3 species specificity

Twenty-two non-target species have now been tested for susceptibility to the carp virus in Australia, adding to a significant global body of work demonstrating the virus's specificity to carp. Taxa tested for susceptibility by CSIRO scientists comprise thirteen species of native Australian teleosts, native short-headed lampreys, the introduced rainbow trout (*Oncorhynchus mykiss*), two amphibian (frog) species, two reptiles (a lizard and a freshwater turtle), a freshwater crustacean, chickens (a representative bird), and mice (a representative mammal). Species selected for testing represent a broad (though not complete) range of the taxonomic groups likely to encounter CyHV-3 if it is released in Australia. The selection of species for non-target susceptibility trials was reviewed and approved by the relevant regulatory body, the Australian Pesticides and Veterinary Medicines Authority, and test results have been published in the international, peer-reviewed *Journal of Fish Disease* (McColl et al., 2016). An independent review of the non-target species testing, conducted by an experienced veterinary pathologist, is also underway, reflecting the central importance of thoroughly investigating the virus's species specificity. This review will also determine whether testing of additional species is advisable.

I also note that you cite Grimmett et al. (2006), who reported CyHV-3 replication in cultured cell lines of fathead minnow (*Pimephales promelas*), as evidence that CyHV-3 may infect species other than common carp. Grimmett et al. (2006) were seeking to identify the virus responsible for a mass carp mortality in the Chadakoin River, New York. Their study was not designed to test *P. promelas* susceptibility to CyHV-3, nor do they claim to have done so. Rather, they used cultured cell lines from *P. promelas* as a tool for identifying the virus. Crucially, culturing a virus using cell lines is a different procedure to testing a species' susceptibility to a virus, and viral replication in cultured cells does not imply susceptibility in the species from which the cultured cells were drawn. Viral replication in cultured cells does not reflect a species' real-world susceptibility because cultured cells exist in isolation from the immune system. In a living fish, susceptibility or resistance to virus infection is not solely determined at the cell level, but rather involves complex host-virus interactions including virus-



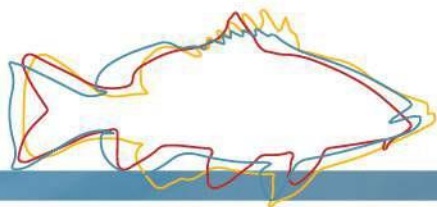
specific receptor and host immune responses (Davidovich et al., 2007). Thus, there are examples wherein CyHV-3 has been observed to replicate in cell cultures of species definitively identified as non-susceptible. For example, CyHV-3 can replicate in Au cell lines derived from goldfish (*Carassius auratus*) (Davidovich et al., 2007), yet living goldfish are not susceptible to CyHV-3 (Yuasa et al., 2013).

Assumption of a simple ‘single-outbreak’ epidemiology

Your letter states that “*Mr Barwick and the NCCP may be expecting a simple mass carp mortality...*”. I would like to respectfully refute this claim that the NCCP assumes a simplistic outcome from virus release. On the contrary, the NCCP’s entire research and planning process is based on recognition of the complexity of CyHV-3’s epidemiology, and challenges associated with continental biocontrol. Research to better understand the delicate inter-relationships between water temperature, carp behaviour, viral transmission, and the inevitable increase in host resistance is essential to informing the NCCP’s recommendations to the Australian Government. Previous experience with biological control of vertebrate pests both in Australia and internationally has clearly shown that success is contingent upon detailed knowledge of viral epidemiology in the specific context of the planned release location, and the NCCP has thorough research underway to ensure the program capitalises on this insight.

The NCCP’s carp biomass estimation project was briefly mentioned earlier in this letter, but warrants further discussion, as it will provide data essential for understanding the carp virus’s epidemiology in Australian environments. International experience in natural ecosystems and Australian laboratory experiments confirm that the carp virus is transmitted between carp most effectively when fish are in close proximity or direct physical contact. Therefore, understanding carp population density in the various habitats throughout the species’ Australian distribution is a fundamental input to epidemiological modelling.

Carp biomass has been estimated in several Australian locations to date, but only for geographically-restricted areas, and without a standardised methodology enabling direct comparison between areas. The NCCP’s carp biomass estimation project will provide estimates with the geographic coverage and standardised sampling methodologies necessary to enable delivery of epidemiological modelling results that accurately and usefully inform decision-making. The carp biomass estimation project involves collaboration between the fisheries agencies of four Australian states and the Australian



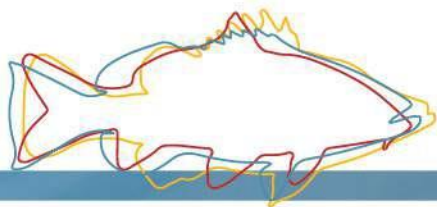
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Capital Territory, and uses a multi-method approach, enabling cross-validation of estimates derived from different sampling approaches. The project will also use carp biomass data collected during various other aquatic sampling programs, and will calibrate and standardise these valuable pre-existing data sources to strengthen biomass estimates and increase efficiency. In summary, estimating carp biomass across the species' Australian distribution is a challenging but essential component of the NCCP research program. The project draws on appropriate expertise and is based on scientifically rigorous sampling approaches.

While habitat-specific carp biomass estimates are essential for predicting patterns of viral transmission, the complex epidemiology of CyHV-3 demands consideration of other factors including carp behaviour and physiology (especially aggregation and movement patterns), water temperature and hydrological (river flow) regimes, possible evolution of resistance as carp and the virus move towards equilibrium, viral salinity tolerance, and the possible existence in Australia of benign cross-reactive viruses that could confer resistance to the virus. These factors are being investigated by CSIRO and RMIT University researchers. Like the biomass estimation project, results from this research will directly inform the NCCP's epidemiological modelling work, ensuring that predictions of virus behaviour in Australian ecosystems are based on accurate, context-specific biological knowledge, and can therefore be confidently used to inform decision-making and planning.

The NCCP's epidemiological modelling project will use data collected from Australian ecosystems and carp populations to develop a detailed understanding of virus spread, efficacy, and the consequent timing and geographic distribution of carp mortality events if virus release proceeds. Epidemiological modelling is being coordinated by an experienced CSIRO veterinary epidemiologist, and involves collaboration with experts in carp biology and Australian river hydrology. Epidemiological modelling also draws on international experience and the insights of commercial fishers and other river users, ensuring that the NCCP benefits from existing knowledge. Ultimately, the epidemiological modelling work will provide insights into viral behaviour and host-virus interactions essential for deciding whether CyHV-3 release should proceed. If carp biocontrol does proceed in Australia, knowledge derived from epidemiological modelling will inform development of virus release and clean-up strategies.

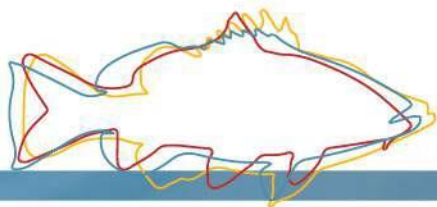


The impact of dead carp on other fish species and wildlife

Understanding and mitigating risks to water quality (and hence to other species and ecosystems) posed by possible major carp mortalities is central to the NCCP research program. University of Adelaide and University of Western Australia researchers are currently investigating the effects of decaying carp on water quality parameters, and the potential for short-term release of nutrients resulting from carp kill events to trigger cyanobacterial (blue-green algae) blooms. Crucially, the cyanobacterial component will also identify options for using river flow to divert nutrients down environmentally-benign pathways, potentially enabling some of the nutrients currently locked away in millions of invasive carp to benefit native ecosystems. Both the anoxia and cyanobacterial projects are basing their estimates on very high carp densities, providing an accurate understanding of 'worst-case' scenarios crucial to decision-making.

The anoxia and cyanobacterial projects are complemented by work underway at the University of Technology Sydney to investigate the effects of varying dead carp densities on a broad range of water quality parameters, including bacterial loads and the presence of decomposition byproducts. We are also co-investing in research to investigate appropriate water treatment responses to carp mortalities. More broadly, the NCCP risk assessment project is focussed on identifying risks to Matters of National Environmental Significance (MNES) as part of the NCCP's stringent approval process under the *Environmental Protection and Biodiversity Conservation Act 1999*. This suite of projects aims to quantify the potential impacts of major carp kills on water quality and specific ecosystem components.

A second set of projects addresses the logistical and practical elements of clean-up. These projects include a global scan and review of fish-kill clean-up approaches, including discussions with international agency staff, contractors and organisations with direct and extensive fish-kill clean-up experience, and work to explore engineering solutions that could enhance clean-up efficiency. Clean-up planning is being undertaken by a dedicated Operations Working Group (OWG) within the NCCP. The OWG includes suitably qualified and experienced representatives from all the Australian jurisdictions where carp occur, and will also consult widely with people and organisations with direct practical experience of fish kill clean-up, large-scale logistical response, and complex operational planning. The OWG will use information from research and consultation to develop effective, achievable, and flexible clean-up plans.



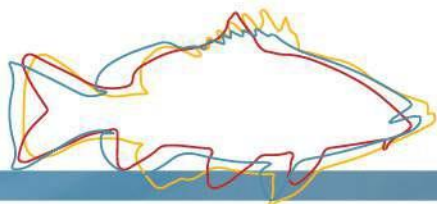
Risk of secondary infections:

Your letter also raises the prospect of secondary infections by pathogenic bacteria living on decaying carp bodies. Bacterial loads following carp mortality events are partly a function of water quality. Oxygen and nutrient levels are especially important determinants of bacterial proliferation. For example, your letter specifically mentions *Clostridium botulinum*, an anaerobic bacterium requiring anoxic (no oxygen) or hypoxic (low oxygen) conditions, and *Aeromonas*, some species of which multiply in decaying fish. The NCCP's work in developing strategies to safeguard water quality has been described elsewhere in this letter, but is also relevant here, as protecting water quality will provide an inherent safeguard against the proliferation of harmful bacteria.

Risks associated with harmful bacteria are also being directly assessed through research underway at the University of Technology Sydney (and already mentioned briefly). This research includes quantification of bacterial loads under varying densities of decaying carp, while the NCCP risk assessment will ensure that this risk is considered as part of legislative approval processes. The risk assessment project also provides a trigger for further investigation of bacterial risks, should these emerge as a key concern.

This letter has covered considerable detail, but a key point I would like to make is that no decision has been made at this time on deployment of a biocontrol agent for the control of carp in Australia. Rather, the National Carp Control Plan is coordinating the careful research, planning, and community consultation necessary to determine whether virus release is viable. Virus release cannot proceed unless stringent legislative approval processes, requiring transparent and thorough risk assessment, are satisfied.

As research and risk assessment under the NCCP proceeds, I welcome an open dialogue between your organisation and the Fisheries Research and Development Corporation to further discuss these and any other issues you wish to raise. There are a range of ways we can continue to work together to explore how your insights and research may benefit work underway by the NCCP. I suggest a useful next step would be a call to discuss. My number is +61 249163957. Please feel free to call any time convenient to you.



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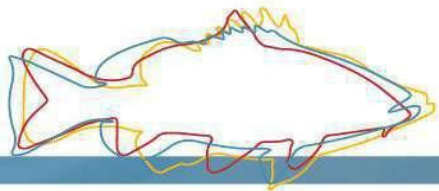
I thank you for your interest and concern.

Yours sincerely

Matt Barwick
National Coordinator, NCCP.

Further Reading

- Cooke, B.D. (2014). *Australia's War Against Rabbits: The Story of Rabbit Haemorrhagic Disease*. CSIRO Publishing, Collingwood, Victoria.
- Cooke, B., Chudleigh, P., Simpson, S. & Saunders, G. (2013). The economic benefits of the biological control of rabbits in Australia, 1950 – 2011. *Australian Economic History Review*, 53, 91 – 107, doi: 10.1111/aeht.12000.
- Davidovich, M., Dishon, A., Ilouze, M. & Kotler, M. (2007). Susceptibility of cyprinid cultured cells to Cyprinid herpesvirus 3. *Archives of Virology*, 152, 1541 – 1546. 10.1007/s00705-007-0975-4
- Grimmett, S.G., Warg, J.V., Getchell, R.G., Johnson, D.J. & Bowser, P.R. (2006). An unusual koi herpesvirus associated with a mortality event of common carp *Cyprinus carpio* in New York State, USA. *Journal of Wildlife Diseases*, 42, 658 – 662.
- McColl, K.A., Sunarto, A., Slater, J., Bell, K., Asmus, M., Fulton, W., Hall, K., Brown, P., Gilligan, D., Hoad, J., Williams, L.M. & Crane, M St J. (2016). Cyprinid herpesvirus 3 as a potential biological control agent for carp (*Cyprinus carpio*) in Australia: susceptibility of non-target species. *Journal of Fish Diseases*, 10.1111/jfd.12591.
- Yuasa, K., Sano, M. & Oseko, N. (2013). Goldfish is not a susceptible host of Koi Herpesvirus (KHV) disease. *Fish Pathology*, 48, 52 – 55. <http://dx.doi.org/10.3147/jsfp.48.52>



National Carp Control Plan Update

The following update has been prepared to support your interview with the ABC's Landline program.

The information below provides an overview of the National Carp Control Plan's role in the management of common carp in Australia, includes information about the process and a brief update on some of the latest research findings.

- National Carp Control Plan (NCCP) is a process driven by evidence based scientific results.
- The ultimate goal of the NCCP is to significantly reduce carp impacts to allow native species and habitats to thrive.
- To do this, we need to develop a multi-pronged approach for the effective long term carp control in Australia.
- Viral bio control is just one of the many possible measures being investigated.
- The NCCP is committed to ensuring that any carp control measures adopted are safe for Australian ecosystems, will be effective on carp, and will ultimately improve the health of our waterways and native communities.
- No decision has been made on the carp virus – the NCCP is a process, not a foregone conclusion. That means the carp virus has not been released in Australia.
- Any decision to release the carp virus will be informed by the National Carp Control Plan itself, with recommendations based on the findings of the research projects currently underway.
- The NCCP is committed to ensuring the work being undertaken into possible biocontrol is as transparent as possible. All findings from research projects will be made available to the public via the NCCP website. The NCCP also encourages all members of the public to share their thoughts and feedback to ensure the recommendations to government are able to consider stakeholder attitudes and opinions.
- The NCCP is committed to ensuring the research work undertaken is thorough and comprehensive. Should a research project require further time to explore additional avenues, then NCCP will seek an extension from Government. Recommendations will not be shaped by deadlines.

Research News

Risk to Human Health

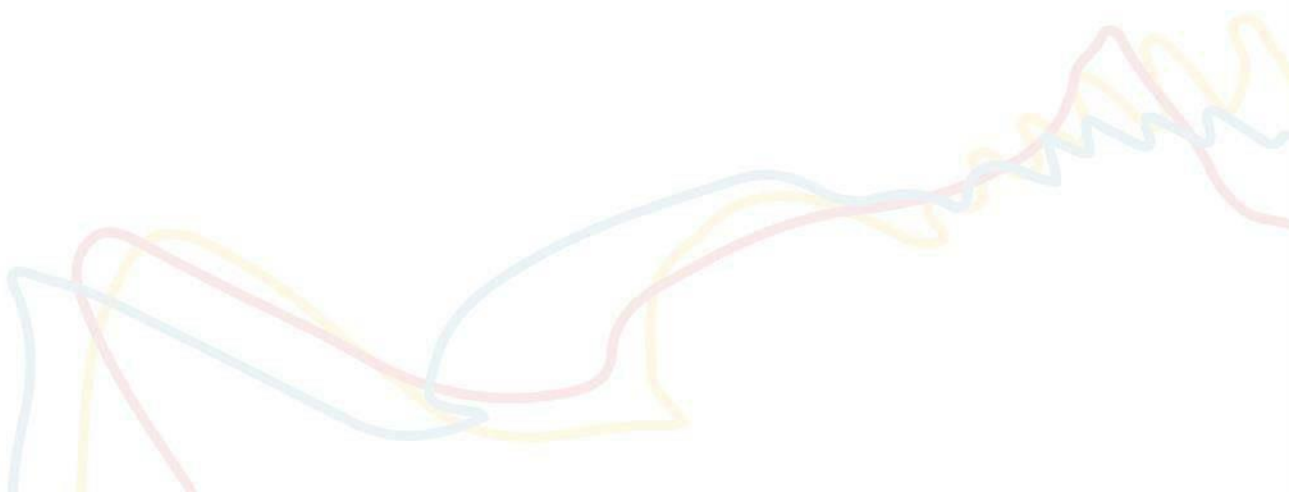
Research confirms that the carp virus poses no direct risk to human health. Recent studies from Australian National University demonstrate the carp virus is incapable of transmitting from animals to humans, and there is no evidence that it could develop this capability.

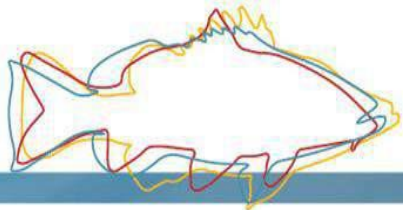
Clean-up Strategies

Experts from Charles Sturt University are undertaking research into how other countries have responded to major fish kills. This project will systematically seek and evaluate published materials on fish kill clean-up and will also consult with directly with persons experienced in this area. Knowledge from the project will enable the NCCP to learn from previous fish kill clean-up experience, informing development of appropriate and feasible clean-up strategies.

Commercial Fishing as a Solution

Research models confirm that effectiveness of fishing (physical removal) in reducing carp numbers is low. Unless carp populations can be reduced by a large percentage, there will be no meaningful reduction in long-term carp numbers.





NATIONAL CARP CONTROL PLAN

RESTORING NATIVE BIODIVERSITY

NCCP 2018 Media Schedule

Circulation: NCCP Communications Working Group Members

Cc: Matt Barwick (NCCP), Pamela Milnes (NCCP), Katie Paynter (Seftons), Kerin Heatley (Seftons), Jayne Goldring (Seftons), Mikala Dickie (Seftons)

Date: As at 26 April 2018

Seftons will manage a proactive press office for the National Carp Control Plan for 2018. Below is a list of proactive media opportunities that have been mapped out based on current knowledge and insights. The schedule is intended to be flexible, and opportunities may need to be shifted depending on the availability of information at the time (e.g. research) and any unforeseen issues or events.

The below does not take into consideration reactive and ad hoc media opportunities that are expected to arise and these will be managed in addition to the below.

NCCP 2018 Media Relations Schedule				
Timing	Angle	Tool/s	Spokesperson/s	Proposed Outlet/s
w/c 23 April	DRAFTED – AWAITING NCCP APPROVAL Carp biomass research update. How much carp is in Australia, how will this inform the NCCP?	<ul style="list-style-type: none"> Media release (National/local Bega) 	<ul style="list-style-type: none"> Matt Barwick Jarod Lyon, Arthur Rylah Institute 	<ul style="list-style-type: none"> Bega local story (carp sighting) National release
	DRAFTED – AWAITING NCCP APPROVAL Putting virus infected carp to good use – a sustainable solution (refer to GVW trial)	<ul style="list-style-type: none"> Media release 	<ul style="list-style-type: none"> Matt Barwick Janet Howieson GVW (TBA) 	<ul style="list-style-type: none"> National print and broadcast Local Shepparton media (TBA)
	DISTRIBUTED Logan Albert Case Study Workshop	<ul style="list-style-type: none"> Media release 	<ul style="list-style-type: none"> Matt Barwick 	<ul style="list-style-type: none"> Qld print and broadcast Local media
w/c 30 April	AWAITING FINAL RESEARCH FINDINGS FROM NCCP Control of carp fishing through commercial fishing	<ul style="list-style-type: none"> Media release announcing research findings 	<ul style="list-style-type: none"> Matt Barwick Paul Brown 	<ul style="list-style-type: none"> National print and broadcast ABC radio Fishing shows

NCCP 2018 Media Relations Schedule				
	(29/30/31 May) – TO BE DRAFTED Lachlan Community Consultation	<ul style="list-style-type: none"> Media Release 	<ul style="list-style-type: none"> Matt Barwick Local representative (TBC) 	<ul style="list-style-type: none"> Local media
	LIAISING WITH JOURNALIST Channel 9 Gippsland	<ul style="list-style-type: none"> Pitch story on NCCP research findings 	<ul style="list-style-type: none"> Matt Barwick Researchers 	<ul style="list-style-type: none"> Charlotte Lam (Channel 9 Gippsland)
w/c 7 May	(8-10 May) – TBA OzWater – Joe Pera/Water NSW Presentation	<ul style="list-style-type: none"> Media release 	<ul style="list-style-type: none"> TBA 	<ul style="list-style-type: none"> TBA
	DRAFTED – AWAITING FINAL RESEARCH FINDINGS NCCP research using high-tech methods to simulate possible carp virus release/Epi modelling	<ul style="list-style-type: none"> Media release 	<ul style="list-style-type: none"> Matt Barwick Peter Durr 	<ul style="list-style-type: none"> Science Media Centre
w/c 14 May	REPORT BEING WRITTEN – AWAITING REPORT FINDINGS Community Consultation Findings (TBA) insights, attitudes, support for virus release. The NCCP has visited over 80 locations across Australia	<ul style="list-style-type: none"> Media release – localised if possible based on findings 	<ul style="list-style-type: none"> Matt Barwick Local NRMs 	<ul style="list-style-type: none"> National print and broadcast Local/regional print media
	DRAFTED – AWAITING FINAL RESEARCH FINDINGS (16 May) Clean-up strategies/Engineers workshop	<ul style="list-style-type: none"> Media release 	<ul style="list-style-type: none"> Matt Barwick Luiz Silva, Charles Sturt Uni 	<ul style="list-style-type: none"> National print and broadcast
w/c 21 May	TO BE DRAFTED – TO BE ISSUED POST LANDLINE Little Duck Lagoon	<ul style="list-style-type: none"> Media release 	<ul style="list-style-type: none"> Justin Brookes Matt Barwick 	<ul style="list-style-type: none"> SA media
	UPCOMING (23-24 May - Principal Investigator Meeting) NCCP – what the research tells us....	<ul style="list-style-type: none"> Media release Science Media Centre – Panel discussion 	<ul style="list-style-type: none"> Matt Barwick 3 x researchers (TBA) 	<ul style="list-style-type: none"> Science Media Centre Adelaide print and broadcast
June	DRAFTED – NCCP ADVISED TO HOLD UNTIL POST CWG MEETING Social Research – What Australia’s thinking...the latest findings	<ul style="list-style-type: none"> National media release – tailored to states Stakeholders sharing insights 	<ul style="list-style-type: none"> Matt Barwick Local NRMs 	<ul style="list-style-type: none"> The Project, Channel 10 National print and broadcast

NCCP 2018 Media Relations Schedule				
		<ul style="list-style-type: none"> Email pitch to The Project 		
	UPCOMING Fishing expert or academic providing an update on Australia's carp problem	<ul style="list-style-type: none"> Editorial 	<ul style="list-style-type: none"> Team to discuss 	<ul style="list-style-type: none"> Pitch to key fishing publication either via editorial or advertorial Fishing show
	UPCOMING Relevance to Human Health	<ul style="list-style-type: none"> National media release 	<ul style="list-style-type: none"> Katrina Roper Matt Barwick 	<ul style="list-style-type: none"> National print and broadcast Science Media Centre
	UPCOMING Busting the myths about carp and the carp virus	<ul style="list-style-type: none"> Media release 	<ul style="list-style-type: none"> Matt Barwick Relevant researchers Industry experts 	<ul style="list-style-type: none"> Huff Post Buzz Feed
July	UPCOMING Release of draft report (TBA)	<ul style="list-style-type: none"> Press call National media release Localised state releases Pre-recorded radio grans SMC Panel/Expert opinions 	<ul style="list-style-type: none"> Fed govt representative Matt Barwick CSIRO State NRMs Consider other talent of interest to media "friends of NCCP" (e.g. anglers, MDB locals) 	<ul style="list-style-type: none"> All national print, TV and radio. Consider exclusives. Science Media Centre
August	UPCOMING What impact will the carp virus have on our waterways – water quality, oxygen levels – results from field trials/research update	<ul style="list-style-type: none"> Media release 	<ul style="list-style-type: none"> Justin Brookes Matt Barwick 	<ul style="list-style-type: none"> Science media centre
	UPCOMING CSIRO Research – extra peer review to confirm methods	<ul style="list-style-type: none"> Media release 	<ul style="list-style-type: none"> Matt Barwick Ken McColl 	<ul style="list-style-type: none"> National print and broadcast Science media Centre
September	UPCOMING University of Canberra – medium and long term horizons for ecosystem as carp numbers are reduced	<ul style="list-style-type: none"> Media release 	<ul style="list-style-type: none"> Matt Barwick Uni of Canberra 	<ul style="list-style-type: none"> Science Media Centre National print and broadcast

NCCP 2018 Media Relations Schedule				
October	UPCOMING Benefits from carp control in the Murray-Darling Basin.	<ul style="list-style-type: none"> Media release 	<ul style="list-style-type: none"> Peter Chudleigh Matt Barwick 	<ul style="list-style-type: none"> Local print and broadcast
November	UPCOMING Carp Biomass Research – final report – carp numbers in your local waterways.	<ul style="list-style-type: none"> Media release – localised if possible based on findings 	<ul style="list-style-type: none"> Jarod Lyon, ARI Matt Barwick 	<ul style="list-style-type: none"> National print and broadcast Local/regional print media
	UPCOMING Social Attitudes – Jacki Schirmer – final report.	<ul style="list-style-type: none"> Media release – localised if possible based on findings 	<ul style="list-style-type: none"> Matt Barwick Jacki Schirmer 	<ul style="list-style-type: none"> National print and broadcast Local/regional print media
December	Release of final report (TBA).	<ul style="list-style-type: none"> Media release Fact sheet Radio grabs 	<ul style="list-style-type: none"> Federal government reps State leads Matt Barwick 	<ul style="list-style-type: none"> Consider exclusive with media partner who delivered final report results Science Media Centre

Additional media opportunities for consideration:

- Key research milestone updates for each project.
- Possible joint partner releases, e.g.: Curtain Uni and waste management partner looking at options being explored; joint release with MDA.
- Releases to support speaking opps or key conferences/events

Identified Challenges – For discussion with CWG

1. Availability of information to release

NCCP research findings undergo a considerable and necessary approval process whereby:

- the research body submits final reports to NCCP in accordance with program milestones
- NCCP review, then provide to SAG for peer review
- SAG then either approve findings or request further work by research body.
- Once approved by peer review process the information can be released to the public.

Seftons advises the speedy and regular release of information to the public on a frequent (daily / weekly) basis to ensure transparency for the public. However outputs are shaped by the NCCP research milestone calendar and approval processes. Seftons remains in daily contact with NCCP's research team to ensure information can be shared as soon as available and as quickly as possible.

2. NCCP program timelines:





There is growing concern from the general public that there is not sufficient time to be consulted effectively on the research findings and NCCP recommendations, given the currently communicated December 2018 deadline. While NCCP is seeking an extension to this deadline from the Government, it has not yet received confirmation. Seftons has advised an announcement around program timings and consultation opportunities is critical to maintain trust with the public. The limited information around program milestones and timelines results in significant uncertainty and growing opposition to the program. Seftons has urged NCCP to seek clarity on a date prior to Landline airing so this message can be included in the Landline segment, scheduled to air 6 May 2018. Additional communications will be undertaken to communicate a program extension if granted - via media relations and direct engagement with stakeholders.

3. Landline - Negative Coverage

There is a potential, given the stakeholders Landline has interviewed, that the segment could question the NCCP program and process. It may highlight, via stakeholders interviewed, a lack of time and budget to effectively deliver the program and it could also question the lack published science to support the release of a virus. This could be reflected in questions raised at Senate Estimates in May 2018. Seftons has been working with NCCP to reach clarity around program timelines and are seeking to push for a decision prior to Landline - so updated messaging can be shared with the program and ensure NCCP is represented in the best possible light.

Risk Rating Possible New Risks to Consider for NCCP Risk Register - to be discussed with CWG

Extreme	Contradictory research by a reputable authority such as the World Health Organisation, is published which challenges the validity of current research projects
Extreme	The possibility of independent research being published that links virus risks to water health and safety
High	Research that could potentially suggest that virus release would lead to water supply disruptions
High	An activist group such as Get Up or change.org increases its campaign against NCCP and mainstream media provide a spotlight to this sentiment
Medium	Information from within the NCCP is leaked to the media / public prior to approval resulting in mis-information / incorrect messaging being communicated
Medium	That a stakeholder group, potentially impacted by a virus release, has a welfare incident with a particular member - due to fears associated with NCCP program impacts
Extreme	NCCP extensions are not granted by government resulting in a lack of consultation, information and time available to engage effectively with the general public.
Extreme	Landline airs a negative story on the progress of the NCCP and this sparks more wide-spread negative coverage about the integrity of the NCCP
High	NCCP is criticised for not sufficiently engaging with the public due to a lack of presence digitally - no Facebook, Twitter etc.
Medium	NCCP research project has inconclusive findings, which may negatively impact other research areas
High	A popular Australian identify opposes release of the virus and makes this known via mainstream media
High	Potential change of government in 2019, which would impact consultation efforts thus far and delivery of project milestones
Extreme	Inability of NCCP to address misinformation online (particular social channels) and the inability to engage in a timely manner
High	Journalist or media organisation with a concerted agenda against the nCCP, produces sensationalised or incorrect reports about the program.

 		<p><i>FRDC acknowledges the Kurna people as the traditional custodians of this land on which we are meeting, and pay our respects to their elders past and present. We acknowledge the special relationship that Indigenous Australians have with their traditional lands and waters.</i></p> <p>National Carp Control Plan Communications Working Group (CWG)</p> <p>Thursday 3 May 2018 AGENDA Telemeeting (Time TBA) Dial in: 1800 857 029 Participant Code: 271 39723</p>	 Quality ISO 9001 
Time	#	Agenda item	
<p>This will be a preliminary meeting, prior to our face-to-face meeting in May, to report on:</p> <ul style="list-style-type: none"> NCCP Communications and Engagement Plan deliverables against agreed timeframes Brief members on the soon to air, ABC Landline story. <p>This preliminary telemeeting will enable a more thorough exploration of issues and opportunities at our CWG Meeting in Adelaide in May 2018.</p>			
TBA 2mins	1	MEETING OPENING <ul style="list-style-type: none"> Welcome from Chair Objectives of the telemeeting 	Robbie Sefton, CWG Chair
TBA 5mins	2	NCCP Project Update <ul style="list-style-type: none"> Update on NCCP project timelines Overview of PI Workshop objectives in May 	Matt Barwick, NCCP
TBA 10mins	3	Stakeholder Engagement Reporting (Paper 2 & 3) <ul style="list-style-type: none"> Report on deliverables to date Update on upcoming priorities Feedback from CWG members on jurisdictional priorities 	Led by Kerin Heatley, Seftons
TBA 10mins	4	Media Relations Reporting (Paper 5) <ul style="list-style-type: none"> Report on deliverables to date Overview of hurdles / challenges Update on Fairfax partnership opportunity 	Led by Katie Paynter, Seftons
TBA 10mins	5	Bang the Table <ul style="list-style-type: none"> Upcoming public launch Stakeholder engagement approach 	Led by Mitchell Hughes, Seftons
TBA 15mins	6	ABC Landline Briefing <ul style="list-style-type: none"> Update on pending story (May 6) Potential stakeholders involved Program considerations / impacts Strategic response to segment CWG Member support 	All
TBA 5mins	7	Digital Media <ul style="list-style-type: none"> NCCP to highlight current gap in services CWG Members to provide feedback on needs 	All

Time	#	Agenda item	
		and direction in relation to digital comms	
TBA 5mins	8	Clearer Waters <ul style="list-style-type: none"> Concise overview of status of approvals and timeline 	Tom Rayner, NCCP
TBA 5mins	9	CWG Meeting, 24 May 2018 (Adelaide) (Paper 4) <ul style="list-style-type: none"> Review of Risk Register - Communications Risks Tab ahead of face to face meeting Feedback on draft agenda Submission of agenda items 	Robbie Sefton, CWG Chair
		MEETING CLOSED	

Carp FAQs – Reviewed

Are carp a symptom or a cause of environmental damage? (already on the website)

(A) The answer is both. Australian rivers experience many environmental pressures – carp are just one. Separating carp impacts from other sources of environmental stress is difficult for two main reasons. Firstly, carp thrive in rivers that are already degraded, and tend to intensify the impacts of other environmental pressures. Secondly, the footprint carp leave on the environment extends over large areas, and can result in sudden shifts between different ecosystem states (e.g. clear vs. muddy water) - rather than varying predictably in direct relation to carp numbers.

Research on carp impacts through the 1990s provided evidence that carp really do damage river ecosystems. Carp muddy waters, increase nutrient levels (promoting blue-green algae blooms), and reduce abundance of water plants (macrophytes), invertebrates (e.g. aquatic insects and crustaceans), and some fish. Carp also increased water turbidity (muddiness) in 91% of studies, reduced invertebrates in 94%, and reduced water plants in 96% of studies.

Carp impacts also tend to be interlinked and cumulative. Their bottom-feeding behaviour reduces water clarity, limiting sunlight to water plants. This, in turn, reduces habitat and/or food for invertebrates, native fish and waterbirds. The overall effect of these impacts is to shift ecosystems from a predominantly clear-water state to a murky, nutrient-rich state ('eutrophication'). Once an ecosystem shifts in this direction, it can be difficult to reverse, meaning that the river will remain muddy for some time, even as carp numbers fluctuate in locations within the system.

Find out more about The Carp Problem [\[link\]](#).

(B) Carp are both a cause and a symptom of environmental damage in Australian waterways. However, separating impacts caused by carp from other stressors is difficult. Carp impacts occur across a range of spatial and temporal scales, interact with other stressors and have cumulative, emergent properties. Understanding carp impacts and quantifying them scientifically is difficult, requiring well-planned, multi-year experiments in different types of systems.

Nonetheless, increased research on carp impacts through the 1990s provided evidence that carp clearly do damage river ecosystems. This research included systematic reviews and meta-analyses, which combine and analyse data from numerous studies on a particular topic, as well as large-scale experiments. These studies prove that carp muddy waters, increase nutrient levels (thereby promoting blue-green algae blooms), and reduce abundance of water plants (macrophytes), invertebrates (e.g. aquatic insects and crustaceans), and some fish species (Vilizzi *et al.*, 2014, 2015; Weber and Brown, 2009). For example, Weber and Brown (2009) found that carp increased water turbidity (muddiness) in 91% of surveyed studies, reduced invertebrates in 94%, and reduced macrophytes in 96% of surveyed studies. A more recent meta-analysis supported these results, finding strong evidence for carp impacts on all the same ecosystem components (Vilizzi *et al.*, 2015, Table 1).

Component	Trajectory	Strength of evidence
Water quality		
• Turbidity	Increase	High
• Nitrogen	Increase	Very high
• Phosphorous	Increase	Very high
Vegetation		
• Phytoplankton/ chlorophyll a	Increase	Moderate
• Aquatic macrophytes	Decrease	Very high
Invertebrates		
• Zooplankton	Change	Inconsistent evidence
• Benthic invertebrates	Decrease	High
Vertebrates		
• Fish	Decrease	High
• Amphibians	Decrease	Moderate
• Waterfowl	Decrease	Insufficient evidence

Table 1. Summary of the effects of Carp on freshwater ecosystems (Results of causal criteria analysis for hypotheses – taken from Vilizzi *et al.* 2015).

Carp impacts also tend to be interlinked. Adult carp feed by sucking sediments from the river bed, filtering out food items and puffing the remaining mud into the water column. This feeding style reduces water clarity, which limits the sunlight penetrating down to macrophytes on the river bed. Fewer macrophytes mean less habitat for invertebrates and native fish. Smaller carp compete with native fish for planktonic food sources. The cumulative effect of these impacts is to shift ecosystems from a predominantly clear-water state ('oligotrophic'), to a murky, nutrient-rich state ('eutrophic'). Shifts from one state to another are often termed 'phase shifts' in ecology. Once an ecosystem has shifted to a new phase, reversing the change is usually difficult, meaning that the river will remain muddy for some time, even as carp densities fluctuate in various locations within the system.

Australian studies have also demonstrated carp impacts in Australian waterways. King *et al.* (1997) examined effects of carp density on turbidity, phytoplankton (microscopic algae), and nutrients in two billabongs. The study found clear evidence of carp impacts, with the authors reporting that, "in these natural billabongs, high standing stocks of carp caused increases in turbidity and more intense algal blooms."

Finally, a recent study on the lower Murray River used an experimental design with considerable power to detect carp effects, demonstrating that carp can drive phase shifts from clear to dirty water states, with the latter characterised by poor populations of macrophytes and aquatic invertebrates (Vilizzi *et al.* 2014). Importantly, this study also indicated that carp may cause environmental damage at lower densities than previously considered.

In summary, acknowledging that Australian rivers face degradation from many sources should not preclude carp control. Nor should action to reduce carp impacts diminish efforts to restore waterway

health via other means. Rather, an integrated carp control program could support broader river rehabilitation programs, including habitat restoration and water-quality remediation.

References

- King, A. J., Robertson, A. I. and Healey, M. R. (1997). Experimental manipulations of the biomass of introduced carp (*Cyprinus carpio*) in billabongs. I. Impacts on water-column properties. *Marine and Freshwater Research* 48, 435 – 443.
- Vilizzi, L., Tarkan, A. S. and Copp, G. H. (2015). Experimental evidence from causal criteria analysis for the effects of common carp *Cyprinus carpio* on freshwater ecosystems: a global perspective. *Reviews in Fisheries Science and Aquaculture* 23, 253 – 290.
- Vilizzi, L., Thwaites, L. A., Smith, B. B., Nicol, J. M. and Madden, C. P. (2014). Ecological effects of common carp (*Cyprinus carpio*) in a semi-arid floodplain wetland. *Marine and Freshwater Research* 65, 802 – 817.
- Weber, M. J. and Brown, M. L. (2009). Effects of common carp on aquatic ecosystems 80 years after “Carp as a Dominant”. *Reviews in Fisheries Science* 17, 524 – 537.

Why are carp such a problem in Australia? (NEW Question)

(A) There are two main reasons why carp have become a dominant pest in Australia. The first relates to their biology: carp can tolerate a wide variety of environmental conditions, have a broad diet, grow rapidly, mature early, can produce large numbers of eggs, are strong swimmers, good jumpers, and do well in ecosystems that are modified by humans. Carp also spawn earlier than many Australian native species, which means that their juveniles have access to food and other resources before many native fish species.

Environmental conditions at the time carp began dominating Australian waterways is also an important factor. The initial explosion of carp numbers in Australia in the 60's-70's occurred during a 'perfect storm' of sorts. Many native fish species had experienced significant declines in numbers due to historically high commercial fishing pressure, widespread reduction in habitat, extensive construction of dams, weirs and other barriers to their migration, and declines in water quality due to widespread poor land use and urbanisation. These elements combined to provide the ideal conditions for a successful invader such as carp to flourish.

(B) Koehn (2012) provides a detailed summary of the factors that are likely to have led to the success of carp in Australia. To summarise, carp possess many of the characteristics of a successful invader. Specifically, they can tolerate a wide variety of environmental conditions, have a broad diet, grow rapidly, mature early, are highly fecund, are highly dispersive, and do well in systems that are modified by humans (Gehrke 1997) (see Table 1 below).

Table 1 Attributes of Common carp (From Koehn 2004)

<i>Attribute</i>	<i>Details</i>
Invasion history, wide distribution and abundance	Introduced and successfully established throughout Europe, Asia, Africa, North America, South and Central America, Australia, New Zealand, Papua New Guinea and some islands of Oceania
Wide environmental tolerances	High environmental tolerances with: temperature tolerance 2-40.6 °C, salinity up to about 14 parts per thousand (0.4 seawater salinity) and pHs 5-10.5, oxygen levels as low as 7% saturation and generally occur in most types of freshwater habitat
High genetic variability	Three genetic strains in Australia
Early sexual maturity	Males at 1 year, females at 2 years
Short generation time	2-4 years
Rapid growth	Hatching of eggs is rapid (two days at 25 °C) and newly hatched carp grow very rapidly
High reproductive capacity	They are highly fecund broadcast spawners with egg counts as high as 2 million per female
Broad diet	Omnivore/detritivore
Gregariousness	Schooling species
Possessing natural mechanisms of dispersal	Mobile species with fish moving between schools. Dispersal can also occur with the downstream drift of larvae. Rates of transfer can be affected by conditions such as flooding
Commensal with human activity	Bred as an ornamental and aquaculture species, used as bait and sought by some anglers

The environmental conditions that were prevalent during the 1960's-1970's when carp numbers dramatically increased in Australia were also relevant. There was likely to be particularly low predatory pressure on carp during this period as a result of high commercial fishing pressure, widespread reduction in habitat, prolific construction of dams, weirs and other barriers to their migration (Koehn 2001), and water quality was generally poor due to widespread inappropriate landuse practices (Koehn 2004). Coupled with the rapid growth rate of carp and large size when mature, this is likely to have enabled a large cohort to overwhelm predatory pressure and rapidly attain a size that precluded predation.

References

- Gehrke PC (1997). Differences in composition and structure of fish communities associated with flow regulation in New South Wales. In: Harris JH and Gehrke PC (Eds), *Fish and Rivers in Stress: the NSW Rivers Survey*. NSW Fisheries Office of Conservation and Cooperative Research Centre for Freshwater Ecology, Cronulla and Canberra. Pp 169–200.
- Koehn J (2001). The impacts of weirs on fish. In: *The Proceedings of The Way Forward on Weirs*. Presented on 18-19th August 2000, at the Centenary Lecture Theatre, Royal North Shore Hospital, St Leonards, NSW. Inland Rivers Network, Sydney. Pp 59–66.
- Koehn J (2004). The biology, ecology and vulnerabilities of carp, IN Fulton W and Hall K (eds) (2014). *Forum proceedings: Carp management in Australia — state of knowledge*. 19–20 June 2012, Melbourne. PestSmart Toolkit publication, Invasive Animals Cooperative Research Centre, Canberra, Australia.

How did carp get here? (already on the website)

(A) Slow beginnings

Carp had a slow start in Australia, which is surprising given their wide distribution and high numbers today. During the mid-1800s, attempts were made to introduce carp in Victoria, New South Wales, and Tasmania. None of these early introductions appear to have resulted in large, self-sustaining populations. Similarly, two attempted introductions in Victoria during the 1870s failed to become established. Localised populations of carp became established in New South Wales around 1907-1910, following two introductions comprising a total of about 15 carp into an inlet pond above Prospect Reservoir. This strain (genetic variant) of carp, known as the 'Prospect Strain' probably maintains a locally-restricted distribution in the area.

The Boolarra strain appears

Early introductions were followed by other releases, some involving up to 50,000 fish, through the 1930s-1950s. However, carp numbers seem to have remained relatively low through to the early 1950s. This pattern of limited geographic spread and relatively low abundance changed when carp (produced by Boolarra Fish Farms Pty. Ltd. in Gippsland during the late 1950s) were introduced into a reservoir at Morwell, Victoria in the 1960s. Rapid spread of these 'Boolarra Strain' carp within Victoria followed, and by 1962 a Victorian state government inquiry had determined that carp should be eradicated.

We've got a problem: expansion to the present day

'Boolarra Strain' carp had gained access to the Murray River by the mid-late 1960s, despite eradication attempts using poisons by the Victorian Department of Fisheries and Wildlife. Extensive flooding in 1974-75, and again during the early 1990s, facilitated the species' spread. People also aided the spread of carp, through deliberate translocation, undetected presence of carp among stocked native fish, and the use of small carp as live bait for predatory fish. The latter is thought to be the primary mechanism explaining the presence of carp in several Tasmanian lakes, and in NSW coastal river systems. Ornamental carp (also known as Koi) continue to be released by the public.

(B) NONE

How many carp are there in Australia? (already on the website)

(A) Fisheries scientists and managers tend to talk about how much (biomass or density) rather than how many (abundance). This is in part because biomass and density - which estimate total weight of a given organism in a certain area at a given time - is generally more useful as it relates to the amount of energy available. For a pest fish species such as carp, which quickly reach a size too large for most predators, and estimate of biomass can help reflect the amount of energy locked up in carp populations, and therefore unavailable to other species in the food web.

Carp have become the dominant freshwater fish in south-east Australia, comprising up to 80% of the fish biomass in many areas, resulting in biomasses as high as 3144 kg/ha and densities of up to 1000 individuals/ha in some parts of the Murray-Darling Basin.

To date, estimates of carp biomass/density in Australia have largely been at local or regional scales, and can vary widely.

Research being conducted as part of the National Carp Control Plan will provide the most accurate and comprehensive estimate of carp biomass in Australia to date. This estimate is vital to informing clean up strategies and the modelling of possible release scenarios to deliver optimal carp control outcomes through biocontrol.

(B) Fisheries scientists and managers tend to talk about how much (biomass or density) rather than how many (abundance). This is in part because absolute abundance is hard to measure in fish, but also because biomass and density, which estimate total weight of a given organism in a certain area at a given time is generally more useful as it relates to the amount of energy available to the next trophic level. Further, for a pest fish species such as carp that quickly reach a size too large for most predators (Koehn, 2004), estimation of biomass can help reflect the amount of energy locked up and unavailable to other species.

Carp have become the dominant freshwater fish in south-east Australia (Koehn, 2004), comprising a significant proportion of the fish biomass in many areas, resulting in biomasses as high as 3144 kg/ha and densities of up to 1000 individuals/ha in some parts of the MDB (Harris and Gehrke, 1997).

To date, estimates of carp biomass/density in Australia have largely been at local or regional scales, and vary from 190kg/ha in Moira Lake (Brown et al., 2003); to between 150-690kg/ha in a range of billabongs (Hume et al., 1983); 690 kg/ha in the Bogan River (Reid and Harris, 1997); 619 kg/ha in the Campaspe irrigation channels (Brown et al., 2003), and 10-40 kg/ha in the Logan/Albert system (Norris et al 2011).

Estimation of biomass or density at larger spatial scales bring greater uncertainty. However, estimates of carp biomass and density will be important for the NCCP, to inform mathematical modelling of virus spread, and development of strategies to clean up fish after possible virus release.

For this reason, it is proposed to improve estimates of carp biomass and density as a deliverable of the NCCP research program.

References

- Brown P, Sivakumaran KP, Stoessel D, Giles A, Green C and Walker T (2003). Carp Population Biology in Victoria. Marine and Freshwater Resources Institute, Department of Primary Industries, Snobs Creek.
- Harris J.H and Gehrke P.C. (1997). Fish and Rivers in Stress. The NSW Rivers Survey. NSW Fisheries Research Institute & the Cooperative Research Centre for Freshwater Ecology. Sydney.
- Hume DJ, Fletcher AR and Morison AK (1983). Carp Program. Final Report. Arthur Rylah Institute for Environmental Research, Fisheries and Wildlife Division, Ministry for Conservation, Victoria.
- Koehn, J. (2004). Carp (*Cyprinus carpio*) as a powerful invader in Australian waterways. *Freshwater Biology* 49, 882–894.
- Norris A, Chilcott K, Hutchison M and Stewart D (2011). *Carp Surveys of the Logan and Albert Rivers Catchment 2006-2009*. PestSmart Toolkit publication. Invasive Animals Cooperative Research Centre, Canberra, Australia.

Reid, D. D. and Harris, J. H. (1997). 'Estimation of total abundance: the calibration experiments'. In: Harris, J.H. and Gehrke, P.C. (Eds) *Fish and Rivers in Stress – The NSW Rivers Survey*, pp. 63–760. NSW Fisheries Office of Conservation, Cronulla, NSW; and the Cooperative Research Centre for Freshwater Ecology, Canberra, ACT.

What carp control measures have been undertaken and why haven't they worked? (already on the website)

(A) Commercial carp fishing fills niche markets for human consumption, fish leather, aquaculture feedstock, bait and fertiliser. Local consumer demand for carp is limited to 50-60 tonnes per year at present. Demand from these niche markets is not enough to have any significant reduction in the current carp population.

Manual carp removal, including trapping and controlling access to breeding grounds, has seen some success in Tasmania's Lake Crescent and Lake Sorell. Lake Crescent was declared free of carp in 2007 after 12 years of manual removal work. Carp removal work is continuing in Lake Sorell. The cost of the program has been about \$11 million.

Earlier research programs have explored ways to genetically alter fish to produce offspring of only a single sex. This approach does not kill affected fish, but merely pushes a population to extinction by reducing breeding opportunities. As carp have a lifespan of 35 years, it would take more than a century using this approach alone to significantly reduce the population. Both approaches are being investigated as potential long-term control measures in combination with the carp virus.

(B) Various methods have been trialled to control carp, or reduce their impacts in Australia over the years. Primarily these have involved physical removal (e.g. netting, angling, trapping) or poisoning. All of these methods have advantages and disadvantages relating to their effectiveness, ease of use, size specificity (some remove only adult carp), impacts on non-target organisms, and cost. Methods employed for controlling carp and their impacts are summarised within Table 1, and are further discussed below.

Table 1. Carp-control or impact reduction methods used, trialled or under investigation in Australia (modified from [NSW DPI, 2010](#)).

INSERT TABLE AS PER CURRENT WEBSITE

Further analysis...

Community carp fishing competitions.

Recreational fishing events are popular within the Australian community, and such events can enable quantities of carp biomass to be removed from an area, although research suggests that this does not result in a lasting reduction in carp numbers (Gehrke, 2010). For example, the mean estimated population reduction by anglers in the Goondiwindi Carp Cull was reported to be 0.5% compared to 13.4% for electrofishing (Norris et al., 2013). Similarly in 2008, anglers in the Goondiwindi Carp Cull removed 40 carp from lagoon habitats in south-eastern Queensland, equivalent to 1.9% of the estimated population, and much lower than the catches provided by other methods (Gehrke, 2010).

Brown and Walker (2004) demonstrate that unless carp populations can be reduced by a large percentage, physical removal is unlikely to offer an effective method for carp control. Similarly,

Gehrke (2010) suggests that low-cost carp angling events provide an effective method for promoting community awareness of issues surrounding carp in the Murray-Darling Basin, but their effectiveness in reducing carp populations and environmental impacts is low (Norris et al., 2013).

Commercial harvesting

Graham et al. (2005) summarise predominant commercial fishing methods used for carp, which include electrofishing, hauling, trapping, mesh netting and angling. The limited acceptance of carp for human consumption in Australia limits its market value, with most being sold to produce low-value fishmeal, fish oil, pet food, fertiliser and stock feed. Wilson (1998), cited in Graham et al. (2005), suggested that at the time of writing, fishers needed to catch 5 – 6 tonnes of carp per week (at 80 cents/kg) to make an economic return.

This means that the fishery is generally only viable under conditions that allow the removal of large volumes of carp at minimal cost. Another factor limiting the effectiveness of commercial fishing in controlling carp abundance is the increasing cost of production as biomass is reduced.

Electrofishing

Whilst electro-fishing is effective for carp removal in areas of high density, it is less effective in deep water, high turbidity or flow, and can be expensive both in terms of capital and labour costs. Whilst non-target species are also stunned during electrofishing, they generally quickly recover, and mortality levels are normally low under appropriate operating circumstances.

Electrofishing is generally not widely used as a commercial fishing method for carp in Australia, but Graham et al. (2005) report that supplies of carp to a processing factory at Sale are regularly supplemented with electro-fished carp from tributaries to the Gippsland Lakes, particularly during drought conditions when carp retreat into the rivers as the lakes become more saline.

Seining

A seine net is a large sock-shaped net with a pair of long hauling lines attached to each side of the open end. The net (including ropes) is 'shot' from the boat around a concentration of fish and then hauled back to the boat or shore by drawing on the lines. In this way, the fish are progressively corralled into the back of the net, or cod end.

Seining is one of the more effective methods for catching large quantities of carp (Bajer et al., 2011). Catch records from 2001/02 show that approximately 15 t were caught by drag net from Lake Brewster, after carp were attracted to the hauling area with berley, and up to 1000 t of carp are harvested annually from Lake Wellington, mostly by seine (Graham et al., 2005).

Application of this method is limited to shallow lakes or dams where the substrate is clear of obstructions or where the bottom is relatively smooth, firm, and clear of snags (Graham et al., 2005). Most natural waterways are unsuited to seining as lakes and riverbeds are normally littered with woody debris and other snags (Graham et al., 2005).

Trapping

Unbaited drum nets were widely used to target native fish prior to discontinuation of commercial fishing in the Murray-Darling Basin in 2003. Larger baited rectangular traps have also been shown to be effective for carp but require easy access to the water. Baited traps are most effective when set downstream in flowing waterways, and when fitted with netting wings to one or both banks to guide carp into the trap. Non-target impacts of trapping can be significant, particularly for air-breathing vertebrates, if not fitted with an escape device or accessible air space.

Mesh-netting

Mesh-netting was historically the dominant method used for harvesting native fish, in the Murray-Darling. Captured fish can be damaged through scale loss and meshing injuries, and air breathing

vertebrates can also become entangled. However, Graham et al. (2005) report that setting mesh nets in shallow water and frightening fish towards the net can effectively enable carp to be targeted whilst having minimal impact on non-target species.

Judas carp

The Judas carp technique (wherein males are radio-tagged to then enable the school of fish they associate with to be targeted as they re-integrate) may enhance effectiveness and efficiency of commercial harvest by targeting spawning or winter aggregations which contain populations of sexually mature carp (Gilligan et al., 2010). This method has been trialled in Lake Cargelligo in the lower Lachlan catchment and in Tasmania with some success, however is most useful in areas of low carp abundance (Bajer et al., 2011).

Rotenone

There are no fish poisons, or piscicides available that are specific to common carp, and no chemicals are fully registered as piscicides in Australia. Rotenone is the only chemical currently legal to use in Australia to control any pest fish, and it is occasionally used for this purpose (Rayner and Creese, 2006). Rotenone interrupts cellular respiration in gill-breathing animals by blocking the transfer of electrons in the mitochondria. Acute exposure to toxic levels reduces cellular uptake of blood oxygen, resulting in increased cellular anaerobic metabolism and associated production of lactic acid causes blood acidosis (Fajt and Grizzle, 1998).

Historically, Australian states and territories have applied for a 'minor use' permit to be able to use chemicals such as rotenone for a specified time and under permit conditions, including that there:

- ☐ is a high probability of successfully eradicating the pest fish, with a low chance of immigration or recolonization.
- ☐ has been a review of environmental factors that identified benefits outweigh impacts on native species.
- ☐ is no risk to the health of humans, stock or domestic animals through direct contact or contaminated drinking water.
- ☐ is generally strong public and political support for the operation.

Researchers have attempted to develop a carp-specific targeting method using rotenone, through integrating it into floating pellet baits. This method was found to be unsuccessful due to low buoyancy and palatability (Gehrke, 2003). Further development and testing would be required (and a separate APVMA permit approved) before rotenone baits could be utilised to target carp populations. Although it is a potential option to eradicate discrete new populations of carp in some limited circumstances, rotenone is not appropriate for use to control carp on a large scale.

Fishway carp separation cages

Carp separation traps that exploit the species' jumping behaviour have been implemented at numerous locations throughout the Murray-Darling Basin. Trials with these devices on the Murray River revealed that these traps were effective in catching carp and passing native fish, with 88.8% of carp caught, 99.9% of native species passed, and catches of up to 5 t per day in some instances. It is clear that their effectiveness can be variable (Table 2), with catch per unit effort across seven installations reported to be 14.7kg per week, or 1.4 carp per day (pers. comm. M. Gordos). For this reason the NSW Department of Primary Industries no longer recommends the installation of carp separation cages at remote, un-manned locations.

Table 2. Carp separator trap effectiveness at several sites within the MDB (Gordos, M. unpublished data).

SITE	SAMPLING DAYS	CAPTURED CARP	TOTAL MASS (kg)	kg wk ⁻¹
Bulgeraga Creek Culvert	69	295	326.9	33.2
Yallakool Creek Weir	105	213	124.7	8.3
Colligen Creek Weir	128	133	129.6	7.1
Stevens Weir	102	205	224.0	15.4
Island Creek Weir	153	54	182.0	8.3
Bumbuggan Weir	53	49	143.0	18.9
Booligal Weir	373	419	625.6	11.7
TOTAL	983	1368	1755.6	14.7

Exclusion devices

Carp exclusion devices can prevent access of mature carp to wetlands or other spawning grounds, having potential to substantially reduce carp populations at a localised scale if breeding hotspots are targeted. However such methods are size specific, generally excluding only larger carp, and may affect native fish recruitment by also excluding native species from spawning grounds.

Exclusion devices are relatively inexpensive and are already installed at many sites in the Murray-Darling Basin, however require supporting infrastructure and ongoing maintenance. For maximum effectiveness exclusion devices require ecological research to identify recruitment areas for carp and native species. This information will assist in determining appropriate deployment locations. 'Finger traps' may be a more effective technique, though are still at prototype stage.

Sex biasing approaches, including daughterless carp technology

In theory sex biasing approaches including the species specific daughterless carp technology could eventually provide total eradication of common carp, however these methods have never been proven in carp, and many have never been proven in any fish species

The effectiveness of any genetic sex biasing approach including daughterless carp technology would depend on many factors, including: heritability; fitness of modified fish; size of carp population at time of release; and number of modified fish released.

There are still many technical hurdles to overcome before sex biasing approaches such as daughterless carp technology would ready for laboratory or field trials. Daughterless carp would initially require stocking of large numbers of genetically modified fish and would require integrated implementation with other initiatives. There are risks of public non-acceptance of intentional release of genetically modified pests into the natural environment and would therefore requires extensive public consultation.

If able to be used, effects on carp populations would be unlikely to be seen for up to 100 years due to the long generation time of carp. These pest control methods are still under development, and so feasibility and associated costs for delivery are difficult to estimate.

Cyprinid herpesvirus-3 (CyHV-3)

Cyprinid herpesvirus 3 (or CyHV-3, hereon referred to as the carp virus) can cause mass mortalities in carp under the right conditions with potential to substantially reduce wild populations, at least until resistance develops. The virus has been shown to be species-specific, and is not size specific, although juveniles are believed to be more susceptible. The strong relationship between temperature and the virus is understood to reduce in effectiveness at low or high temperatures; furthermore hybridisation between goldfish and carp could reduce the virus effectiveness. There is also the risk of public non-acceptance of the intentional release of a biocontrol agent.

As is the case with daughterless carp technology, CyHV-3 requires extensive public consultation, and further quantification of costs. Challenges may also arise as a result of resistance from stakeholders who value carp, including the ornamental koi carp industry, koi enthusiasts and commercial fishers. Furthermore, mass carp mortalities as a result of the virus release could have water quality impacts detrimental to native species.

References

Bajer, P., Chizinski, C. and Sorensen, P. (2011). Using the Judas technique to locate and remove wintertime aggregations of invasive common carp. *Fisheries Management and Ecology*, 18, 497-505.

Brown, P. and Walker, T. I. (2004). CARPSIM: stochastic simulation modelling of wild carp (*Cyprinus carpio* L.) population dynamics, with applications to pest control. *Ecological Modelling*, 176, 83-97.

Fajt, J. R. and Grizzle, J. M. (1998). Blood respiratory changes in common carp exposed to a lethal concentration of rotenone. *Transactions of the American Fisheries Society*, 127, 512-516.

Gehrke, P. C., St Pierre, S., Matveev, V. and Clarke, M. (2010). Ecosystem responses to carp population reduction in the Murray-Darling Basin. Canberra, Australia: Murray-Darling Basin Authority.

Gehrke, P. C. (2003). Preliminary assessment of oral rotenone baits for carp control in New South Wales. Managing invasive freshwater fish in New Zealand. Wellington New Zealand: Department of Conservation.

Graham, K. J., Lowry, M. B., Walford, T. R. and Wales, N. S. (2005). Carp in NSW: Assessment of distribution, fishery and fishing methods, NSW Department of Primary Industries, Cronulla Fisheries Centre.

McColl, K. A., Sunarto, A., Slater, J., Bell, K., Asmus, M., Fulton, W., Hall, K., Brown, P., Gilligan, D., Hoad, J., Williams, N. and Crane, M. (2016). Cyprinid herpesvirus 3 as a potential biological control agent for carp (*Cyprinus carpio*) in Australia: non-target species testing. *Journal of Fish Diseases*, 40, 1141-1153.

Norris, A., Chilcott, K. and Hutchison, M. (2013). The Role of Fishing Competitions in Pest Fish Management. In: PestSmart Toolkit. Invasive Animals Cooperative Research Centre, Canberra.

Rayner, T. S. and Creese, R. G. (2006). A review of rotenone use for the control of non-indigenous fish in Australian fresh waters, and an attempted eradication of the noxious fish, *Phalloceros caudimaculatus*. *New Zealand Journal of Marine and Freshwater Research*, 40, 477-486.

Can't you release a predator to eat the carp? (already on the website)

(A) While predators like the Murray Cod and some birds (e.g. egrets and pelicans) eat carp, they are not able to control carp impacts. Introducing a non-native predator or significantly increasing numbers of a native predator to control carp would not be wise. Unlike virus/host relationships, which can be quite species-specific, predator/prey relationships can be quite elastic. So, there is a high risk of non-carp species being preyed on by introduced predators.

(B) It is true that predators such as Murray cod eat carp. A dietary study found 35% of Murray cod sampled (all cod >500mm total length) contained carp (Ebner, 2006). Similarly, Baumgartner (2005) found cyprinids (carp and goldfish) constituted up to 25% of prey occurrence in Murray cod sampled from the Murrumbidgee River. Though predators undoubtedly exert pressure on carp populations, they are unable to reduce carp numbers to below thresholds known to cause environmental impacts.

A number of studies have suggested that threshold densities above which carp cause ecological damage are around 100–174 kg/ha (Haas *et al.*, 2007; Bajer *et al.*, 2009; Matsuzaki *et al.*, 2009), substantially lower than the historic threshold estimate of 450 kg/ha (Fletcher *et al.*, 1985), which has formed the basis of much carp impacts research (Vilizzi *et al.*, 2014).

Some researchers have suggested threshold densities to be even lower: Brown and Gilligan (2014) modelled that an integrated pest control approach would be required to reduce carp densities in the Lachlan River Catchment below the estimated threshold density (88kg/ha).

Introducing a novel predator to reduce carp numbers below threshold densities would not be wise.

References

Bajer, P.G., Sullivan, G. and Sorensen, P.W. (2009). Effects of a rapidly increasing population of common carp on vegetative cover and waterfowl in a recently restored Midwestern shallow lake. *Hydrobiologia* 632, 235–245

Baumgartner, L. J. (2005). Effects of weirs on fish movements in the Murray-Darling Basin, University of Canberra.

Brown, P. and Gilligan, D. (2014). Optimising an integrated pest-management strategy for a spatially structured population of common carp (*Cyprinus carpio*) using meta-population modelling. *Marine and Freshwater Research* 65, 538–550.

Ebner, B. (2006). Murray cod an apex predator in the Murray River, Australia. *Ecology of Freshwater Fish*, 15, 510-520.

Fletcher, R.F., Morison, A.K. and Hume, D.J. (1985). Effects of carp (*Cyprinus carpio* L.) on communities of aquatic vegetation and turbidity of waterbodies in the lower Goulburn River basin. *Australian Journal of Marine and Freshwater Research* 36, 311–327.

Haas, K., Köhler, U., Diehl, S., Köhler, P., Dietrich, S., Holler, S., Jenssch, A., Niedermaier, M. and Vilsmeier, J. (2007). Influence of fish on habitat choice of water birds: a whole-system experiment. *Ecology* 88, 2915–2925.

Matsuzaki, S., Usio, N., Takamura, N. and Washitani, I. (2009). Contrasting impacts of invasive engineers on freshwater ecosystems: an experiment and meta-analysis. *Oecologia* 158, 673–686.

Vilizzi, L., Thwaites, L.A., Smith, B.B., Nicol, J.M. and Madden, C.P. (2014). Ecological effects of common carp (*Cyprinus carpio*) in a semi-arid floodplain wetland. *Marine and Freshwater Research* 65, 802 – 817.

Is a virus the most effective way to control carp? (like question already on the website – Why use a virus to control carp?)

(A) Since carp numbers exploded in Australia in the 1970's, a variety of measures have been used to try and control carp. However, all have been unsuccessful in reducing carp impacts on a large scale. Biological control (a virus) offers some key advantages over other control approaches as it can be species-specific and highly effective when used correctly. It is also relatively cost effective.

Research into the carp virus has demonstrated that the virus is species-specific. Additionally, when conditions are right (ideal temperature, high density of carp and optimal virus concentration) the virus can result in significant carp mortality.

Additional research under the National Carp Control Plan is building on what we know about the virus, the target species (carp) and their role in Australian ecosystems. This research will be used to develop a strategy for release of the virus, which is likely to deliver optimal results for carp control and the recovery of natural ecosystems.

(B) Since carp numbers in Australia dramatically increased in the 1970's a number of other methods have been tried to control carp in recent decades, without widespread success.

Biocontrol agents offer a number of key advantages over other pest control methods:

1. They can be quite species-specific when selected carefully (Suckling and Sforza 2014).
2. They are often capable of sustaining themselves using the population of the intended target pest species. This means although it may cost a bit to introduce a new biocontrol agent to an environment, it's a tactic that may only need to be applied once due to the self-perpetuating and self dispersing nature of biocontrol agents (Van Lenteren et al., 2003). This also means that biological control can also remain in place and effective for a much longer time than other methods of pest control. These attributes mean that biological control can be quite cost effective long terms (Saunders et al. 2010).
3. Most important of all, it can be highly effective when implemented on the basis of good science (Fenner and Ratcliffe 1965, Cook & Fenner 2002, Jean-Yves and Fourdrigniez 2011, Van Rensberg et al. 1987), however incomplete knowledge can lead to sub-optimal outcomes (Suckling 2013).

Carp biological control is now one of the most well researched vertebrate pest biocontrol examples worldwide. Research led by the CSIRO has shown that the carp herpesvirus is both species-specific (only affects carp) and can be highly effective on carp under the right conditions. Virus concentration, temperature and carp density appear to be critical factors in delivering a successful outcome.

Additional research now underway under the National Carp Control Plan is to building on what is known about the virus, the target species (carp) and their role in Australian ecosystems, in addition to lessons learned from previous biocontrol case studies (McColl et al. 2014) to develop a strategy for virus release which is likely to deliver optimal results for carp control, and the recovery of the health of natural ecosystems.

It is important to note that the carp virus alone will not completely eradicate carp - some carp will inevitably survive, and over time populations would rebuild. Therefore, continuing investigation of synergistic control measures, such as those that aim to alter carp reproduction biology, is important to ensure that we maximise the success of any control carp impacts.

References

- Cooke, B.D., Fenner, F., 2002. Rabbit haemorrhagic disease and biological control of rabbits. *Wildlife Research* 29, 689–706.
- Fenner, F., Ratcliffe, F.N., 1965. *Myxomatosis*. Cambridge University Press, London.
- Jean-Yves M and Fourdrigniez M (2011). Conservation benefits of biological control: The recovery of a threatened plant subsequent to the introduction of a pathogen to contain an invasive tree species. *Biological conservation*, 144: 1, P 106-113
- McColl K, Cooke B, Sunarto A (2014) Viral biocontrol of invasive vertebrates : lessons from the past applied to cyprinid herpesvirus-3 and carp (*Cyprinus carpio*) control in Australia. *Biological control*, 72, pp 19-117.
- Saunders G, Cooke B, McColl, K Shine R, and Peacock T (2010). Modern approaches for the biological control of vertebrate pests: An Australian perspective. *Biological control* 52 288-295.
- Suckling D.W. (2013) Benefits from biological control of weeds from New Zealand range from negligible to massive: A retrospective analysis. *Biological control* 66 27-32
- Suckling DM, Sforza RFH (2014) What Magnitude Are Observed Non-Target Impacts from Weed Biocontrol? *PLoS ONE* 9(1): e84847. doi:10.1371/journal.pone.0084847
- van Lenteren JC, Babendreier D, Bigler F, Burgio G, Hokkanen HMT, Kuske S., Loomans AJM, Menzler-Hokkanen I., Van Rijn PCJ, Thomas MB, Tommasini MG and Zeng Q-Q (2003). Environmental risk assessment of exotic natural enemies used in inundative biological control. *Biocontrol Sci Technol* 48: 3–38. doi: 10.1023/A:1021262931608.
- van Rensburg, P.J.J., Skinner, J.D., van Arde, R.J., 1987. Effects of feline panleucopaemia on the population characteristics of feral cats on Marion Island. *Journal Applied Ecology* 24, 63–73.
- Van Wilgen, B.W., De Wit, M.P., Anderson, H.J., Le Maitre, D.C., Kotze, I.M., Ndala, S., Brown, B. and Rapholo, M.B (2004). Costs and benefits of biological control of invasive alien plants: case studies from South Africa: working for water. *South African Journal of Science* 100, 113-122

Is the virus present in Australia? (New Question)

(A) Data collected to date has not detected the carp virus (CyHV-3) in Australian waterways. However, additional sampling as part of the National Carp Control Plan will explore this possibility in more detail. The two most closely related viruses to CyHV-3 are reported to be present in Australian waterways. They are CyHV-1 (carp pox virus) which is carp specific, but not particularly contagious and only lethal to small juvenile fish, and CyHV-3 (goldfish hematopoietic necrosis herpesvirus) that only affects goldfish (*Carassius auratus*).

(B) Data collected to date has not detected the carp virus (CyHV-3) in Australian waterways, and additional sampling under the National Carp Control Plan explore this possibility in more detail. PCR surveys of 849 carp from eastern Australia failed to detect any evidence of CyHV-3 being present in Australian carp populations (McColl and Crane (2013). This preliminary work also did not detect the

presence of the two most closely related viruses to CyHV-3 : CyHV-1 (carp pox virus) which is carp specific, but not particularly virulent and only lethal to small juvenile fish, and CyHV-3 (goldfish hematopoietic necrosis herpesvirus) that only affects goldfish (*Carassius auratus*).

Additional sampling under the NCCP will explore whether CyHV-3 is present in Australia in more detail, and will also look for presence of other viruses that may cross react or recombine with CyHV-3 if released into Australian waterways.

References

McColl KA and Crane MStJ (2013). Cyprinid herpesvirus 3, CyHV-3: its potential as a biological control agent for carp in Australia. PestSmart Toolkit publication, Invasive Animals Cooperative Research Centre, Canberra, Australia.

Stephens FJ, Raidal SR and Jones B (2004) Haematopoietic necrosis in a goldfish (*Carassius auratus*) associated with an agent morphologically similar to herpesvirus. *Aust Vet J* 82:167-169.

How does the virus 'work'? (already on the website)

(A) The carp virus is highly contagious for carp and is mostly transferred through carp-to-carp contact.

While physical contact between infected and non-infected carp provides the most effective transmission route, carp can also become infected simply by swimming in the same waterbody as infected individuals. The carp virus also infects and kills carp most effectively within a certain temperature range (approximately 16-28°C). Further work under the National Carp Control Plan on viral transmission will inform understanding of the virus' epidemiology.

The carp virus is present in some 33 countries worldwide. The NCCP will draw on international experience as well as the research currently being commissioned to look specifically at Australian waterways and our carp populations. The NCCP will also use mathematical modelling to inform development of a release and clean up strategy.

(B) The primary source of entry for CyHV-3 in carp is via the skin and gills (Hedrick *et al.*, 2000; Costes *et al.*, 2009), through direct fish to fish transmission (Costes *et al.*, 2009), or indirectly through contact with contaminated fish faeces (Dishon *et al.*, 2005) or other fomites (i.e. objects to which viral particles adhere) (Minamoto *et al.*, 2011; Minamoto *et al.*, 2012).

The virus then rapidly spreads to the kidney, spleen, fins, intestine, and brain (Gilad *et al.*, 2004). Within the optimal temperature range, the course of infection in carp is that fish cease feeding within 3 days post exposure (dpe) and become lethargic. They then either lie at the bottom of the tank, or gather close to the water inlet or sides of the pond and gasp at the surface of the water.

Evidence of gill necrosis coupled with increased mucous secretion can present at approximately 3 dpe (Rakus *et al.*, 2013), and these are the most consistent gross clinical signs of disease. Uncoordinated movements, erratic swimming, and twitching may occasionally be seen in very small fish (4 – 10 cm). Death occurs within 3 – 4 days after the onset of clinical signs of disease (i.e. from about 7 dpe), with most mortality occurring between 8 – 12 dpe. Loss of function in the skin, gills, kidney and gut probably account for death of the fish, but secondary bacterial, parasitic or fungal infections are also common among infected fish and often contribute to mortalities.

While transmission via water is one means through which the virus enters a carp's body, primarily via the skin and gills (Hedrick *et al.*, 2000), direct fish to fish transmission is also possible via the skin (Costes *et al.*, 2009). Indirect transmission due to the persistence of CyHV-3 in fish faeces (Dishon *et al.*, 2005), plankton (Minamoto *et al.*, 2011), freshwater mussels and crustaceans (Kielpinski *et al.*, 2010) has also been reported. The virus may also enter via oral mucosa when fish feed on CyHV-3 infected tissue (Fournier *et al.*, 2012).

Breeding sites and aggregations are postulated to be the primary location and time of transmission of CyHV-3 within populations (Uchii *et al.*, 2011; Raj *et al.*, 2011; McColl *et al.*, 2014). Within Australia there is a steadily improving understanding of carp ecology (Brown *et al.*, 2005; Gilligan and Asmus, 2012). In particular, the identification of discrete hotspots of carp recruitment throughout the Murray-Darling Basin offers opportunities for the targeted control of carp populations. An epidemiological model for the Lachlan River catchment has been developed that takes account of viral, host and environmental factors to inform development of a release and clean up strategy.

Improving this model's capacity to predict viral efficacy and transmission patterns in Australian carp populations requires a more complete understanding of viral latency. Latency experiments are planned as part of the NCCP research program. It is proposed that the Lachlan model, incorporating the effects of latency, will be expanded to a Murray-Darling Basin scale under the National Carp Control Plan, to inform an implementation strategy to deliver maximum impact on carp.

References

- Brown, P., Sivakumaran, K. P., Stoessel, D. and Giles, A. (2005). Population biology of carp (*Cyprinus carpio* L.) in the mid-Murray River and Barmah Forest Wetlands, Australia. *Marine and Freshwater Research* 56, 1151-1164.
- Costes, B., Raj, V. S., Michel, B., Fournier, G., Thirion, M., Gillet, L., Mast, J., Liefbrig, F., Bremont, M. and Vanderplasschen, A. (2009). The major portal of entry of koi herpesvirus in *Cyprinus carpio* is the skin. *Journal of virology*, 83, 2819-2830.
- Dishon, A., Perelberg, A., Bishara-Shieban, J., Ilouze, M., Davidovich, M., Werker, S. and Kotler, M. (2005). Detection of carp interstitial nephritis and gill necrosis virus in fish droppings. *Applied and Environmental Microbiology*, 71, 7285-7291.
- Fournier, G., Boutier, M., Stalin Raj, V., Mast, J., Parmentier, E., Vanderwalle, P., Peeters, D., Liefbrig, F., Farnir, F. and Gillet, L. (2012). Feeding *Cyprinus carpio* with infectious materials mediates cyprinid herpesvirus 3 entry through infection of pharyngeal periodontal mucosa. *Vet Res*, 43.
- Gilad, O., Yun, S., Zagmutt-Vergara, F. J., Leutenegger, C. M., Bercovier, H. and Hedrick, R. P. (2004). Concentrations of a koi herpesvirus (KHV) in tissues of experimentally infected *Cyprinus carpio* koi as assessed by real-time TaqMan PCR. *Diseases of Aquatic Organisms*, 60, 179-187.
- Gilligan, D. and Asmus, M. (2012). 'Identifying significant hotspots of carp recruitment offers opportunities for the control of carp populations'. In: Fulton, W. and Hall, K., eds. *Forum Proceedings: Carp management in Australia — state of knowledge, 2012* Melbourne. Pestsmart.
- Hedrick, R., Gilad, O., Yun, S., Spangenberg, J., Marty, G., Nordhausen, R., Kebus, M., Bercovier, H. and Eldar, A. (2000). A herpesvirus associated with mass mortality of juvenile and adult koi, a strain of common carp. *Journal of Aquatic Animal Health*, 12, 44-57.

Kielpinski, M., Kempter, J., Panicz, R., Sadowski, J., Schütze, H., Ohlemeyer, S. and Bergmann, S. M. (2010). Detection of KHV in freshwater mussels and crustaceans from ponds with KHV history in common carp (*Cyprinus carpio*). *The Israeli Journal of Aquaculture*, 62(1), 28-37.

McColl, K., Cooke, B. and Sunarto, A. (2014). Viral biocontrol of invasive vertebrates: Lessons from the past applied to cyprinid herpesvirus-3 and carp (*Cyprinus carpio*) control in Australia. *Biological Control*, 72, 109-117.

Minamoto, T., Honjo, M. N., Yamanaka, H., Tanaka, N., Itayama, T. and Kawabata, Z. I. (2011). Detection of cyprinid herpesvirus-3 DNA in lake plankton. *Research in Veterinary Science*, 90, 530-532.

Minamoto, T., Honjo, M. N., Yamanaka, H., Uchii, K. and Kawabata, Z. I. (2012). Nationwide cyprinid herpesvirus 3 contamination in natural rivers of Japan. *Research in Veterinary Science*, 93, 508-514.

Raj, S. V., Fournier, G., Rakus, K., Ronsmans, M., Ouyang, P., Michel, B., Delforges, C., Costes, B., Farnir, F. and Leroy, B. (2011). Skin mucus of *Cyprinus carpio* inhibits cyprinid herpesvirus 3 binding to epidermal cells. *Veterinary research*, 42, 1-10.

Rakus, K., Ouyang, P., Boutier, M., Ronsmans, M., Reschner, A., Vancsok, C., Jazowiecka-Rakus, J. and Vanderplasschen, A. (2013). Cyprinid herpesvirus 3: an interesting virus for applied and fundamental research. *Vet Res*, 44, 85.

Uchii, K., Telschow, A., Minamoto, T., Yamanaka, H., Honjo, M. N., Matsui, K. and Kawabata, Z. I. (2011). Transmission dynamics of an emerging infectious disease in wildlife through host reproductive cycles. *ISME*, 5, 244-251.

Can other species transmit the virus? (like question already on the website – Will the virus affect other species?)

(A) No. The carp virus only infects, and affects, common carp. However, other species can carry and transmit the virus without being infected. To survive, the virus must be transmitted from carp to carp by direct contact between an infected carp and uninfected carp. After being “shed” by infected carp, the carp virus can only survive in the water for around 3 days. If the virus does not infect another carp within that time, the virus will die.

While in the water, the virus may also stick to non-carp fish, sediment, plankton or other organisms/items, and may infect carp that come in contact with it. The virus does not infect these non-carp species or items - they simply carry the virus - much the same way as your dog could carry the human common cold virus on its fur if you sneezed into your hand and then patted it.

(B) The virus only infects, and affects, common carp (McColl et al 2016, Hedrick et. al 2000). Some earlier studies have suggested other species can be infected by CyHV-3 (Davidovich et al. 2007, Bergmann et al. 2010), however did not use appropriate methods to confirm virus multiplication, and so infection.

Transmission is most effective via direct carp to carp transmission (Costes et al., 2009), however transmission can also occur indirectly through contact with contaminated fish faeces (Dishon et al., 2005) or other fomites (i.e. objects to which viral particles adhere) (Minamoto et al., 2011; Minamoto et al., 2012).

References

- Davidovich-Cohen, Maya & Dishon, Arnon & Ilouze, M & Kotler, M. (2007). Susceptibility of cyprinid cultured cells to cyprinid herpesvirus 3. *Archives of virology*. 152. 1541-6. 10.1007/s00705-007-0975-4.
- Bergmann SM, Riechardt M, Fichtner D, Kempter J (2010) Investigation on the diagnostic sensitivity of molecular tools used for detection of koi herpesvirus. *J Virol Meth* 163: 229-233.
- Hedrick, R. P., Gilad, O., Yun. S., Spangenberg, J. V., Marty, G. D., Nordhausen, R. W., Kebus, M. J., Bercovier, H. and Eldar, A. (2000). A herpesvirus associated with mass mortality of juvenile and adult koi, a strain of common carp. *Journal of Aquatic Animal Health* 12, 44 – 57.
- Mccoll, K. A., Sunarto, A., Slater, J., Bell, K., Asmus, M., Fulton, W., Hall, K., Brown, P., Gilligan, D., Hoad, J., Williams, N. and Crane, M. St J. (2016). Cyprinid herpesvirus 3 as a potential biological control agent for carp (*Cyprinus carpio*) in Australia: susceptibility of non-target species. *Journal of Fish Diseases*, 40, 1141-1153.
- Costes, B., Raj, V. S., Michel, B., Fournier, G., Thirion, M., Gillet, L., Mast, J., Liefbrig, F., Bremont, M. & Vanderplasschen, A. 2009. The major portal of entry of koi herpesvirus in *Cyprinus carpio* is the skin. *Journal of virology*, 83, 2819-2830.
- Dishon, A., Perelberg, A., Bishara-Shieban, J., Ilouze, M., Davidovich, M., Werker, S. & Kotler, M. 2005. Detection of Carp Interstitial Nephritis and Gill Necrosis Virus in Fish Droppings. *Applied and Environmental Microbiology*, 71, 7285–7291.
- Minamoto, T., Honjo, M. N., Yamanaka, H., Tanaka, N., Itayama, T. & Kawabata, Z. I. 2011. Detection of cyprinid herpesvirus-3 DNA in lake plankton. *Research in Veterinary Science*, 90, 530-532.
- Minamoto, T., Honjo, M. N., Yamanaka, H., Uchii, K. & Kawabata, Z. I. 2012. Nationwide Cyprinid herpesvirus 3 contamination in natural rivers of Japan. *Research in Veterinary Science*, 93, 508-514.

Aren't carp and native catfish closely related? Does this mean that catfish could be vulnerable to the virus? (New Question)

(A) No. While the group of fish species that catfish belong to is the most closely related to the common carp group, catfish and carp are not closely related at all. This means that catfish species native to Australia are not susceptible to the carp virus. CSIRO research has confirmed that two species of Australian native catfish were not infected, or affected, by the carp virus.

(B) The most closely related taxonomic order to the one carp belongs to is Siluriformes (Catfish), leading some to question whether their level of relatedness is sufficient to create risk of species jump.

To understand this question, a brief journey into the science of phylogenetics is necessary. Phylogenetics investigates the evolutionary origins and relationships of organisms at varying levels of taxonomic organisation. Thus, phylogenetic 'relatedness' among organisms is defined by how recently (in evolutionary terms) two or more groups diverged from a common ancestor and emerged as taxonomic entities recognisable in their modern forms.

Carp and catfish belong to two distinct taxonomic orders, Cypriniformes and Siluriformes respectively. Cypriniformes and Siluriformes form part of a broader phylogenetic grouping of fishes called the Otophysi. The two other otophysian orders are Gymnotiformes (electric eels and American knifefishes), and Characiformes, which includes piranhas and tetras.

Otophysi forms one of two series in the superorder Ostariophysi. A superorder is a fine-scale taxonomic ranking above Order and below Class (see below), and encompasses greater technical detail than is required for a general understanding of the evolutionary relationship between carp and catfish.

The Otophysi are generally considered to be monophyletic, meaning that, in the distant evolutionary past, they arose from a single common ancestor before diverging into different species and moving across the Earth's surface to occupy their present geographical ranges (Briggs, 2005). Otophysian evolution has been debated, and is complicated by a span of more than 100 million years for which no fossil evidence has been discovered (Briggs, 2005; Santini et al., 2009; Nakatani et al., 2011; Chen et al., 2013). Nonetheless, molecular evidence suggests that Cypriniformes emerged as a recognisable taxonomic entity between 130 and 186 million years ago, while Siluriformes diverged somewhat earlier, between 162 and 198 million years ago (Nakatani et al., 2011). The fossil record provides relatively more recent divergence dates, with the oldest-known cypriniform fossil being about 61 million years old and the oldest siluriform fossil being between 83.5 and 88.6 million years old (Chen et al., 2013). Divergence inferences from the fossil record can only be based on available fossils and cannot account for undiscovered material or species that no left fossilised remains. Consequently, divergence times estimated from the fossil record are usually underestimated (Anderson, 2012). The most recent common ancestor of carp and catfish therefore lived tens, and perhaps hundreds, of millions of years ago. Thus, catfish are indeed the Australian native fishes most closely related to carp, but this not imply that the evolutionary relationship is particularly close.

Broad description of taxonomic relatedness

The degree of taxonomic relatedness between carp and catfish may be contextualised by a general overview of the taxonomic hierarchy (the scheme scientists use to classify living things). From broadest (i.e. least related) to narrowest (i.e. an individual species), the taxonomic hierarchy is:

Kingdom: Kingdom is the broadest level of biological classification. For example, all multicellular animals, whether mosquitos or elephants, are classified into the Kingdom Animalia. Taxonomists in Australia, Great Britain, and several other countries generally recognise five kingdoms; Animalia, Plantae, Fungi, Protista, and Monera, while American taxonomists sometimes divide the Kingdom Monera (bacteria) into two kingdoms (Archaeabacteria and Eubacteria), making a total of six kingdoms.

Phylum: The Phylum is another very broad level of classification. For example, the Phylum Chordata includes all vertebrates and some invertebrates. The defining features of chordates (animals within the Phylum Chordata) are possession, at some stage in the life-history, of:

- ☐ Pharyngeal slits
- ☐ A dorsal nerve chord
- ☐ A notochord
- ☐ A post-anal tail

Thus, human beings (and indeed all mammals), birds, reptiles, amphibians, fish, and some invertebrates, such as sea squirts, all belong in the Phylum Chordata.

Class: There are approximately 107 animal classes, although this number can vary based on taxonomic revisions. As an example of the degree of relatedness implied by this taxonomic rank, human beings belong in the class Mammalia, along with all other mammals (i.e. whales, seals, dolphins, cats, dogs, horses, cows, mice etc).

Focussing specifically on fish, the class Actinopterygii, to which carp and catfish both belong, includes all fishes apart from sharks, rays, and jawless fishes (lampreys, hagfish). Thus, for example, carp, catfish, barramundi, all tunas, marlin, mullet, gudgeons, gobies, coral trout, Murray cod, and approximately 24,000 other fish species are all actinopterygians.

Order: Order is the taxonomic rank at which carp (order Cypriniformes) and catfish (order Siluriformes) diverge. To place the concept of order in context, human beings belong in the order Primates, along with lemurs, lorises, tarsiers, monkeys, and apes. Domestic dogs belong in the order Carnivora, along with cats (including the big cats), seals, walruses, weasels, skunks, hyaenas, and many other predatory mammals.

Family: At this taxonomic rank, carp and catfish have now diverged. The order Cypriniformes is divided into 11-12 families, with common carp (*Cyprinus carpio*) belonging to family Cyprinidae. The order Siluriformes, to which catfish belong, contains more than 30 families. The two catfish species tested for susceptibility to Cyprinid herpesvirus 3 belong to two separate families, Ariidae (forktail catfishes) and Plotosidae (eel-tailed catfishes).

Genus: Organisms sharing this taxonomic rank are closely-related. Introduced common carp are the only species from the genus *Cyprinus* occurring in Australia. Human beings belong to the genus *Homo*. Modern humans (i.e. us) are the only extant (surviving) representatives of this genus.

Species: Individuals within a species can interbreed to produce fertile offspring. The common carp is a species; *Cyprinus carpio*, while modern humans are also a species; *Homo sapiens*. A scientific name for a species thus comprises the genus name (e.g. *Cyprinus*), which is shared by all species within that genus, and the specific epithet (e.g. *carpio*). Taxonomists are sometimes interested in defining sub-species, a finer classification again, but this level of detail is unnecessary for the present discussion.

To summarise, carp and catfish are as closely related as Humans and Lemurs (that is to say, they are not particularly closely related).

References

Anderson, J.S. (2012). Fossils, molecules, divergence times, and the origin of Salamandroidea. *Proceedings of the National Academy of Sciences*, 109, <http://www.pnas.org/cgi/doi/10.1073/pnas.1202491109>

Briggs, J.C. (2005). The biogeography of otophysan fishes (Ostariophysi: Otophysi): a new appraisal. *Journal of Biogeography*, 32, 287 – 294.

Chen, W-J., Lavoué, S. & Mayden, R.L. (2013). Evolutionary origin and early biogeography of otophysan fishes (Ostariophysi: Teleostei). *Evolution*, 67, 2218 – 2239.

Mccoll, K. A., Sunarto, A., Slater, J., Bell, K., Asmus, M., Fulton, W., Hall, K., Brown, P., Gilligan, D., Hoad, J., Williams, N. and Crane, M. St J. (2016). Cyprinid herpesvirus 3 as a potential biological

control agent for carp (*Cyprinus carpio*) in Australia: susceptibility of non-target species. *Journal of Fish Diseases*, 40, 1141-1153.

Nakatani, M., Miya, M., Mabuchi, K., Saitoh, K. & Nishida, M. (2011). Evolutionary history of Ostophysi (Teleostei), a major clade of the modern freshwater fishes: Pangaeian origin and Mesozoic radiation. *BMC Evolutionary Biology*, 11: 177 <http://www.biomedcentral.com/1471-2148/11/177>

Santini, F., Harmon, L.J., Carnevale, G. & Alfaro, M.E. (2009). Did genome duplication drive the origin of teleosts? A comparative study of diversification in ray-finned fishes. *BMC Evolutionary Biology* 9:194 doi:10.1186/1471-2148-9-194

Is the aim to eradicate carp? (already on the website)

(A) No. It is important to note that the carp virus alone will not eradicate all carp from Australia. Australia's experience with two other viruses that were introduced to control rabbits has reinforced that lesson. Neither the myxomatosis virus or the rabbit calicivirus could eradicate rabbits.

What viruses *can* do is cause a substantial drop in the numbers of their target species and reduce the ecological impacts caused by that species. Earlier studies have suggested carp start impacting on ecosystem health at densities of 100–174 kg/ha. Studies have shown that carp density is currently much higher in some areas. Biological control aims to reduce carp density below levels known to cause environmental harm.

The results of biological control can be further enhanced using additional control measures. Researchers are currently considering other (genetic) approaches that may complement possible use of the carp virus. Modelling conducted to date suggests that combined use of virus and genetic approaches is likely to be one of the best strategies to reduce carp impacts in Australia. If carp could be eliminated using an integrated approach, then the carp virus would disappear too (because the virus will only grow in carp, and will not survive in the environment for more than about 3 days). Therefore, the carp virus would only persist in Australia while carp remain a problem.

(B) The aim of the NCCP is to develop an integrated program of measures able to reduce carp density below threshold levels known to cause environmental harm. Managing an invasive species below a density threshold, above which impacts to environmental values are unacceptable, is a key component of Integrated Pest Management (Braysher and Saunders, 2003).

Previous research has demonstrated that carp begin to impact on water turbidity (muddiness) when density exceeds 50–75 kg/ha (Zambrano and Hinojosa, 1999; Vilizzi *et al.*, 2014), and that noticeable shifts from a clear to a turbid water state occurs at 200–300 kg/ha (Williams *et al.*, 2002; Parkos *et al.*, 2003; Haas *et al.*, 2007; Matsuzaki *et al.*, 2009).

Declines in aquatic vegetation cover and detrimental effects on aquatic macrophytes have been reported at carp densities ranging from 68 to 450 kg/ha (Hume *et al.*, 1983; Fletcher *et al.*, 1985; Osborne *et al.*, 2005; Pinto *et al.*, 2005; Bajer *et al.*, 2009; Vilizzi *et al.*, 2014) and a decline in native waterfowl use was reported when carp densities reached ~100 kg/ha (Bajer *et al.*, 2009). These impacts stem largely from the carp's benthic feeding behaviour (Sibbing *et al.*, 1986) and are most commonly reported in shallow off-stream habitats (Parkos *et al.*, 2003) where carp congregate (Smith and Walker 2004a; Stuart and Jones 2006a, 2006b).

A number of studies have suggested that threshold densities for carp to be 100–174 kg/ha (Haas *et al.* 2007; Bajer *et al.* 2009; Matsuzaki *et al.* 2009), which are much lower than historic estimates of

450 kg/ha (Fletcher *et al.*, 1985). Some researchers have suggested threshold densities to be even lower; Brown and Gilligan (2014) modelled that an integrated pest control approach would be required to reduce carp densities in the Lachlan River Catchment below the estimated threshold density (88kg/ha).

There are many examples where MDB carp populations have exceeded these threshold levels—Moir Lake: 190 kg/ha (Brown *et al.*, 2003); a range of billabongs: 150–690 kg/ha (Hume *et al.*, 1983); Bogan River: 690 kg/ha (Reid and Harris, 1997); and the Campaspe irrigation channels: up to 619 kg/ha (Brown, *et al.* 2003).

The NCCP research program will help improve estimates of carp biomass in Australia. This will assist in considering whether reduction of carp biomass to below threshold levels is feasible. Even though available evidence suggests that the virus may be highly effective in killing carp, there will be a need to use an integrated program of measures to ensure long-term results. This will be an area of focus under the NCCP.

References

Bajer, P. G., Sullivan, G. and Sorensen, P. W. (2009). Effects of a rapidly increasing population of common Carp on vegetative cover and waterfowl in a recently restored Midwestern shallow lake. *Hydrobiologia*, 632, 235–245.

Braysher, M. and Saunders, G. (2003). *PESTPLAN – a guide to setting priorities and developing a management plan for pest animals*. Bureau of Rural Sciences and the National Heritage Trust, Canberra, ACT.

Brown, P. and Gilligan, D. (2014). Optimising an integrated pest-management strategy for a spatially structured population of common carp (*Cyprinus carpio*) using meta-population modelling. *Marine and Freshwater Research*, 65, 538–550.

Brown, P., Sivakumaran, K. P., Stoessel, D., Giles, A., Green, C. and Walker, T. (2003). *Carp population biology in Victoria*. Marine and Freshwater Resources Institute, Department of Primary Industries, Snobs Creek, Victoria.

Fletcher, R. F., Morison, A. K. and Hume, D. J. (1985). Effects of Carp (*Cyprinus carpio* L.) on communities of aquatic vegetation and turbidity of waterbodies in the lower Goulburn River basin. *Australian Journal of Marine and Freshwater Research*, 36, 311–327.

Haas, K., Köhler, U., Diehl, S., Köhler, P., Dietrich, S., Holler, S., Jensch, A., Niedermaier, M. and Vilsmeier, J. (2007). Influence of fish on habitat choice of water birds: a whole-system experiment. *Ecology* 88, 2915–2925.

Hume, D. J., Fletcher, A. R. and Morison, A. K. (1983). *Carp Program Report No. 10. Final Report*. Arthur Rylah Institute for Environmental Research, Fisheries and Wildlife Division, Ministry for Conservation, Melbourne, Victoria.

Matsuzaki, S., Usio, N., Takamura, N. and Washitani, I. (2009). Contrasting impacts of invasive engineers on freshwater ecosystems: an experiment and meta-analysis. *Oecologia*, 158, 673–686.

- Osborne, M., Ling, N. and Hicks, B. (2005). 'Abundance and movement of koi carp (*Cyprinus carpio haematopterus*) in the lower Waikato River system'. In: *Proceedings of the 13th Australasian Vertebrate Pest Conference*, Te Papa, Wellington, New Zealand, 2–6 May 2005, pp. 56.
- Parkos, J. J. III, Santucci, V. J. Jr, and Wahl, D. W. (2003). Effects of adult common Carp (*Cyprinus carpio*) on multiple trophic levels in shallow mesocosms. *Canadian Journal of Fisheries and Aquatic Sciences*, 60, 182–192.
- Pinto, L., Chandrasena, N., Pera, J., Hawkins, P., Eccles, D. and Sim, R. (2005). Managing invasive Carp (*Cyprinus carpio* L.) for habitat enhancement at Botany Wetlands, Australia. *Aquatic Conservation: Marine and Freshwater Ecosystems*, 15, 447–462.
- Reid, D. D. and Harris, J. H. (1997). 'Estimation of total abundance: the calibration experiments'. In: Harris, J.H. and Gehrke, P.C. (Eds) *Fish and Rivers in Stress – The NSW Rivers Survey*, pp. 63–760. NSW Fisheries Office of Conservation, Cronulla, NSW; and the Cooperative Research Centre for Freshwater Ecology, Canberra, ACT.
- Sibbing, F. A., Osse, J. W. M. and Terlouw, A. (1986). Food handling in the Carp (*Cyprinus carpio*): its movement patterns, mechanisms and limitations. *Journal of the Zoological Society of London*, 210, 161–203.
- Smith, B. B., and Walker, K. F. (2004a). Spawning dynamics of common carp in the River Murray, South Australia, shown by macroscopic and histological staging of gonads. *Journal of Fish Biology*, 64, 336–354.
- Stuart, I. G. and Jones, M. J. (2006a). Movement of common Carp, *Cyprinus carpio*, in a regulated lowland Australian river: implications for management. *Fisheries Management and Ecology*, 13, 213–219.
- Stuart, I. G. and Jones, M. J. (2006b). Large, regulated forest floodplain is an ideal recruitment zone for non-native common carp (*Cyprinus carpio* L.). *Marine and Freshwater Research*, 57, 333–347.
- Vilizzi, L. Thwaites, L., Smith, B., Nicol, J. and Madden, C. (2014). Ecological effects of common carp (*Cyprinus carpio*) in a semi-arid floodplain wetland. *Marine and Freshwater Research*, 65, 802–817.
- Williams, A. E., Moss, B. and Eaton, J. (2002). Fish induced macrophyte loss in shallow lakes: top-down and bottom-up processes in mesocosm experiments. *Freshwater Biology*, 47, 2216–2232.
- Zambrano, L. and Hinojosa, D. (1999). Direct and indirect effects of carp (*Cyprinus carpio*) on macrophytes and benthic communities in experimental shallow ponds in central Mexico. *Hydrobiologia* 408/409, 131–138.

If infected by the virus, could carp change their behaviour to reduce mortality and impact the overall effectiveness of the control program? (New Question)

(A) While possible, research being undertaken as part of the National Carp Control Plan will allow this risk to be better understood. A previous study (Rakus et al (2017) reported that carp infected with the carp virus appeared to change behaviour in lab trials and would congregate around heating elements. On this basis, it was thought that carp may seek out warm water refuges within Australian waterways, reducing the overall program effectiveness. Researchers are developing models to understand Australian waterways including water quality, flow and connectivity, how carp live and

behave in those waterways, and how the carp virus impacts on carp populations. As part of this work, researchers will also consider the impact of any behavioural change in carp during infection, including identifying the presence of warm water refuges, where they might occur and the role they may play in reducing overall effectiveness of the program.

(B) A previous study (Rakus et al (2017) reported that carp infected with the carp virus appeared to change behaviour in lab trials, and would congregate around heating elements in trials. On this basis they postulated that carp may seek out warmwater refuges within Australian waterways, in doing so reducing overall program effectiveness. This is a possibility, however is also being studied under the NCCP to enable this risk to be better understood.

Researchers under the NCCP are conducting epidemiological modelling to better understand patterns of viral transmission, spread, and mortality. Epidemiological knowledge will also be required to predict the locations and environmental conditions in which major carp mortalities are likely, and equally, areas where sub-optimal outcomes may be experienced. The predictive capacity necessary for planning both release and clean-up will be provided primarily by the NCCP's epidemiological modelling project.

The project uses coupled epidemiological, hydrological, and ecological models to investigate the carp virus's likely behaviour in Australian ecosystems. The epidemiological modelling team is currently focussing on the crucial, and inter-related, roles that water temperature, carp physiological condition (especially spawning-related stress), and carp density are likely to play in transmission and mortality. To maximise the model's predictive capacity, final modelling will be based on empirical water temperature, biomass, and virus transmission data.

References

Rakus K, Ronsmans M, Forlenza M, et al. Conserved Fever Pathways across Vertebrates: A Herpesvirus Expressed Decoy TNF- α Receptor Delays Behavioral Fever in Fish. *Cell Host & Microbe*. 2017;21(2):244-253. doi:10.1016/j.chom.2017.01.010.

Won't this be like Cane toads? (already on website)

(A) The introduction of cane toads (*Rhinella marina*) to Australia in the 1930s is one of the most notable examples of poor early biological control practice.

Introduced before Australia had mature biosecurity legislation or environmental risk assessment based regulations for importing exotic organisms, the cane toad was released based on overseas commentary and without any direct assessment of its likely effectiveness as a biocontrol agent on the targeted cane beetle.

After release, it quickly became apparent that the toxic toads did not effectively prey on the cane beetle, but were devastatingly efficient in preying Australian native species. Free from natural predators, and with abundant food supplies, toad numbers and distribution quickly exploded, creating the ecological disaster we see today. Today, Australia's biosecurity regulatory environment is world class and nothing like this could legally happen again.

Under these regulations, if carp biocontrol is used, it will be informed by rigorous planning and world-class risk assessment processes based on robust evidence to indicate carp biocontrol can be done safely and effectively.

(B) The introduction of cane toads (*Rhinella marina*) to Australia in the 1930s is one of the most notable examples of early poor biological control practice.

Introduced before Australia had any mature biosecurity legislation, or environmental risk assessment based regulations for importing exotic organisms, it was released based on overseas commentary and without direct assessment of its likely effectiveness as a biocontrol agent on the targeted cane beetle.

After release it quickly came to light that the toxic toads did not effectively prey on the cane beetle, though were devastatingly efficient in preying on a diversity of Australian native species. Free from natural predators, and with abundant food supplies, toad numbers and distribution quickly exploded, creating the ecological disaster we see today. The Australian biosecurity regulatory environment is now world class and nothing similar could legally happen again.

Under these regulations, if carp biocontrol is used it will be informed by robust planning, and careful risk assessment processes based on robust evidence to indicate carp biocontrol can be done safely and effectively.

Australia's National Carp Control Plan is operating in a completely different era in which the efficacy and host specificity of the carp virus on common carp have been extensively studied and peer reviewed. Research conducted to date demonstrates that common carp present in Australia are highly vulnerable to the carp virus, that the virus only causes disease in European carp (also known as common carp), and that all other species are not susceptible.

Effectiveness on European carp

Research proposed under the National Carp Control Plan will further build our understanding of possible risks and benefits of carp biocontrol. A thorough, systematic quantitative assessment of social, economic and ecological risks is proposed, in addition to a robust and transparent process for quantifying expected benefits and costs of carp biocontrol in Australia.

The disease caused by the carp virus is highly contagious and extremely virulent with mortality that can reach >80% in naïve carp populations in circumstances where water temperature, carp densities and virus concentrations are optimal (Hedrick *et al.*, 2000; Gilad *et al.*, 2003; Sunarto and Cameron, 2005; Matsui *et al.*, 2008; OIE, 2015). It is important to note though that findings of a recent study examining case studies in North America (Thresher *et al.* 2018) demonstrated that effectiveness is likely to diminish significantly when the above-described precursor conditions are not present, reinforcing the importance of timing for any possible release.

Safety for non-target species

Research conducted to date demonstrates that the carp virus is specific to common carp and its ornamental variety, koi carp (Hedrick *et al.*, 2000), although susceptibility varies across carp strains (OIE, 2014). A broad range of other fish species has been tested with varying degrees of rigour; none developed the disease (Bretzinger *et al.*, 1999; Perelberg *et al.*, 2003; Haenen *et al.*, 2004; Haenen

and Hedrick, 2006; Uchii *et al.*, 2009; OIE, 2015). Furthermore, no CyHV-3-associated mortalities have been reported in any fish or other animal anywhere in the world (Gotesman *et al.*, 2013, Michel *et al.*, 2010, OIE, 2012).

The CSIRO-Australian Animal Health Laboratory has conducted susceptibility trials using bath and intra-peritoneal injection methods alongside carp controls (McColl *et al.*, 2016). The species selected represent a broad range of taxa with a breadth of evolutionary relationships with the order Cypriniformes, including:

- ☐ the native siluriform blue catfish (*Neoarius graeffei*) and freshwater eel-tailed catfish (*Tandanus tandanus*);
- ☐ the anguilliform short-finned eel (*Anguilla australis*);
- ☐ the perciform Murray cod (*Maccullochella peelii*), golden perch (*Macquaria ambigua*), silver perch (*Bidyanus bidyanus*);
- ☐ the smaller-bodied olive perchlet (*Ambassis agassizii*) and carp gudgeon (*Hypseleotris* sp.)
- ☐ the native salmoniform common jollytail (*Galaxias maculatus*) and Australian smelt (*Retropinna semoni*);
- ☐ the introduced rainbow trout (*Onchorhynchus mykiss*),
- ☐ the native atheriniform crimson-spotted rainbowfish (*Melanotaenia duboulayi*);
- ☐ the native mugiliform sea mullet (*Mugil cephalus*);
- ☐ the native clupeiform bony herring (*Nematalosa erebi*);
- ☐ the native petromyzontiform Short-headed lamprey (*Mordacia mordax*).

A representative mammal (mouse), bird (chicken), crustacean (yabby *Cherax destructor*), reptiles (eastern water dragon, *Intellagama lesueurii*) and Macquarie short-necked turtle (*Emydura macquarii*). The amphibians Peron's tree frog (*Litoria peroni*) and spotted marsh frog (*Limnodynastes tasmaniensis*) have also been tested.

None of these species showed any signs of infection by CyHV-3.

Research conducted to date also demonstrates that European carp present in Australia are highly vulnerable to the carp virus, that the virus only causes disease in European carp, and that all other species are not susceptible.

Research proposed under the National Carp Control Plan will further build our understanding of possible risks and benefits of carp biocontrol. A thorough, systematic quantitative assessment of social, economic and ecological risks is proposed, in addition to a robust and transparent process for quantifying expected benefits and costs of carp biocontrol in Australia.

The carp virus will also not be released until it has been independently evaluated by regulators in two government departments against two regulated review processes and assessed under the Biological Control Act and approved by Chief Veterinary Officers of all jurisdictions

References

Bretzinger, A., Fischer-Scherl, T., Oumouna, M., Hoffman, R. and Truyen, U. (1999). Mass mortalities in koi carp, *Cyprinus carpio*, associated with gill and skin disease. *Bulletin of the Eurasian Association of Fish Pathologists* 19, 182 – 185.

Gilad, O., Yun, S., Adkison, M. A., Way, K., Willits, N. H., Bercovier, H. and Hedrick, R. P. (2003). Molecular comparison of isolates of an emerging fish pathogen, koi herpesvirus, and the effect of

water temperature on mortality of experimentally infected koi. *Journal of General Virology* 84, 2661-2668.

Gotesman, M., Kattlun, J., Bergmann, S. M. and El-Matbouli, M. (2013). CyHV-3: the third cyprinid herpesvirus. *Diseases of Aquatic Organisms*, 105, 163-174.

Haenen, O. and Hedrick, R. (2006). Koi herpesvirus workshop. *Bulletin- European Association of Fish Pathologists*, 26.

Haenen, O., Way, K., Bergmann, S. M. and Ariel, E. (2004). The emergence of koi herpesvirus and its significance to European aquaculture. *Bulletin of the Eurasian Association of Fish Pathologists* 24, 293 – 307.

Hedrick, R. P., Gilad, O., Yun, S., Spangenberg, J. V., Marty, G. D., Nordhausen, R. W., Kebus, M. J., Bercovier, H. and Eldar, A. (2000). A herpesvirus associated with mass mortality of juvenile and adult koi, a strain of common carp. *Journal of Aquatic Animal Health* 12, 44 – 57.

Matsui, K., Honjo, M. I. E., Kohmatsu, Y., Uchii, K., Yonekura, R. and Kawabata, Z. I. (2008). Detection and significance of koi herpesvirus (KHV) in freshwater environments. *Freshwater Biology*, 53, 1262-1272.

Mccoll, K. A., Sunarto, A., Slater, J., Bell, K., Asmus, M., Fulton, W., Hall, K., Brown, P., Gilligan, D., Hoad, J., Williams, N. and Crane, M. St J. (2016). Cyprinid herpesvirus 3 as a potential biological control agent for carp (*Cyprinus carpio*) in Australia: susceptibility of non-target species. *Journal of Fish Diseases*, 40, 1141-1153.

Michel, B., Fournier, G., Lieffrig, F., Costes, B. and Vanderplasschen, A. (2010). Cyprinid herpesvirus 3. *Emerging Infectious Diseases*, 16, 1835 - 1843.

Perelberg, A., Smirnov, M., Hutoran, M., Diamant, A., Bejerano, Y. and Kotler, M. (2003). Epidemiological description of a new viral disease afflicting cultured *Cyprinus carpio* in Israel. *The Israeli Journal of Aquaculture*, 55(1), 5-12.

Sunarto, A. and Cameron, A. (2005). Response to mass mortality of carp: an Indonesian experience. *FAO fisheries proceedings*, 2005, 87-105.

Thresher, R.E., Allman, J. & Stremick-Thompson, L. (2018). Impacts of an invasive virus (CyHV-3) on established invasive populations of common carp (*Cyprinus carpio*) in North America. *Biological Invasions*, DOI: <https://doi.org/10.1007/s10530-017-1655-2>.

Uchii, K., Matsui, K., Iida, T. and Kawabata, Z. (2009). Distribution of the introduced cyprinid herpesvirus 3 in a wild population of common carp, *Cyprinus carpio* L. *Journal of Fish Diseases*, 32, 857-864.

World Organisation for Animal Health (OIE; 2014). Manual of diagnostic tests for aquatic animals.

World Organisation for Animal Health (OIE; 2015). World Animal Health Information Database (WAHID). http://www.oie.int/wahis_2/public/wahid.php

Are carp closely related to any Australian native fish? Could the virus jump species? (New Question)

(A) Bony fish, like all animal species, can be classified scientifically into groups of related species. For example, fish like trout and salmon belong to a group (the Salmoniformes) that is quite distinct from the group that includes sardines, pilchards and bony bream (the Clupeiformes), and different again from another group that includes flounder, sole and turbot (the Pleuronectiformes).

There are 38 different groups of bony fish, and carp belong to a group known as the Cypriniformes (or 'cyprinids' for short). Despite cyprinids being the group with the largest number of different freshwater species in the world, there are no native cyprinids in Australia - only imported varieties like goldfish, tench, roach, rosy barb, and carp.

The most closely related group of native fish to cyprinids in Australia is the Siluriformes, which includes the native catfish. The presence of barbels on these catfish is one reason why they are closely related, but overall, there are more differences than similarities between a catfish and a carp.

These differences were emphasised when CSIRO researchers tested the susceptibility of two different species of native catfish to the carp virus. There was absolutely no evidence that the virus infected, or affected, the native catfish.

(B) Viruses that have a capacity to infect a species other than their natural host will generally do so to a closely related species or species group. When considering risk posed by biological control of Common carp using Cyprinid herpesvirus 3 (CyHV-3) it is important to consider the degree of taxonomic relatedness to other species in Australia that might come into contact with the virus. The most closely related taxonomic order to the one carp belongs to is Siluriformes (Catfish), leading some to question whether their level of relatedness is sufficient to create risk of species jump.

To understand this question, a brief journey into the science of phylogenetics is necessary. Phylogenetics investigates the evolutionary origins and relationships of organisms at varying levels of taxonomic organisation. Thus, phylogenetic 'relatedness' among organisms is defined by how recently (in evolutionary terms) two or more groups diverged from a common ancestor and emerged as taxonomic entities recognisable in their modern forms.

Carp and catfish belong to two distinct taxonomic orders, Cypriniformes and Siluriformes respectively. Cypriniformes and Siluriformes form part of a broader phylogenetic grouping of fishes called the Otophysi. The two other otophysian orders are Gymnotiformes (electric eels and American knifefishes), and Characiformes, which includes piranhas and tetras.

Otophysi forms one of two series in the superorder Ostariophysi. A superorder is a fine-scale taxonomic ranking above Order and below Class (see below), and encompasses greater technical detail than is required for a general understanding of the evolutionary relationship between carp and catfish.

The Otophysi are generally considered to be monophyletic, meaning that, in the distant evolutionary past, they arose from a single common ancestor before diverging into different species and moving across the Earth's surface to occupy their present geographical ranges (Briggs, 2005). Otophysian evolution has been debated, and is complicated by a span of more than 100 million years for which no fossil evidence has been discovered (Briggs, 2005; Santini et al., 2009; Nakatani et al., 2011; Chen et al., 2013). Nonetheless, molecular evidence suggests that Cypriniformes emerged as a

recognisable taxonomic entity between 130 and 186 million years ago, while Siluriformes diverged somewhat earlier, between 162 and 198 million years ago (Nakatani et al., 2011). The fossil record provides relatively more recent divergence dates, with the oldest-known cypriniform fossil being about 61 million years old and the oldest siluriform fossil being between 83.5 and 88.6 million years old (Chen et al., 2013). Divergence inferences from the fossil record can only be based on available fossils and cannot account for undiscovered material or species that no left fossilised remains. Consequently, divergence times estimated from the fossil record are usually underestimated (Anderson, 2012). The most recent common ancestor of carp and catfish therefore lived tens, and perhaps hundreds, of millions of years ago. Thus, catfish are indeed the Australian native fishes most closely related to carp, but this not imply that the evolutionary relationship is particularly close.

Broad description of taxonomic relatedness

The degree of taxonomic relatedness between carp and catfish may be contextualised by a general overview of the taxonomic hierarchy (the scheme scientists use to classify living things). From broadest (i.e. least related) to narrowest (i.e. an individual species), the taxonomic hierarchy is:

Kingdom: Kingdom is the broadest level of biological classification. For example, all multicellular animals, whether mosquitos or elephants, are classified into the Kingdom Animalia. Taxonomists in Australia, Great Britain, and several other countries generally recognise five kingdoms; Animalia, Plantae, Fungi, Protista, and Monera, while American taxonomists sometimes divide the Kingdom Monera (bacteria) into two kingdoms (Archaeobacteria and Eubacteria), making a total of six kingdoms.

Phylum: The Phylum is another very broad level of classification. For example, the Phylum Chordata includes all vertebrates and some invertebrates. The defining features of chordates (animals within the Phylum Chordata) are possession, at some stage in the life-history, of:

- ☐ Pharyngeal slits
- ☐ A dorsal nerve chord
- ☐ A notochord
- ☐ A post-anal tail

Thus, human beings (and indeed all mammals), birds, reptiles, amphibians, fish, and some invertebrates, such as sea squirts, all belong in the Phylum Chordata.

Class: There are approximately 107 animal classes, although this number can vary based on taxonomic revisions. As an example of the degree of relatedness implied by this taxonomic rank, human beings belong in the class Mammalia, along with all other mammals (i.e. whales, seals, dolphins, cats, dogs, horses, cows, mice etc).

Focussing specifically on fish, the class Actinopterygii, to which carp and catfish both belong, includes all fishes apart from sharks, rays, and jawless fishes (lampreys, hagfish). Thus, for example, carp, catfish, barramundi, all tunas, marlin, mullet, gudgeons, gobies, coral trout, Murray cod, and approximately 24,000 other fish species are all actinopterygians.

Order: Order is the taxonomic rank at which carp (order Cypriniformes) and catfish (order Siluriformes) diverge. To place the concept of order in context, human beings belong in the order Primates, along with lemurs, lorises, tarsiers, monkeys, and apes. Domestic dogs belong in the order Carnivora, along with cats (including the big cats), seals, walruses, weasels, skunks, hyaenas, and many other predatory mammals.

Family: At this taxonomic rank, carp and catfish have now diverged. The order Cypriniformes is divided into 11-12 families, with common carp (*Cyprinus carpio*) belonging to family Cyprinidae. The order Siluriformes, to which catfish belong, contains more than 30 families. The two catfish species tested for susceptibility to Cyprinid herpesvirus 3 belong to two separate families, Ariidae (forktail catfishes) and Plotosidae (eel-tailed catfishes).

Genus: Organisms sharing this taxonomic rank are closely-related. Introduced common carp are the only species from the genus *Cyprinus* occurring in Australia. Human beings belong to the genus *Homo*. Modern humans (i.e. us) are the only extant (surviving) representatives of this genus.

Species: Individuals within a species can interbreed to produce fertile offspring. The common carp is a species; *Cyprinus carpio*, while modern humans are also a species; *Homo sapiens*. A scientific name for a species thus comprises the genus name (e.g. *Cyprinus*), which is shared by all species within that genus, and the specific epithet (e.g. *carpio*). Taxonomists are sometimes interested in defining sub-species, a finer classification again, but this level of detail is unnecessary for the present discussion.

To summarise, carp and catfish are as closely related as Humans and Lemurs (that is to say, they are not particularly closely related).

References

- Anderson, J.S. (2012). Fossils, molecules, divergence times, and the origin of Salamandroidea. *Proceedings of the National Academy of Sciences*, 109, <http://www.pnas.org/cgi/doi/10.1073/pnas.1202491109>
- Briggs, J.C. (2005). The biogeography of otophysan fishes (Ostariophysi: Otophysi): a new appraisal. *Journal of Biogeography*, 32, 287 – 294.
- Chen, W-J., Lavoué, S. & Mayden, R.L. (2013). Evolutionary origin and early biogeography of otophysan fishes (Ostariophysi: Teleostei). *Evolution*, 67, 2218 – 2239.
- Mccoll, K. A., Sunarto, A., Slater, J., Bell, K., Asmus, M., Fulton, W., Hall, K., Brown, P., Gilligan, D., Hoad, J., Williams, N. and Crane, M. St J. (2016). Cyprinid herpesvirus 3 as a potential biological control agent for carp (*Cyprinus carpio*) in Australia: susceptibility of non-target species. *Journal of Fish Diseases*, 40, 1141-1153.
- Nakatani, M., Miya, M., Mabuchi, K., Saitoh, K. & Nishida, M. (2011). Evolutionary history of Ostophysi (Teleostei), a major clade of the modern freshwater fishes: Pangaean origin and Mesozoic radiation. *BMC Evolutionary Biology*, 11: 177 <http://www.biomedcentral.com/1471-2148/11/177>
- Santini, F., Harmon, L.J., Carnevale, G. & Alfaro, M.E. (2009). Did genome duplication drive the origin of teleosts? A comparative study of diversification in ray-finned fishes. *BMC Evolutionary Biology* 9:194 doi:10.1186/1471-2148-9-194

Could the virus be released in a controlled or staged manner? (already on website)

(A) This is being investigated by the National Carp Control Plan. Scientists and planners are currently working on how to release the virus in the most effective way to reduce carp populations, but also to manage risks and impacts.

Scientists are building their understanding of how the virus is likely to impact carp populations and waterways through a series of research projects funded by the NCCP, and previous research undertaken worldwide. This research is revealing:

1. that the effectiveness of the virus is strongly influenced by water temperature and close contact with infected carp;
2. where significant carp biomass is located in our waterways; and
3. the conditions and thresholds at which dead carp will affect water quality.

This knowledge will allow more accurate predictions about how the virus is likely to work in specific waterways, and gives authorities a more precise and controlled way of reducing carp populations, while being able to manage risks.

Planners are also playing a role in building more precision into how the virus could be released by mapping virus management within discrete carp control zones. These are areas of catchments and waterways bounded by significant barriers to upstream fish passage (river regulating structures or natural barriers). These zones can then contain the impacts of the virus and allow a staged release.

To control the risks of downstream, unplanned virus spread (resulting from high water flows or floods) the virus release can start from downstream carp control zones and then move to upstream carp control zones.

A staged release of the virus within discrete control zones would also allow for the efficient use of management resources. Activities such as clean up could be more focussed, rather than being spread over numerous locations at the same time.

(B) Successful control of a pest species over a large geographic range can be logistically challenging, and this is certainly true of carp control in Australia. Common carp are now present in every Australian state and territory with the exception of the Northern Territory, constituting up to 80% of fish biomass in some river systems (Harris and Gehrke, 1997, Sustainable Rivers Audit unpublished data). Identification of a strategy for staged release would help control and manage risks and help overcome logistical challenges of spreading resources over many areas at the same time..

Possible phasing of a virus release is not without challenges. In particular, effectively compartmentalising such a large, geographically, climatically, and hydrologically diverse landscape poses numerous challenges. The world's largest rat extermination program on South Georgia Island offers some useful clues for success (Poncet *et al.*, 2011). The aim of this program was to eradicate brown rat (*Rattus norvegicus*) from a 170 km long, 10 - 40 km wide sub-Antarctic island 1400 km east of the Falkland Islands through introduction of 183 tonnes of poison over 224 square miles (580 km²). Through robust metapopulation research of the target species (Robertson and Gemmell, 2004) it was learned that the island's unique climate and topographical attributes resulted in several isolated rat populations separated by large glaciers.

This knowledge enabled development of a staged program for implementation, in which the island was divided into a number of treatment zones, which were treated individually. Using this staged, methodical strategy the project team were able to progressively move across the island, treating

each zone and testing effectiveness before moving on until eventually the entire island was treated successfully.

This is a noteworthy accomplishment clearly considered impossible by some in 1980 (Pye and Bonner, 1980), who reported brown rats to be “an established part of the wildlife of South Georgia”, and also reported that “no management procedures would be possible to reduce or control the existing rat population even if this were thought desirable”. This successful outcome, delivered despite earlier pessimism, highlights the value of adopting an evidence-based strategy, coupled with a ‘can do attitude’ when tackling significant pest control challenges.

While there is no evidence of genetic structuring of carp in Australia, the discontinuous nature of many Australian waterways (including the Murray-Darling Basin) resulting from extensive installation of flow regulating infrastructure may offer a means via which the release of CyHV-3, and subsequent clean-up of carp biomass, may be logically phased. Under the National Carp Control Plan it is proposed to explore opportunities to utilise barriers to fish migration to separate waters into discrete carp control zones, enabling carp to be treated within each zone in a staged manner. Implementing a controlled release strategy using barriers to fish migration would require identifying in-stream structures impervious to drown-out in all but major floods, and timing release and clean-up to avoid significant flooding.

References

Harris, J. H. and Gehrke, P. C. (1997). *Fish and Rivers in Stress. The NSW Rivers Survey*. Fisheries Research Institute & the Cooperative Research Centre for Freshwater Ecology. Sydney.

Poncet, S., Poncet, L., Poncet, D., Christie, D., Dockrill, C. and Brown, D. (2011) Introduced mammal eradications in the Falkland Islands and South Georgia. *Island Invasives: Eradication and Management* (eds C.R. Veitch, M.N. Clout & D.R. Towns), pp. 332–336. IUCN, Gland, Switzerland.

Pye, T. and Bonner, W.N. (1980). Feral brown rats, *Rattus norvegicus*, in South Georgia (South Atlantic Ocean). *Journal of Zoology*, 192, 237-255.

Robertson, B. C. and Gemmell, N. J. (2004). Defining eradication units to control invasive pests. *Journal of Applied Ecology*, 41, 1042-1048.

What will happen to the dead carp? (similar to question already on the website – How will the clean-up be planned?)

(A) Dead carp will occur in waterways where the virus is released. A critical challenge for the NCCP is to demonstrate how we can manage dead carp in a way which avoids impacts on water quality, people, livestock and native species. To meet this challenge, the NCCP is undertaking research, and talking to experts and local communities about how to respond to dead carp biomass.

The response ideas that researchers, stakeholders and experts come up with will be tested and refined through regional case studies which will workshop how the virus release can be managed in a specific region. The case studies will involve all the relevant authorities, stakeholders who might be impacted and people with local knowledge about carp and their waterways.

The NCCP has already identified a range of methods to respond to the build-up of dead carp at a wide range of locations including:

- ② regulating water flows to flush, move or dry out water bodies where dead carp biomass is located
- ② removal or clean-up of dead carp biomass with boats, nets, booms, pumps and specifically engineered machinery
- ② the movement of dead carp to low risk sites, and
- ② leaving the dead carp in situ where there are no impacts.

The specific chosen methods for managing dead carp will depend on local conditions and arrangements.

Dead carp that are removed from the waterways will be transported to regional processing facilities wherever possible. The NCCP has a specific research project which will recommend how the dead carp biomass can be used. Where it is not possible to use the dead carp, they will be disposed of at approved waste disposal sites.

Virus response will be managed through co-ordinated regional, state and national bodies that bring together relevant government agencies and local authorities. The community and commercial sector will also be involved in the response to the virus release.

(B) Like any worthwhile endeavour, carp biocontrol presents some challenges. Maintaining water quality for use by people, stock, and native species is one such challenge. The NCCP recognises the importance of this task, and our approach to developing a practical, effective, and flexible clean-up strategies is outlined below.

Learning from the past

Fish kills in freshwater ecosystems occur world-wide, with many causes (e.g. Monette et al., 2006; Hoyer et al., 2009; Polidoro and Morra, 2016). Research on fish kills has tended to focus on identifying causes (e.g. Thronson and Quigg, 2008; Moustaka-Gouni et al., 2017) and ecological consequences (e.g. Starling et al., 2002; Sayer et al., 2016) of fish deaths. Nonetheless, published and unpublished case studies consider clean-up action to protect water quality following fish kills (La and Cooke, 2011). Researchers will be engaged under the NCCP to systematically survey fish-kill clean-up methods worldwide, providing insights into what works, what doesn't, and likely challenges and ensure that past experience informs proposed approaches.

Quantifying risk

Intuitively, we can all understand that major carp mortality events entail some risks to water quality. However, understanding the exact nature and magnitude of these risk may require a specialised approach. Research commissioned under the NCCP will include a scientific risk assessment quantifying risks associated with the proposed carp biocontrol program, including the clean-up. Hayes et al. (2007) provide an overview of the methods used in scientific risk assessment.

Biomass estimates: how many carp are there, and where are they?

Successful clean-up requires understanding carp abundance and distribution at several spatial scales, from continental through to particular habitat types. The NCCP will commission a multi-method biomass study, providing the most accurate picture ever developed of carp distribution and abundance in Australia. Methods used will include:

- ② capture-recapture studies
- ② acoustic and radio-tagging
- ② collation and statistical interrogation of all pre-existing carp abundance datasets
- ② physical measurement of carp biomass when lakes and wetlands are drained as part of ecological remediation works
- ② environmental DNA (e-DNA, a suite of methods that enable detection of a species and estimation of its abundance based on DNA shed into the water)

This multi-method approach will enable cross-checking and triangulation, enhancing the accuracy and rigour of resulting biomass estimates.

An ecosystem perspective on clean-up requirements

Planning the clean-up requires knowledge of the virus's behavior in wild carp populations, including seasonal patterns of viral latency and re-emergence (Eide et al., 2011; Xu et al., 2013). To enable this understanding, an epidemiological model of the carp virus's behaviour across all 29 river catchments of the Murray-Darling Basin will be developed. The model will identify optimal seasons, locations, and release strategies for the virus, and in so doing will also pinpoint times and places where carp mortality events are likely, allowing for response planning.

Hydrological models, developed and tested over many years, will also examine the effects of varying levels of carp biomass on dissolved oxygen levels in a range of aquatic habitat types. Mosley et al. (2012) provide an example of a similar modelling process. These models will be complemented by detailed experimental studies in real ecosystems (see Boros et al., (2014) for an example of this kind of experiment). Additional research may also explore nutrient interception pathways in freshwater ecosystems, identifying options for avoiding blue-green algae blooms. Together, these research projects will enable response planning that safeguards water quality. For further reading in these areas, Brookes et al. (2005) discuss nutrient interception pathways, while Carmichael and Boyer (2016) review health impacts of blue-green algae.

How to eat an elephant: compartmentalising clean-up

Successful control of a pest species over a large geographic range can be logistically challenging, and this is certainly true of carp control in Australia. Common carp are now present in every Australian state and territory except the Northern Territory, making up more than 80% of fish biomass in some river systems, and up to 93% in some areas (Harris and Gehrke, 1997). Logistically, it would impractical to seek to employ a simultaneous pest control strategy for common carp across the species' distribution; a phased approach is required.

The need to phase any release and clean up strategy also presents some clear challenges. In particular, how to compartmentalise such a large, geographically, climatically and hydrologically diverse landscape. The world's largest rat extermination program in South Georgia offers some useful insights here. The aim of this program was to eradicate brown rat (*Rattus norvegicus*) from a 170km long, 10-40km wide sub-Antarctic island 1400km east of the Falkland Islands through introduction of 183 tonnes of poison over 224 square miles (580km²). Through robust metapopulation research of the target species (Robertson and Gemmell, 2004) it was learned that the island's unique climate and topographical attributes resulted in several isolated rat populations separated by large glaciers. This knowledge enabled development of a staged program for implementation, in which the island was divided into a number of treatment zones, which were treated individually (Figure 1). Using this staged, methodical strategy the project team were able to progressively move across the island, treating rats in each zone, testing effectiveness in each zones before moving on until eventually the entire island was treated successfully. This is a noteworthy

accomplishment clearly considered impossible by some in 1980 (Poncet et al., 1980), who reported brown rats to be “an established part of the wildlife of South Georgia”, and also reported that “no management procedures would be possible to reduce or control the existing rat population even if this were thought desirable”. The successful outcome delivered in spite of earlier pessimism highlights the value of adopting an evidence-based strategy, coupled with a ‘can do attitude’ when tackling significant pest control challenges.

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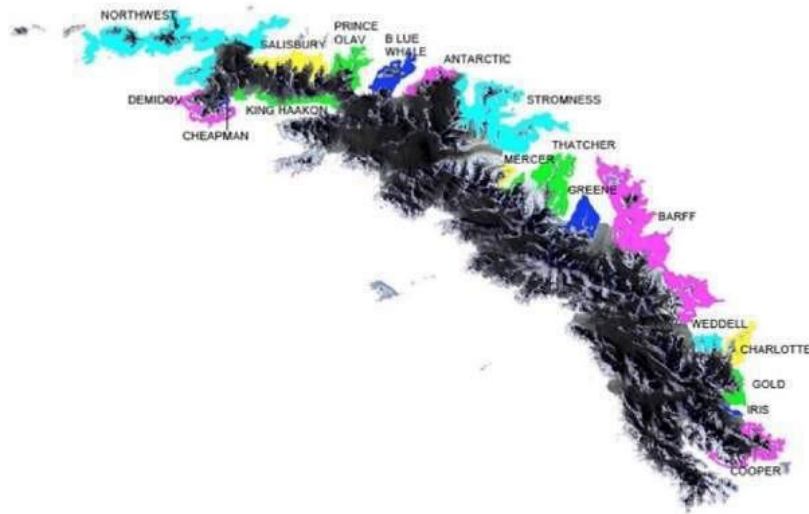


Figure 1. Glaciers enable South Georgia to be divided into discrete zones for the purpose of rodent control (Figure reproduced from Poncet and Poncet, 2009).

While there is no evidence of genetic structuring of carp in Australia, the discontinuous nature of Australia’s Murray-Darling Basin resulting from extensive installation of flow regulating infrastructure may offer a means via which the release of CyHV-3, and subsequent clean-up of carp biomass may be logically compartmentalised and phased (see Figure 2). Under the National Carp Control Plan opportunities are being explored to utilise these assets to separate waters into discrete treatment zones, enabling carp to be treated within each zone in a staged manner.

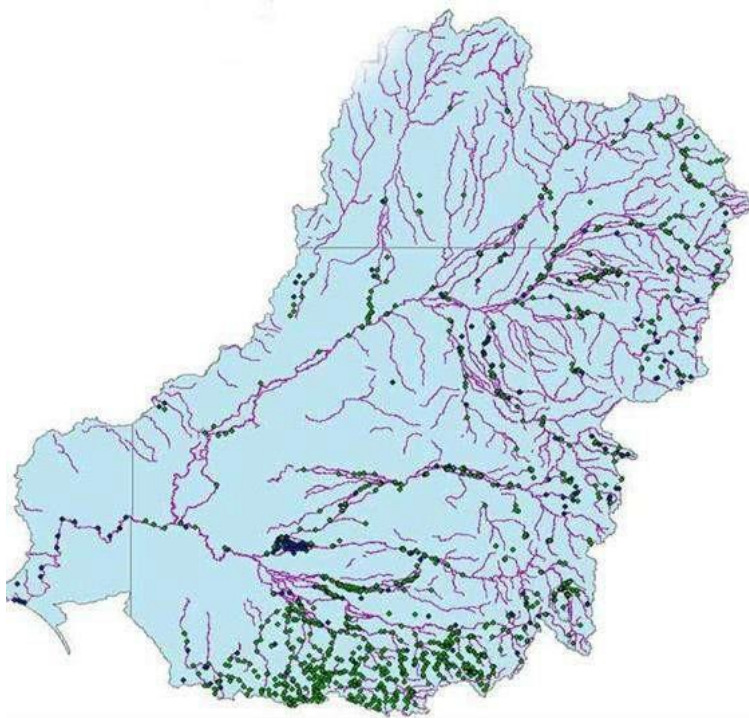


Figure 2. Dams and weirs present throughout the Murray-Darling Basin (in green). Opportunities will be explored to use these compartmentalise reaches into zones, enabling progressive treatment for the control of carp (source: Murray-Darling Basin Authority)

Using flow

Many Australian rivers are highly regulated, with locks, weirs, and dams controlling water movement (Grouns, 2008). The NCCP is working with river managers to identify ways that flows can be manipulated to assist release and clean-up and maintain water quality.

Boots on the ground: the logistics

Results from these research projects will show us what needs to be done. Expert help will then be enlisted to work out how we do it in consultation with communities in particular regions. The NCCP will consult with experts from areas including transport logistics, commercial carp harvesting, and large-scale human- and animal-health responses. These experts will develop detailed strategies for rapidly responding to carp mortality events, including identifying equipment and personnel needs.

References

- Boros, G., Takács, P. and Vanni, M. J. (2015). The fate of phosphorus in decomposing fish carcasses: a mesocosm experiment. *Freshwater Biology*, 60, 479-489.
- Brookes, J. D., Aldridge, K., Wallace, T., Linden, T. and Ganf, G. G. (2005). Multiple interception pathways for resource utilization and increased ecosystem resilience. *Hydrobiologia*, 552, 135-146.
- Carmichael, W. W. and Boyer, G. L. (2016). Health impacts from cyanobacteria harmful algae blooms: implications for the North American Great Lakes. *Harmful Algae*, 54, 194-212.
- Eide, K. E., Miller-Morgan, T., Heidel, J. R., Kent, M. L., Bildfell, R. J., LaPatra, S., Watson, G. and Jin, L. (2011). Investigation of koi herpesvirus latency in koi. *Journal of Virology*, 85, 4954-4962.

Growns, I. (2008). The influence of changes to river hydrology on freshwater fish in regulated rivers of the Murray-Darling basin. *Hydrobiologia* 596, 203-211.

Harris, J. H. and Gehrke, P. C. (1997). *Fish and Rivers in Stress. The NSW Rivers Survey*. Fisheries Research Institute & the Cooperative Research Centre for Freshwater Ecology. Sydney.

Hayes, K. R., Kapuscinski, A. R., Dana, G., Li, S. and Devlin, R. H. (2007). 'Introduction to environmental risk assessment for transgenic fish'. In: *Environmental risk assessment of genetically modified organisms, Vol 3. Methodologies for transgenic fish* (Kapuscinski, A.R., Hayes, K.R., Li, S., Dana, G., Hallerman, E.M. & Schei, P.J., eds), pp. 1-28. CAB eBooks.

Hoyer, M. V., Watson, D. L., Willis, D. J. and Canfield Jr., D. E. (2009). Fish kills in Florida's canals, creeks/rivers, and ponds/lakes. *Journal of Aquatic Plant Management*, 47, 53-56.

La, V. T. and Cooke, S. J. (2011). Advancing the science and practice of fish kill investigations. *Reviews in Fisheries Science*, 19, 21-33.

Monette, S., Dallaire, A. D., Mingelbier, M., Groman, D., Uhland, C., Richard, J-P., Paillard, G., Johannson, L. M., Chivers, D. P., Ferguson, H. W., Leighton, F. A. and Simko, E. (2006). Massive mortality of common carp (*Cyprinus carpio carpio*) in the St. Lawrence River in 2001: diagnostic investigation and experimental induction of lymphocytic encephalitis. *Veterinary Pathology*, 43, 302-310.

Mosley, L. M., Zammit, B., Leyden, E., Heneker, T. M., Hispey, M. R., Skinner, D. and Aldridge, K. T. (2012). The impact of extreme low flows on the water quality of the lower Murray River and Lakes (South Australia). *Water Resource Management*, 26, 3923-3946.

Moustaka-Gouni, M., Hiskia, A., Genitsaris, S., Katsiapi, M., Manolidi, K., Zervou, S-K., Christophoridis, C., Triantis, T.M., Kaloudis, T. and Orfanidis, S. (2017). First report of *Aphanizomenon favaloroi* occurrence in Europe associated with saxitoxins and a massive fish kill in Lake Vistonis, Greece. *Marine and Freshwater Research*, 68, 793-800.

Polidoro, B. A. and Morra, M. J. (2016). An ecological risk assessment of pesticides and fish kills in the Sizaola watershed, Costa Rica. *Environmental Science and Pollution Research*, 23, 5983-5991.

Poncet, S., Poncet, L., Poncet, D., Christie, D., Dockrill, C. and Brown, D. (2011). Introduced mammal eradications in the Falkland Islands and South Georgia. *Island invasives: eradication and management*. IUCN, Gland, Switzerland, pp.332-336

Robertson, B. C. and Gemmell, N. J., (2004). Defining eradication units to control invasive pests. *Journal of Applied Ecology*, 41, 1042-1048.

Sayer, C. D., Davidson, T. D., Rawcliffe, R., Landgon, P. G., Leavitt, P. R., Cockerton, G., Rose, N. L. and Croft, T. (2016). Consequences of fish kills for long-term trophic structure in shallow lakes: implications for theory and restoration. *Ecosystems*, 19, 1289-1309.

Starling, F., Lazzaro, X., Cavalcanti, C. and Moreira, R. (2002). Contribution of omnivorous tilapia to eutrophication of a shallow tropical reservoir: evidence from a fish kill. *Freshwater Biology*, 47, 2443-2452.

Thronson, A. and Quigg, A. (2008). Fifty-five years of fish kills in coastal Texas. *Estuaries and Coasts*, 31, 802-813.

Xu, J-R., Bently, J., Beck, L., Reed, A., Miller-Morgan, T., Heidel, J. R., Kent, M. L., Rockey, D. D. and Jin, L. (2013). Analysis of koi herpesvirus latency in wild common carp and ornamental koi in Oregon, USA. Journal of Virological Methods, 187, 372-

As a koi breeder/owner, can you ensure that the virus won't spread to my fish? (Landline Q)

(A) Koi are the same species as the common carp, so they are susceptible to the carp virus. Regardless of whether the carp virus is released or not, Koi owners should be using general biosecurity practices to protect their fish from the many virus' and pathogens that can affect them. This includes always using a secure water supply, quarantining new fish to ensure that they are healthy before introducing them to the existing population, and using a secure source of high quality food. All fish owners should be taking these types of precautions. The NCCP is looking at the various biosecurity practices used by countries that have both Koi and the carp virus. We will then work with the Koi industry to co-design strategies to address owner/breeder concerns and minimise the risk to their fish, should the carp virus be released.

(B) To be developed.

Why should we believe you will take our concerns seriously? (Landline Q)

(A) Many stakeholder groups are interested in this process and the potential outcome, and we are committed to understanding everyone's concerns and needs. This involves meeting with stakeholders on a regular basis to update them on the NCCP program. The University of Canberra has also been appointed to undertake dedicated research into the views of different groups and communities about proposed carp control methods. This project, together with broader consultation, will ensure that development of the Plan is informed by a thorough understanding of the impact of carp control on all stakeholders.

(B) NONE

When will be virus be released? (Landline Q)

(A) If the carp virus is released, it will not be before the end of 2018. At the end of 2018, the NCCP will make a formal recommendation on the best way to control carp impacts in Australia. This recommendation will be a document called 'The National Carp Control Plan'. It will be based on the results of the research projects funded by the NCCP and the input from communities during the consultation process. If it is recommended that the carp virus form part of a suite of carp-control measures, and formal approval is granted, the carp virus may then be released.

(B) NONE

What if a state or territory government rejects the NCCP recommendation? (Landline Q)

(A) Independent approval processes under state and federal legislation are an essential part of the NCCP process, which will ensure that the proposed control measures are safe and effective for use.

(B) NONE

What government biosecurity measures does the NCCP need to adhere to in relation to carp control? (Landline Q)

(A) Every state and territory has its own biosecurity legislations. Any virus release would be required to follow the provisions of these standards.

(B) NONE

If infected carp are turned into liquid fish fertilizer as part of the clean-up process, is there a risk that the virus will spread? (Landline Q)

(A) No. Liquid fertilizer producers most commonly heat treat fish to boiling. The carp virus is destroyed at 50 degrees Celsius. Therefore, the heat-treating process would destroy the virus. In fact, the initial release of the virus means that a lot of fish will be available for this purpose. Even as numbers diminish, there will still be carp available as the virus alone will not eradicate all the carp, so it's important that we have complementary control measures, like harvesting, to keep numbers low.

(B) To be developed

Could the virus contaminate my drinking water? (Landline Q)

(A) No. Carp virus is a fish virus and there is no evidence of any fish virus being transmitted to humans. It presents no human health risks. The purification processes used by water authorities that supply drinking water, such as chlorination and UV treatment, would also destroy the carp virus if present.

(B) To be developed.

There is a lot of noise on social media about the NCCP and release of the carp virus. Are the concerns being raised correct? (Landline Q)

(A) There are a lot of different theories that come with a process like this, and I am happy to meet with any person or group to discuss specific concerns. The NCCP is a science program with two parts – stakeholder engagement and research. It is designed to de-risk a decision-making process. The NCCP is not involved in the decision-making process itself. We remain focused on delivering the research and stakeholder feedback that will ultimately inform the decision made by governments to release, or not release, the carp virus.

(B) NONE.

How will the release of the virus impact businesses involved in the commercial fishing and export of carp? (Landline Q)

(A) As one of the most farmed and consumed fresh water fish species on the planet, there are people commercially farming and fishing this species all around the world. The carp virus is now present in 33 countries, and in many of these countries carp is still being farmed and commercially harvested for human consumption. If the virus is released, there will still be a residual amount of carp in our rivers for people to catch. Release of the virus is not about eradication, it's about dramatically reducing carp numbers and their impact on our waterways and native fish species. We are working closely with commercial fishing stakeholders to understand their views and concerns, and have dedicated engagement underway with this sector to consider the potential impacts to their industry.

(B) NONE

If commercial fishers can fish carp stocks down, why take business away from them? (Landline Q)

(A) We are aware of the unique skill sets of commercial fishers and are looking at how they can play a part in the Plan – whether it is by helping reduce carp numbers in certain areas before the virus is released or an involvement in the clean-up, or both. However, research models tell us that unless carp populations can be reduced by a large percentage, physical removal is unlikely to offer an effective method for carp control. The effectiveness of fishing in reducing carp populations and environmental impacts is low.

(B) NONE

Why are you spending money on academics doing biomass research when Peter Ingram says that he and his team can do it? (Landline Q)

(A) To date, estimates of carp biomass/density in Australia have been made at local or regional scales, and vary widely. The methodology being used in this research project will provide a more accurate estimate of carp biomass in Australia - across a range of habitat types including rivers, lakes billabongs and estuaries. This will be vital to inform release and clean-up strategies, and the modelling of possible outcomes that might result from biocontrol, if it is used.

(B) NONE

So much money has gone into this program, yet it requires the support of every state and territory government to proceed. What do you say to commercial fishing businesses that have already suffered if this doesn't go ahead? Do you feel responsible for that? (Landline Q)

(A) The NCCP has embarked on a process driven by evidence based-based scientific results. Our objective is to develop a multi-pronged approach for the effective long-term control of carp in Australia. Viral bio control is just one of many possible measures being investigated. The NCCP is committed to ensuring that any carp control measures adopted will not hurt the Australian ecosystem, can be done safely and effectively, and will ultimately improve our native fish populations. We are also committed to transparency. All information will be published. All queries and concerns will be responded to and addressed. The NCCP is committed to working in collaboration with all stakeholders as we continue to investigate the safest science-based solution to Australia's common carp problem.

(B) NONE

Why would government choose to invest millions in this program when that money could be put towards boosting the commercial fishing industry and harvesting this pest for economic gain? (Landline Q)

(A) Research models tell us that unless carp populations can be reduced by a large percentage, physical removal is unlikely to offer an effective method for carp control. The effectiveness of fishing in reducing carp populations and environmental impacts is low.

(B) NONE

What is your response to scientists like Jonathan Marshall questioning the efficacy of the virus? (Landline Q)

(A) The NCCP is a process, not a forgone conclusion, and we welcome all viewpoints and feedback. The factors highlighted by Jonathan and his colleagues are valid and NCCP researchers were already considering them as part of their work. This research was set in train prior to the Science letter. Following publication of the letter, the NCCP also invited Jonathan to be a part of its Scientific Advisory Group to ensure that all viewpoints are considered and that the research being undertaken is comprehensively addressing all risks.

(B) NONE

I've heard the NCCP won't deliver its recommendations by the end of 2018 as previously stated. Is this because science hasn't delivered? (Landline Q)

(A) The NCCP is focused on delivering recommendations based on the views of stakeholders and exhaustive scientific research which will determine the most effective long-term solution for carp control in Australia. Should further research or stakeholder consultation be required to determine the NCCP's recommendations, then a program extension will be considered at that time.

(B) NONE

How are you going to clean up that many dead carp? Even if it is possible, what's it going to cost? (Landline Q)

(A) We have formed an operations working group with experts in this space and are undertaking research into how other countries have responded to major fish kills. Field trials are also underway and we are meeting with experts from areas including logistics, commercial-scale harvesting, and large-scale human and animal-health responses. These experts will assist in developing detailed strategies for rapidly responding to carp mortality events, including identifying equipment and personnel needs.

(B) NONE

Who is responsible for the clean-up? (Landline Q)

(A) Firstly, the NCCP is working to determine whether biocontrol is the best way to manage Australia's common carp problem. Recommendations will then be delivered to governments to inform decision making. These recommendations will be based on the research, trials, case studies and engagement that have been undertaken as part of the NCCP process. Should governments adopt the NCCP recommendations, then they will be work with state and local authorities, as well as industry stakeholders, to execute the Plan. Should the virus be released, it will be done so in a controlled manner and staged by region to factor in optimal water temperatures and environmental conditions.

(B) NONE

How will the release of the virus impact businesses involved in the commercial fishing and export of carp? (Landline Q)

(A) As one of the most farmed and consumed fresh water fish species on the planet, there are people commercially farming and fishing this species all around the world. The carp virus is now present in 33 countries, and in many of these countries carp is still being farmed and commercially harvested for human consumption. If the virus is released, there will still be a residual amount of carp in our rivers for people to catch. Release of the virus is not about eradication, it's about dramatically reducing carp numbers and their impact on our waterways and native fish species. We are working closely with commercial fishing stakeholders to understand their views and concerns, and have dedicated engagement underway with this sector to consider the potential impacts to their industry.

(B) NONE

Why introduce the virus to our waterways when most other countries are actively working to eradicate it? (Facebook video Q)

(A) People view species in different ways in terms of what they value. In Australia, the common carp is generally recognised as a pest. A pest is defined as an animal or plant that has a harmful effect on people, their food or living conditions. In some developing nations, where food security is an issue, a consistent food source may outweigh the impact that an animal or plant has on the environment. If carp is considered an essential source of food by a country, then the carp virus could be considered a risk to that country's food security.

(B) NONE

How is international science/research being used to inform the NCCP's approach? (Facebook video Q)

(A) The NCCP is drawing on the global body of research available on carp control as it explores a smart, safe and integrated way to manage Australia's carp problem.

(B) NONE

Are field trials planned as part of the NCCP's virus risk assessment? (Facebook video Q)

(A) It is not desirable to undertake fieldwork involving the carp virus until approval has been received for its use. Any risk assessment of the virus is undertaken in a controlled laboratory environment. However, the NCCP is undertaking field trials as part of several research projects including understanding how dead carp affect water quality, options for turning carp waste into resources and biomass estimation.

(B) NONE

What is the risk of ongoing outbreaks once the virus is released? Could it infect other species? (Facebook video Q)

(A) International research programs report no evidence of repeat outbreaks in any given waterway once the virus has been released. In other words, the virus significantly affects a given body of water the first time it is released, and not again.

(B) To be developed.

From: Carp <Carp@frdc.com.au>
Date: Friday, 27 April 2018 at 5:38 pm
To: "jamie@bishop.com.au" <jamie@bishop.com.au>
Subject: RE: Harvest the carp?

Dear Mr Bishop,

Thanks for your email.

The NCCP is focussed on delivering recommendations based on views of stakeholders and scientific research which will determine the most effective long-term solution for carp control in Australia. With research well underway and community consultation progressing, good progress is being made with respect to developing an evidence-based plan for the control of carp in Australia.

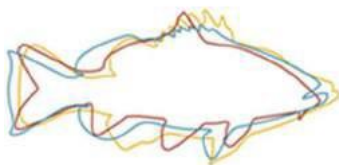
Many of the issues raised in your email are currently being addressed by individual research projects. This includes the viability of carp control via commercial exploitation and expected benefits/costs associated with carp control, as well as the medium/long term ecological outcomes of major carp population reduction. The NCCP is also exploring the many possible uses for virus infected carp should biocontrol proceed. Research findings will be published on the NCCP website once complete.

In terms of how proposed carp biocontrol might impact the export of carp, we are working closely with commercial fishing stakeholders to understand their views and concerns, and have dedicated engagement underway to consider the potential issues to their industry. Processes required to gain export accreditation will continue to be explored in collaboration with relevant agencies.

Should the companies involved in the specific example mentioned wish to discuss their concerns directly with the NCCP, we would welcome the opportunity.

Kind Regards,
NCCP Team

National Carp Control Plan
Fisheries Research and Development Corporation (FRDC)
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From: Jamie Bishop <jamie@bishop.com.au>
Sent: Tuesday, 24 April 2018 12:38 PM
To: Carp <Carp@frdc.com.au>
Subject: Harvest the carp?

Dear Mr. Barwick,

I attended your information session in Adelaide this year and became quite concerned that a number of issues seemed unresolved/not addressed/required more information... yet the d-day for the decision was locked in "before the end of 2018".

Yesterday, I was advised that more large orders for commercial carp export are "on hold" due to the virus release threat ... and the quantities detailed would be more than enough to make the carp harvesting business extremely viable.

This information follows on from earlier reports (referenced by the ABC late last year FYI
) <http://mobile.abc.net.au/news/2017-12-06/pest-to-plate-our-growing-appetite-for-feral-carp/9227976?pfmredir=sm>

It is becoming more and more evident that there could be a far more economically and environmentally friendly solution for SA AND the country ... I believe it deserves the time necessary to be evaluated before a decision is made.

If it would help, I understand that the companies involved would be willing to provide specific order details - and I am sure that local councils would also provide more economic data on the local use/value of the carp eg) from recreational fishing, fertiliser and fauna feeding?

This issue needs more research, more information .. and I believe more time.

Sincerely,

Jamie Bishop
Goolwa resident and local business owner
0411 577 499

PS At the meeting in Adelaide, you also referred to research conducted that showed "over 60% of the community want it!" ... and anecdotal comments from many who think "they should release it now!"
I've been unable to find this research - and at the time you said that you'd provide it online or send it to me - please could you?

From: Jayne Goldring
Sent: Tuesday, 8 May 2018 4:44 PM
To: Mikala Dickie
Subject: FOR APRIL ATTACHMENT - ADRIAN FALCONER EMAIL FW: Dates of data release

Hello Adrian,

The consultation comprised of 82 meetings held across the country. The feedback from participants were captured in a number of ways.

Quantitative data included:

- Electronic surveys undertaken during the workshop by a selection of participants
- Survey forms completed by willing participants during or concluding the workshop events.

Qualitative feedback during the consultation period comprised of:

- individuals asking questions directly to each of the presenters at the individual meetings. With each relevant presenter answering these questions immediately.
- Break out group discussions (some, not all meetings) on key areas / topics of interest or concern.

The results from the quantitative data will be reported on by way of graphs and analysis in the final report. With regards to the qualitative research, the key questions, concerns, issues, ideas and recommendations raised were captured by a representative at the meeting. These were then grouped into specific themes / topics and will be addressed in detail in the report. We will not be including a transcription to each of the 82 meetings held, that is not the purpose of the report.

Due to privacy reasons the above content will not be attributed to individuals.

With regards to the timings for research projects. Each research project has its individual milestones, draft report and final report deadline dates. These are set out in the individual contracts we have with each research provider. On occasion these milestone dates change due to the complexity of the research work being undertaken. We welcome these milestone extensions as it ensures we are undertaking comprehensive and thorough research - and outcomes are not dictated by deadlines.

These individual deadlines and milestones then shape our overall milestone dates for the broader program: delivery of research findings to the broader public, development of the draft report, consultation on the draft report and subsequent delivery of final recommendations to governments. Factored into these timelines are the regulatory requirements we need to meet in relation to ensuring the public has adequate time and opportunity to submit feedback to the findings / recommendations.

We are not seeking to rush through this information. You have our commitment that you will be able to provide feedback to every single report that is released under the NCCP. Should NCCP consider the timeline to be too tight for this process to adequately occur we will seek an extension. You have our assurance that ample time will be given for feedback to all research projects.

We appreciate your interest in the NCCP and look forward to sharing with you the consultation report in May and upcoming research reports as soon as they become available.

From: ADRIAN FALCONER <adrian.falconer@fujifilm.com>

Sent: Wednesday, 11 April 2018 12:12 PM

To: Carp <Carp@frdc.com.au>

Subject: Re: Dates of data release

Thank you for your response, I would welcome any and all dialogue with Matt Barwick and I trust that it is useful to him too. There is a large team working towards a positive outcome for our rivers and waterways, outside of the NCCP who find it very difficult to get independent science or concerns considered in the current structure.

provided be a complete record of all questions asked and the answers given, is the report in the form of transcripts or rather a condensed, generalised report? With summarised questions and answers. I assume if a report is possible, that recordings exist, will these be published as was previously committed or is the report meant as a substitute for this?

I look forward to your clarified timeline, but given the looming deadlines, I would ask specifically: Can you confirm that all research will be published prior to the EPBC Act proceedings and any draft release of the National Carp Control Plan.

The dates we have available suggest that releases of data over the coming months would not be sufficient

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the only dates published by the NCCP so are all we have to go on. To date, we do not have the data, some of which has been described as "coming out in coming months" for the entire duration of the project, computer modelling of carp movements and population mapping in particular. If the dates do remain unchanged, their is insufficient time left to allow for the release of data with time for subsequent analysis to take place.

My apologies if you feel like you have answered these questions, but the previous response, while encouraging, is not definitive on the questions asked,

Thanks again,

Adrian Falconer

On Wed, Apr 11, 2018 at 8:49 AM, Carp <Carp@frdc.com.au> wrote:

Dear Adrian,

Thank you for your email and further to your conversation with Matt Barwick last night, we can confirm Matt's advice directly to you that a detailed report of our community briefing sessions will be published to our website in May. The report will summarise questions submitted and feedback provided from participants from information sessions.

We are currently developing a timeline to clarify the various opportunities for stakeholders to contribute information and/or feedback relating to the National Carp Control Plan, and clarify how this will be used.

In regards to research there will be a range of outputs progressively generated over coming months to inform the Plan. These will be made available following peer review. We are seeking to incorporate timelines for publication of relevant outputs into the above described timeline

We once again thank you for your interest in the NCCP.

Kind Regards,

NCCP Team

National Carp Control Plan

Fisheries Research and Development Corporation (FRDC)

Web: www.frdc.com.au □

www.carp.gov.au



From: ADRIAN FALCONER <adrian.falconer@fujifilm.com>

Sent: Monday, 9 April 2018 4:23 PM

To: Carp <Carp@frdc.com.au>

Subject: Dates of data release

Dear NCCP team,

I did not receive a response to my previous email regarding the promised videos of Q&A sessions, but I gather these will not be forthcoming as you have now simply posted an edited version of the powerpoint presentation section of one of your consultations. As I mentioned previously, this does not allow us to gauge community reaction, nor does it allow us to get an appreciation of the questions and issues the community are raising, nor the questions which are being asked but currently are not able to be answered through this process. Perhaps more importantly, this is not what was committed to for well over 12 months.

Putting this aside, can you please provide details of when the research results will become available to the public, of particular importance are the population mappings, the detailed models of carp movements and the studies that determine the impact of dead carp on the waterways including the maximum threshold to avoid environmental impacts.

The dates for deadlines for the NCCP's EPBC act requirements and the release of the draft plan are rapidly approaching and will leave us with no time to analyse the data and give meaningful feedback, can you please confirm the dates for the full release of data from these studies and any other studies relevant to the NCCP.

Thanks in advance,

--

Adrian Falconer

WA/NT Area Business Manager | FUJIFILM Australia Pty Ltd

T: +61 8 6241-0600 | M: 0419 770 443

[14 Kenhelm Street, Balcatta , WA 6021](http://14KenhelmStreetBalcattaWA6021)

Adrian.Falconer@fujifilm.com | www.fujifilm.com.au



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Adrian Falconer

WA/NT Area Business Manager | FUJIFILM Australia Pty Ltd

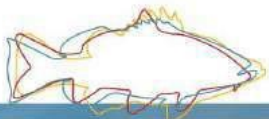
T: +61 8 6241-0600 | M: 0419 770 443

14 Kenhelm Street, Balcatta, WA 6021

Adrian.Falconer@fujifilm.com | www.fujifilm.com.au



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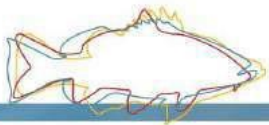
STAKEHOLDER ENGAGEMENT SCHEDULE Updated 24th April 2018

DATE	WHO / WHAT	COMMITMENT	WHERE	KEY CONTACTS	STATUS	NCCP REP	NEXT STEPS	JURISDICTION
APRIL								
26-Apr	Indigenous engagement	In person briefing	Canberra		Seftons contacted	Matt Barwick		National
TBA	Australian Veterinary Association (AVA)	KH has contacted	Canberra	Dr Melanie Latter	Awaiting response	Matt Barwick	Ensure we reach aquatic vets via this engagement, alternatively enquire how?	National
PLANNING NOW	Australian Recreational Fishing Foundation	Partner / support for Gone Fishing Day	TBA	Chair - Brett Cleary 0418 121 317	Gone Fishing Sub-Committee being appointed this week	Matt Barwick	Brett or another Rec Fishing rep will follow-up KH 20/04	National
MAY								
4th May	Border Region Organsation of Councils (BROC)	No teleconferencing ability. Requested brochure	N/A	Robyn Philips	KH checking brochures	N/A	Date of meeting to be confirmed	QLD & NSW
14-May	Region 5 Riverland Meeting	MB to present via videoconference	N/A	Angus Verley	Confirmed	Matt Barwick	AV will confirm presentation time and will send GoTo link	SA
16-17 May	Environment & Waterways Alliance NW	Agenda for upcoming Bathurst conf is full	N/A	Mick Callan	Mick would like to stay across NCCP activity	Matt Barwick	For consideration	NSW
TBA	Namoi Group of Councils	R. Thomson is tabling opportunity at April 20/4 meeting	TBA	Rebel Thomson, Exec Officer, Namoi Unlimited	Rebel will advise KH how NCCP can participate	Matt Barwick	TBA	NSW
TBA	Hon. Joel Fitzgibbon MP. Member for Hunter, Shadow Minister for Agriculture, Fisheries and Forestry, Shadow for Rural & Regional Australia	In person briefing	Canberra	TBA	To coordinate	Matt Barwick	Determine key messages for this meeting	National
TBA	DAWR - Advisor @ Sustainability, Ag Fisheries	Update at next catch-up	Canberra	TBA	To coordinate	Matt Barwick		National
22nd May	NCCP Steering Committee	Presentation and Q&A	Adelaide	Fontella Koleff / Alex Chalupa	Time TBA	Matt Barwick	Confirming	SA
Confirm following Steering Comm meeting	South Australian federal & state ministers and advisors, listed below:	Briefings	Meet while in SA for PI Workshop	Claire Stephenson & Fontella Koleff	CS & FK to facilitate; KH to manage	Matt Barwick		SA
	David Speirs, Minister for Environment & Water							SA
	Tim Whetstone, Minister for Primary Industries							SA
	Jo Podoliakj, Chief Executive Regional Development Australia							SA



NATIONAL CARP CONTROL PLAN
RESTORING NATIVE BIODIVERSITY

	Local Government Association of SA							SA
	DEW – A/Chief Executive - John Schutz and Sandy Caruthers							SA
	Sharyn Starick, SA Murray-Darling Basin NRM Board – Presiding member							SA
	Mike Williams, Regional Director, Natural Resources SA Murray-Darling Basin Region – DEW			NB. Claire's boss				SA
JUNE								
15-Jun	Region 2 Moira Shire Council	Video conference	N/A	Angus Verley	KH following up MB	Matt Barwick	AV to send agenda and Go-To link	VIC
17-Jun 20 Jun	Australian Local Government Association Conference (ALGA)	Part-funding stand with MDA	Canberra	Angus Verley & Emma Bradbury (MDA)	Confirmed	TBA	KH to follow-up with AV re requirements	National
TBA	NSW DPI	Quarterly meetings	Canberra	Geoff - Deputy Director General	TBA	Matt Barwick	Matt holds relationship	NSW
TBA	Hon. Niall Blair MLC. Minister for Primary Industries, Minister for Regional Water, and Minister for Trade and Industry, Deputy Leader of The Nationals Member of The Nationals	In person briefing	Sydney	TBA	To coordinate	Matt Barwick	Determine key messages for this meeting	NSW / National
JULY								
TBA	Ministerial Council	In person briefing	Canberra	E. Bradbury to advise	Awaiting	Matt Barwick		National
TBA	Native fish breeding groups	In person briefing	TBA	Seftons to identify key contacts	TBA	Matt Barwick		National
TBA	Destination NSW	In person briefing	Sydney	R Sefton to advise	TBA	Matt Barwick	Seftons / J. Schirmer to provide advice on strategy and messages ahead of each tourism engagement.	NSW
TBA	Tourism Victoria	In person briefing	Melbourne	TBA	TBA	Matt Barwick		VIC
TBA	South Australian Tourism Commission	In person briefing	Adelaide	TBA	TBA	Matt Barwick		SA
AUGUST								
29-30 August	Murray Darling Association (MDA) Conference	Speaking opp and/pr stand. \$1.5-2K value	Leeton	Angus Verley & Emma Bradbury (MDA)	Confirmed	TBA	KH to follow-up with AV re requirements	NSW/VIC/SA
TBA	Senate for Select Standing Committee	MB has sent initial follow-up	Mildura - houseboat	Rebecca Hegelby (Assist Dr Water - DAWR)	KH to follow-up once response received	Matt Barwick	Need to consider attendees (e.g. Joel Fitzgibbon MP, Niall Blair, Harold Clapham, Jacki Schirmer, Janet Howieson)	National / VIC



NATIONAL CARP CONTROL PLAN
RESTORING NATIVE BIODIVERSITY

TBA	Koi Association - follow-up meeting	MB / PM to contact	Sydney			Matt Barwick	Need to determine key message/s for this meeting	NSW/National
SEPTEMBER								
3-5 Sept	NSW Water Conference	Put forward speaker panel proposal focused on water utilities	Armidale	Mark Hely	Awaiting feedback	TBA	Once approved, speakers to be locked in	NSW
TBA	NSW DPI	Quarterly meetings	Canberra	Geoff - Deputy Director General	TBA	Matt Barwick	Matt holds relationship	NSW
TBA	NSW Irrigators & Irrigators Council	In person briefing	Sydney	Steve Whan	KH / RS to contact	Matt Barwick		NSW
TBA	MDBA Board Presentations	TBA	Canberra	Vicki Woodburn / Emma Bradbury	KH to follow-up	Matt Barwick		NSW/VIC/SA
OCTOBER								
13-15 Oct	Gone Fishing Day	Events	National	Brett Cleary	See above	Local reps	Seftons will devise separate comms plan	National
TBA	Indigenous engagement	In person meeting/s	TBA	TBA	KH to liaise with MB and PM	Matt Barwick		National
TBA	NRM cross-border alliance groups	In person meeting/s	TBA	TBA	TBA	TBA	TBA	NSW/VIC/SA
NOVEMBER								
	TBA							
DECEMBER								
	TBA							

National Carp Control Plan – Weekly Media Report

26 March – 1 April 2018

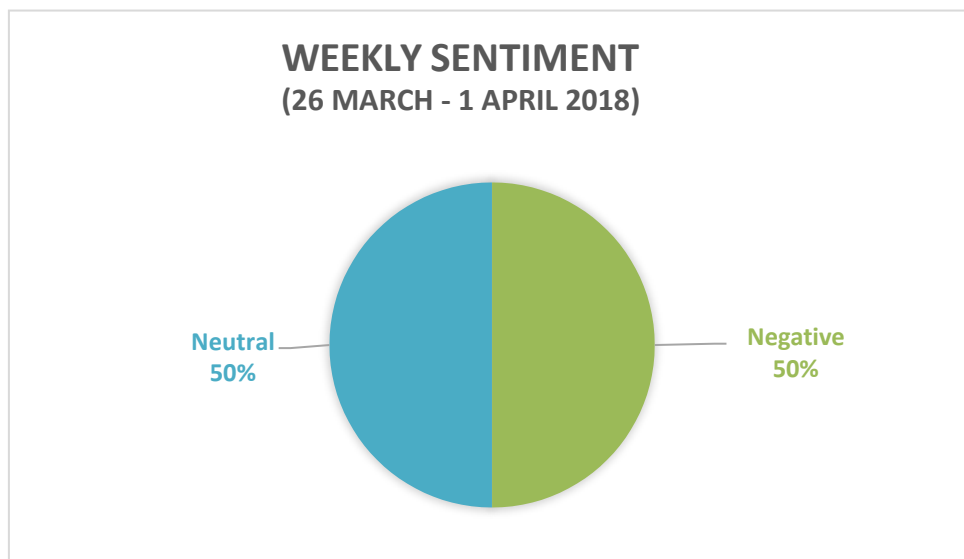
Total NCCP articles published
this week: 2

Total NCCP articles published
this month:

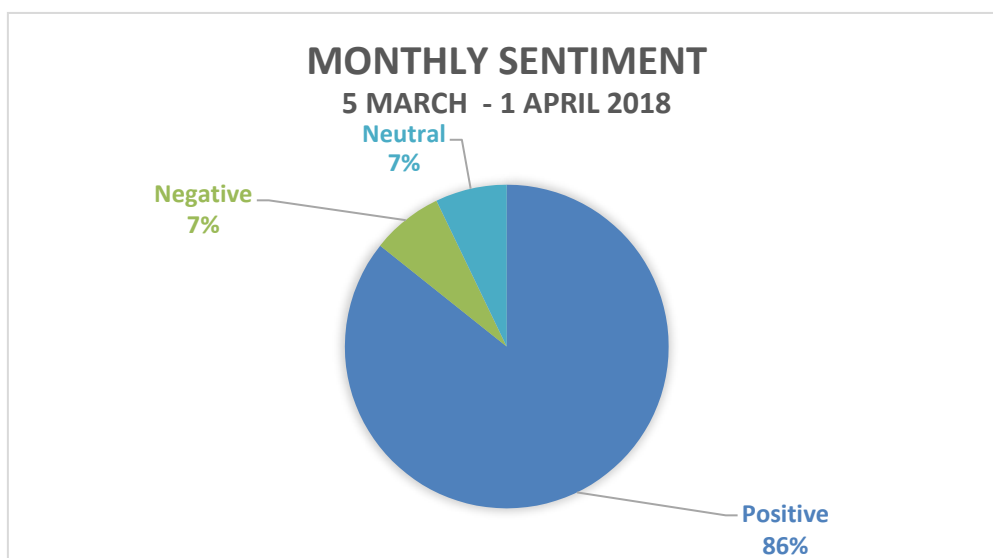
18

The below pie chart illustrates the number of articles and the general 'sentiment' for the National Carp Control Plan, for the week and for the month. For more on how to read the chart, see below.

Number of Articles and Sentiment in media – this week



Number of Articles and Sentiment in the media – month (March)



Number of Articles and Sentiment in media – this week

- In the period 26 March – 1 April 2018, the National Carp Control Plan received coverage in two print articles.
- ❓ One of these stories was neutral in sentiment and the other was negative.
- ❓ The negative article was a small editorial piece and the neutral article discussed the previous carp clean up efforts in Lake Sorrell, Tasmania.

Number of Articles and Sentiment in media – month

- ❓ This month (March), NCCP has received coverage in 18 articles.

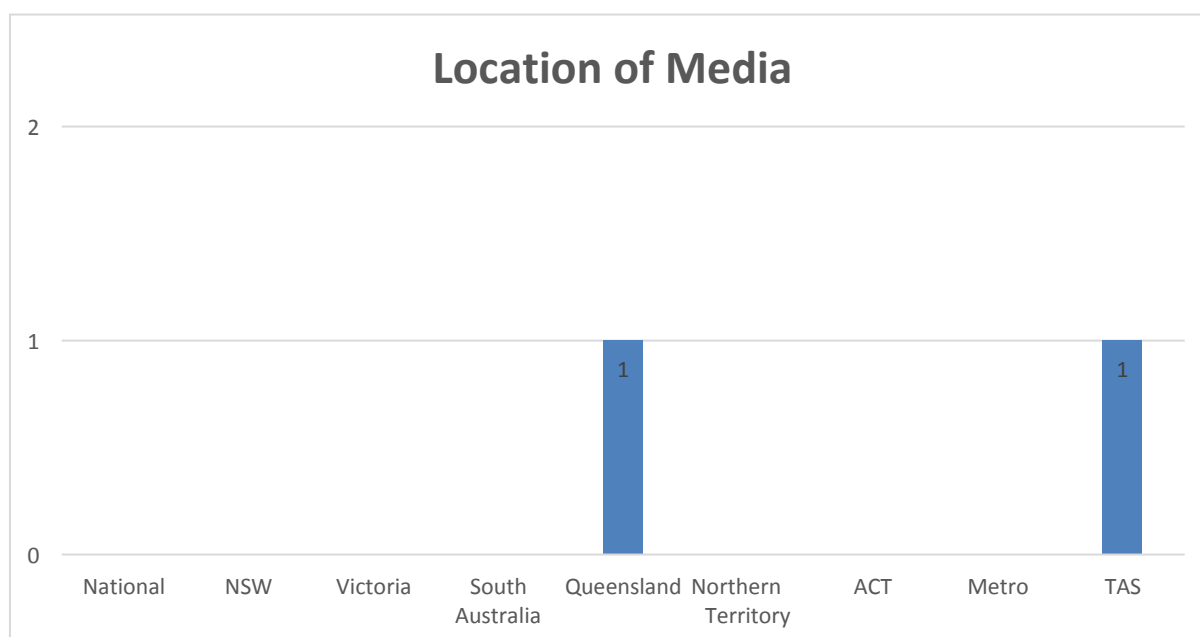
How to read the chart:

The pie chart represents the Neutral, Positive and Negative sentiment of media monitored for the week.

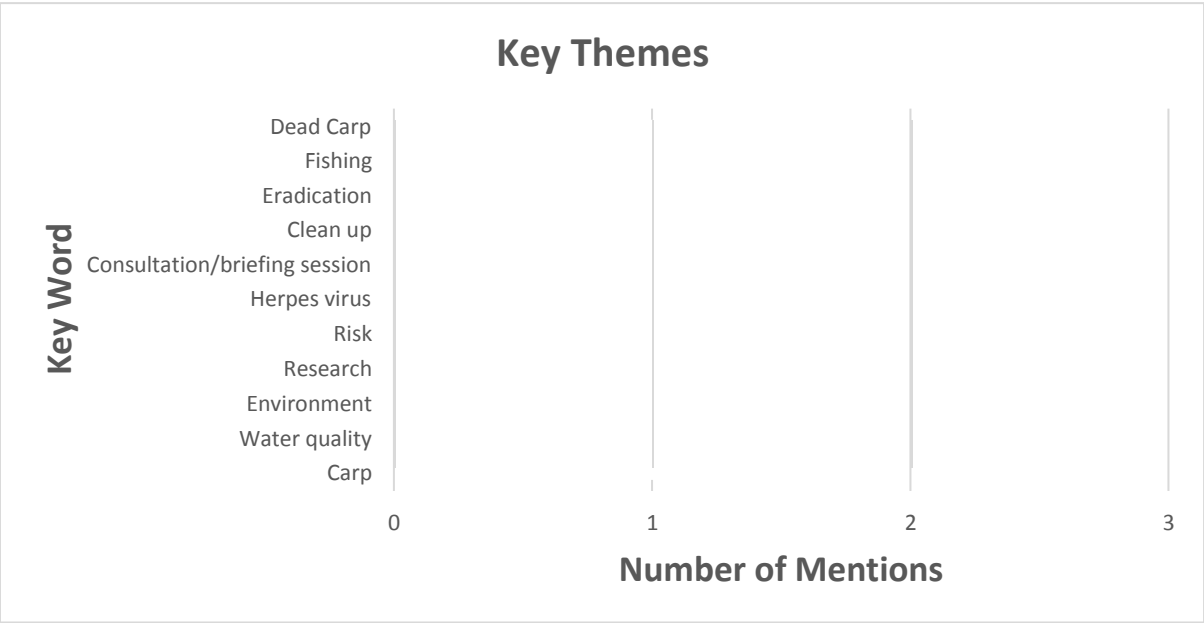
Sentiment is based on a simple points system, where 1 point is given to each article which has been deemed positive, negative or neutral.

Location of Media - week

- The below chart identifies what state the articles appear – they are broken down in to state (individual), national or metro locations.



Key themes/messages in media – this week



2 In the two articles monitored this week the key themes were dead carp, environment, consultation sessions and clean up. Although the theme may be mentioned more than once in the article, this is only captured once to show what the key theme in the article was. An article may have more than one key theme.

National Carp Control Plan – Weekly Media Report

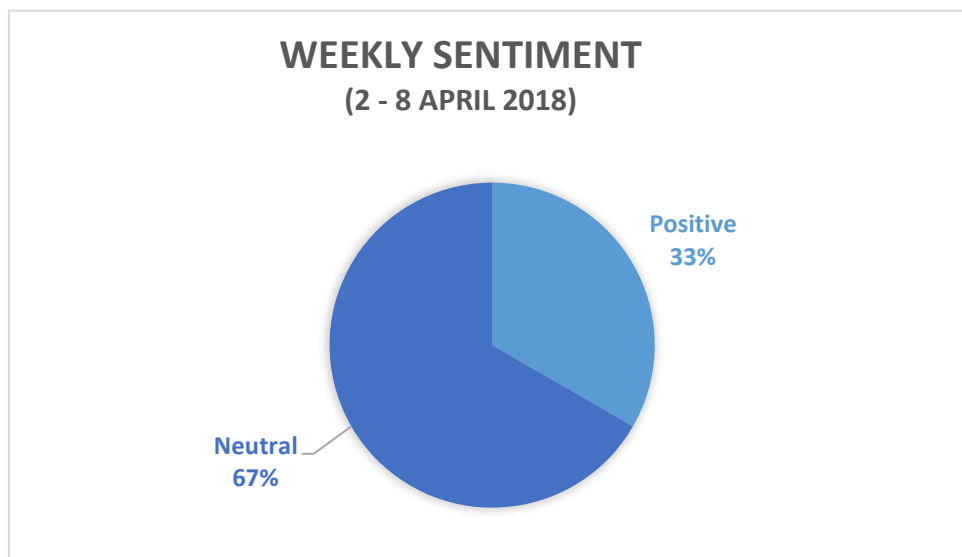
2 – 8 April 2018

Total NCCP articles published
this week: 3

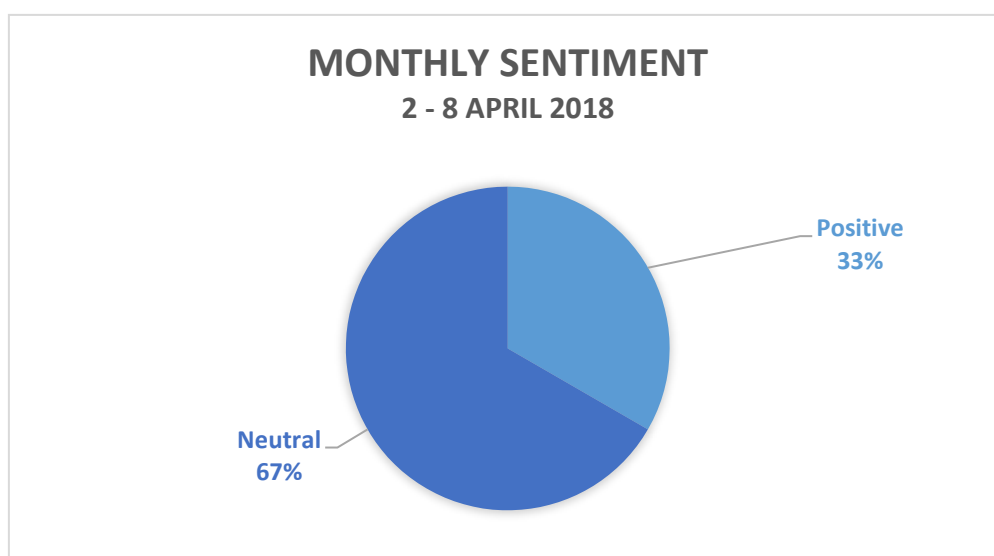
Total NCCP articles published
this month: 3

The below pie chart illustrates the number of articles and the general 'sentiment' for the National Carp Control Plan, for the week and for the month. For more on how to read the chart, see below.

Number of Articles and Sentiment in media – this week



Number of Articles and Sentiment in the media – month (April)



Number of Articles and Sentiment in media – this week

- ❓ In the period 2- 8 April 2018, the National Carp Control Plan received coverage in two print articles and 1 AM radio piece.
- ❓ Two of these stories were neutral in sentiment and not related directly to the NCCP or carp and the other was positive.
- ❓ The mainly positive feature was an ABC AM radio piece from Canberra and discussed a broad range of progress and concerns regarding the NCCP.

Number of Articles and Sentiment in media – month

- ❓ This month (April), NCCP has received coverage in 3 articles.

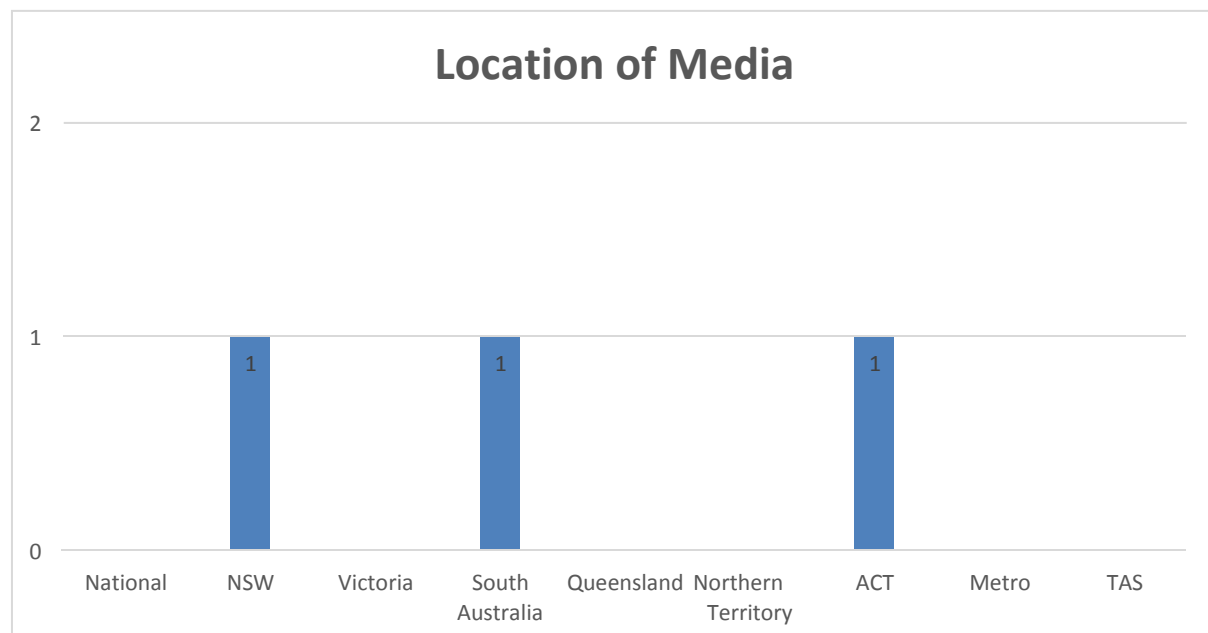
How to read the chart:

The pie chart represents the Neutral, Positive and Negative sentiment of media monitored for the week.

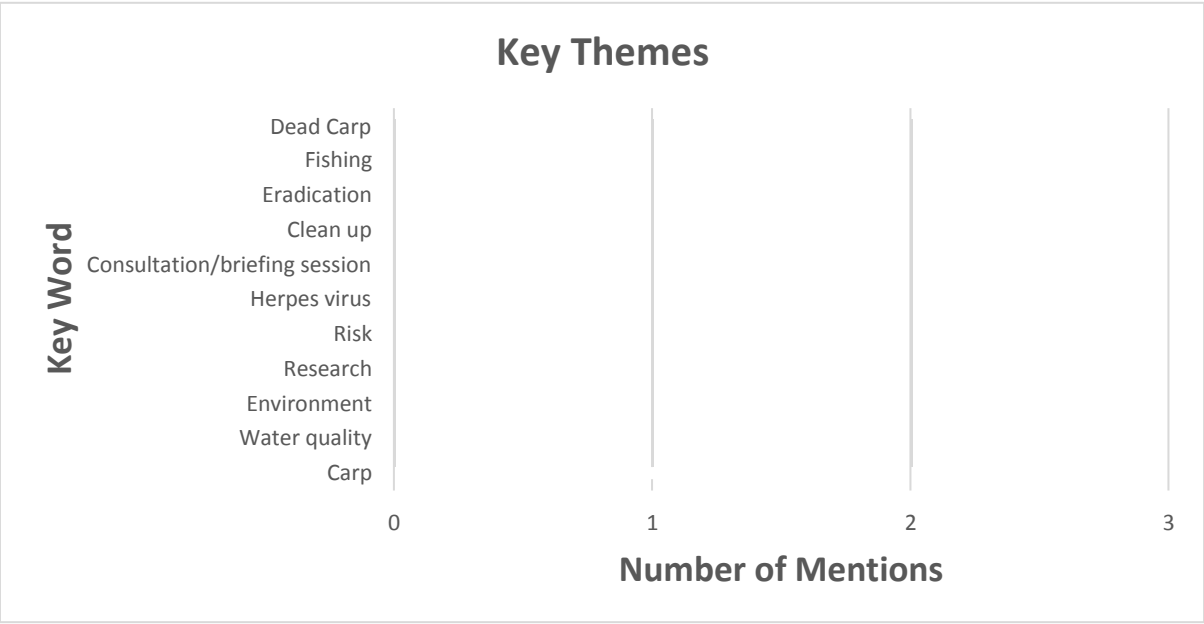
Sentiment is based on a simple points system, where 1 point is given to each article which has been deemed positive, negative or neutral.

Location of Media - week

- The below chart identifies what state the articles appear – they are broken down in to state (individual), national or metro locations.



Key themes/messages in media – this week



❓ In the media monitored this week all key themes were of concern and mostly mentioned in the ABC AM radio piece. Although the theme may be mentioned more than once in the article, this is only captured once to show what the key theme in the article was. An article may have more than one key theme.

National Carp Control Plan – Weekly Media Report

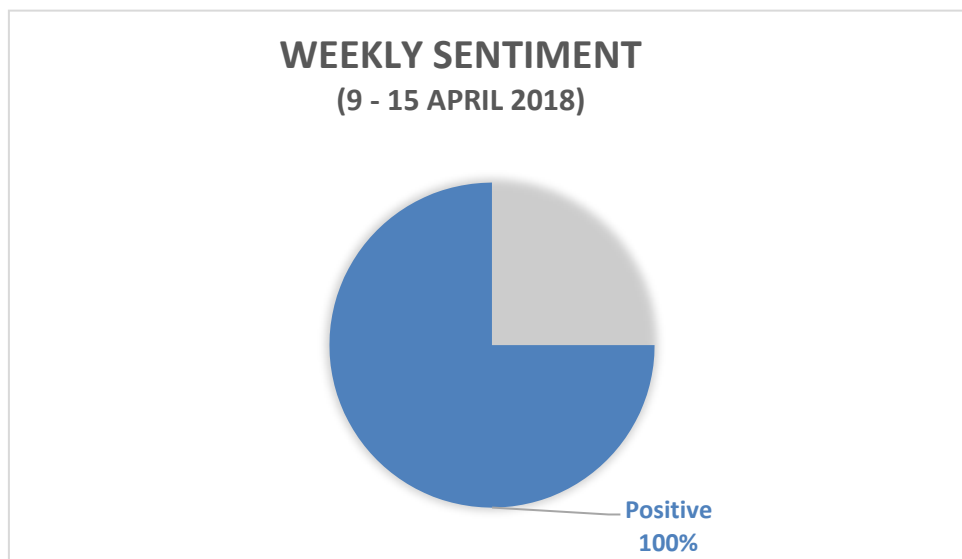
9 – 15 April 2018

Total NCCP articles published
this week: 8

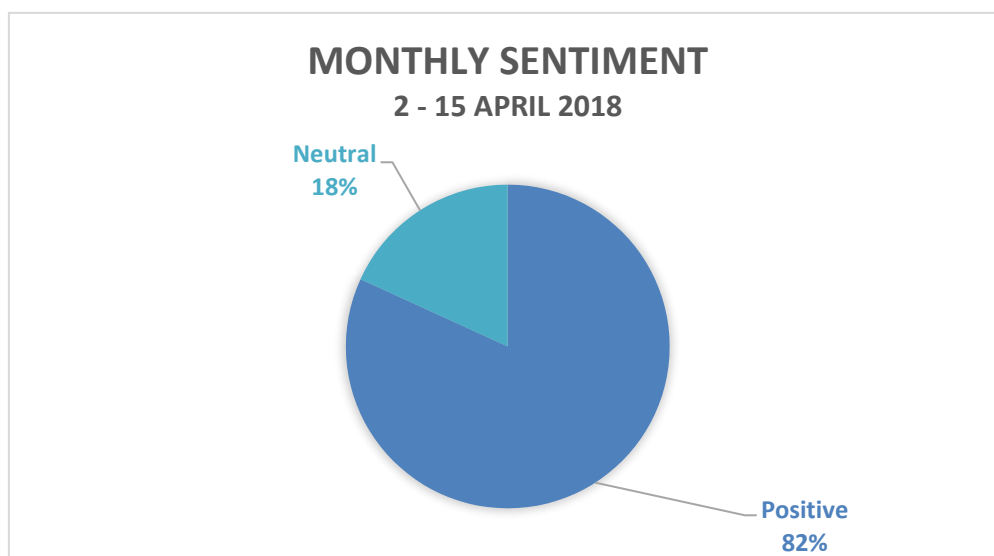
Total NCCP articles published
this month: 11

The below pie chart illustrates the number of articles and the general 'sentiment' for the National Carp Control Plan, for the week and for the month. For more on how to read the chart, see below.

Number of Articles and Sentiment in media – this week



Number of Articles and Sentiment in the media – month (April)



Number of Articles and Sentiment in media – this week

- ❓ In the period 9 - 15 April 2018, the National Carp Control Plan received coverage in five print articles, 2 television news features and 1 AM radio piece.
- ❓ All of these stories were positive in sentiment.
- Majority of these stories focused on either the need for carp control in Mawson Lake, South Australia or the ACT government's recent research and activity regarding Kambah Pool's carp population. Additionally, an article was analysed regarding native fish protection from carp in the greater Shepparton region.

Number of Articles and Sentiment in media – month

- ❓ This month (April), NCCP has received coverage in 11 articles.

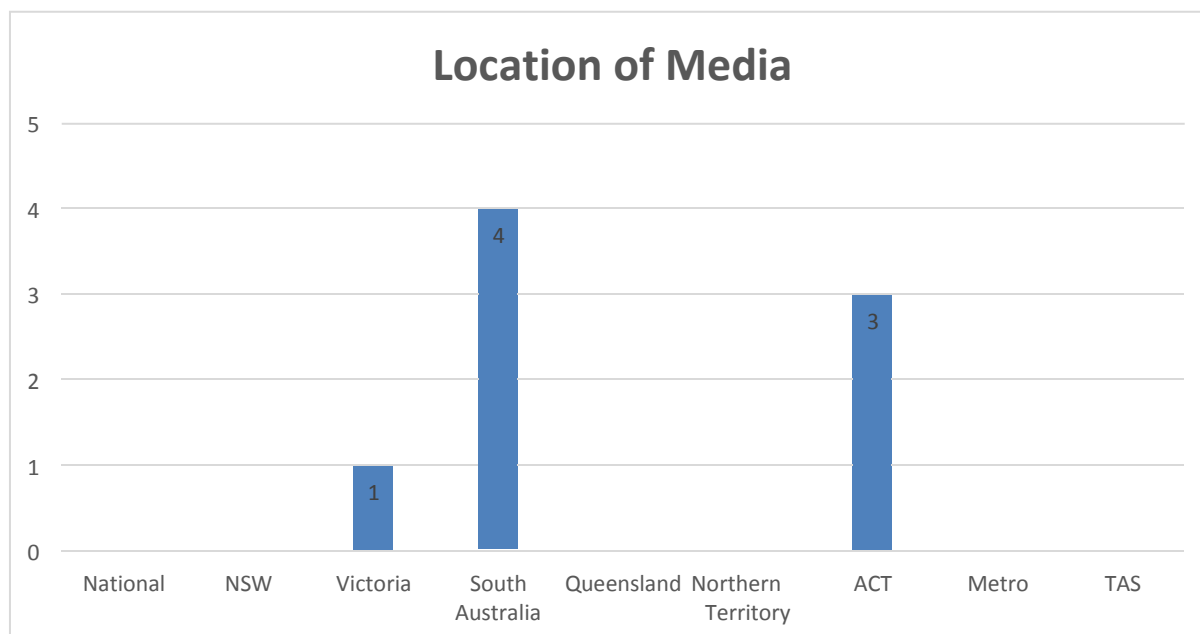
How to read the chart:

The pie chart represents the Neutral, Positive and Negative sentiment of media monitored for the week.

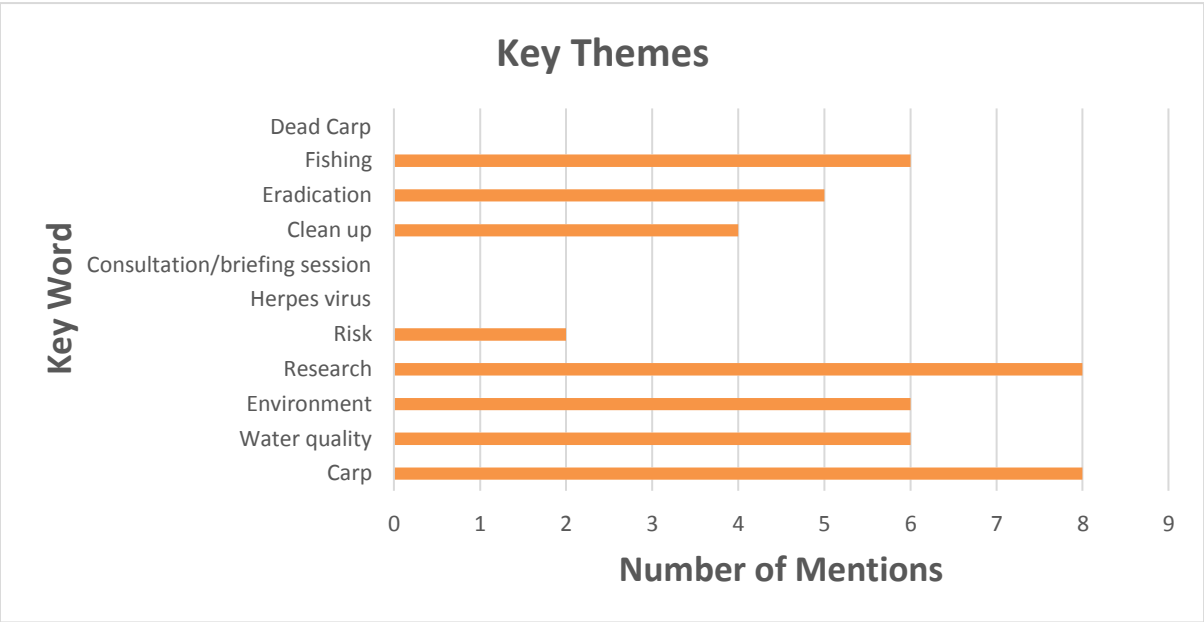
Sentiment is based on a simple points system, where 1 point is given to each article which has been deemed positive, negative or neutral.

Location of Media - week

- The below chart identifies what state the articles appear – they are broken down in to state (individual), national or metro locations.



Key themes/messages in media – this week



2 In the eight pieces monitored this week the key themes were research, environment, fishing and water quality. Although the theme may be mentioned more than once in the article, this is only captured once to show what the key theme in the article was. An article may have more than one key theme.

National Carp Control Plan – Weekly Media Report

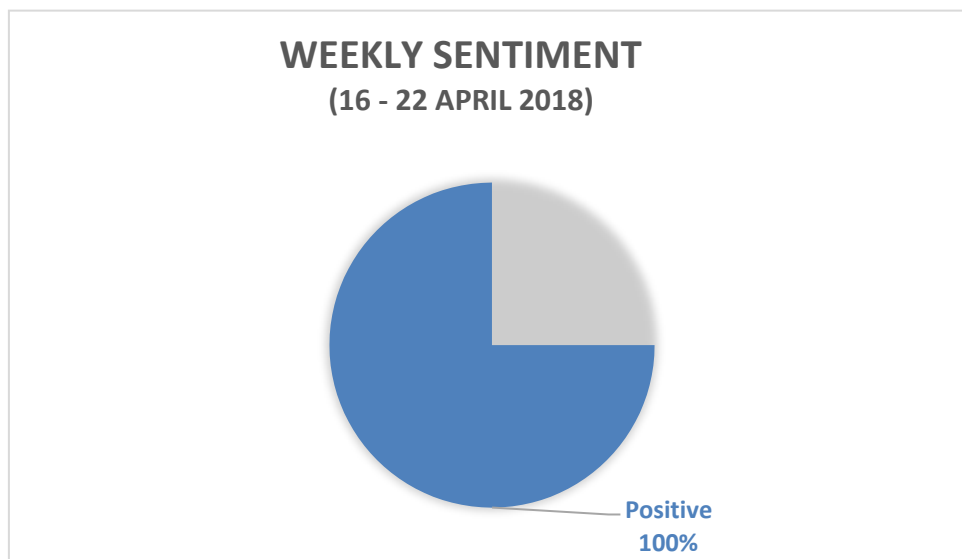
16 – 22 April 2018

Total NCCP articles published
this week: 4

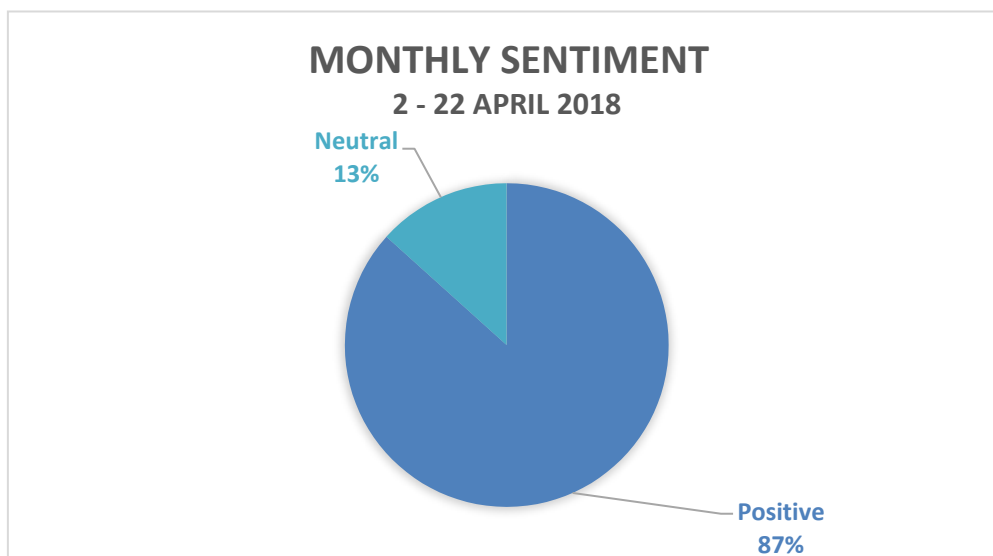
Total NCCP articles published
this month: 15

The below pie chart illustrates the number of articles and the general 'sentiment' for the National Carp Control Plan, for the week and for the month. For more on how to read the chart, see below.

Number of Articles and Sentiment in media – this week



Number of Articles and Sentiment in the media – month (April)



Number of Articles and Sentiment in media – this week

- ❓ In the period 16 - 22 April 2018, the National Carp Control Plan received coverage in two print articles and 2 AM radio pieces.
- ❓ All of these stories were positive in sentiment.
- ❓ Media from the ACT regarded the recent trials in Kambah Pool. Matt Beitzel was the spokesperson for both pieces.
- ❓ Additionally, an article was analysed regarding electrofishing in Shepparton and also an AM radio piece in Renmark SA regarding the greater status/role/research of the NCCP.

Number of Articles and Sentiment in media – month

- ❓ This month (April), NCCP has received coverage in 15 articles.

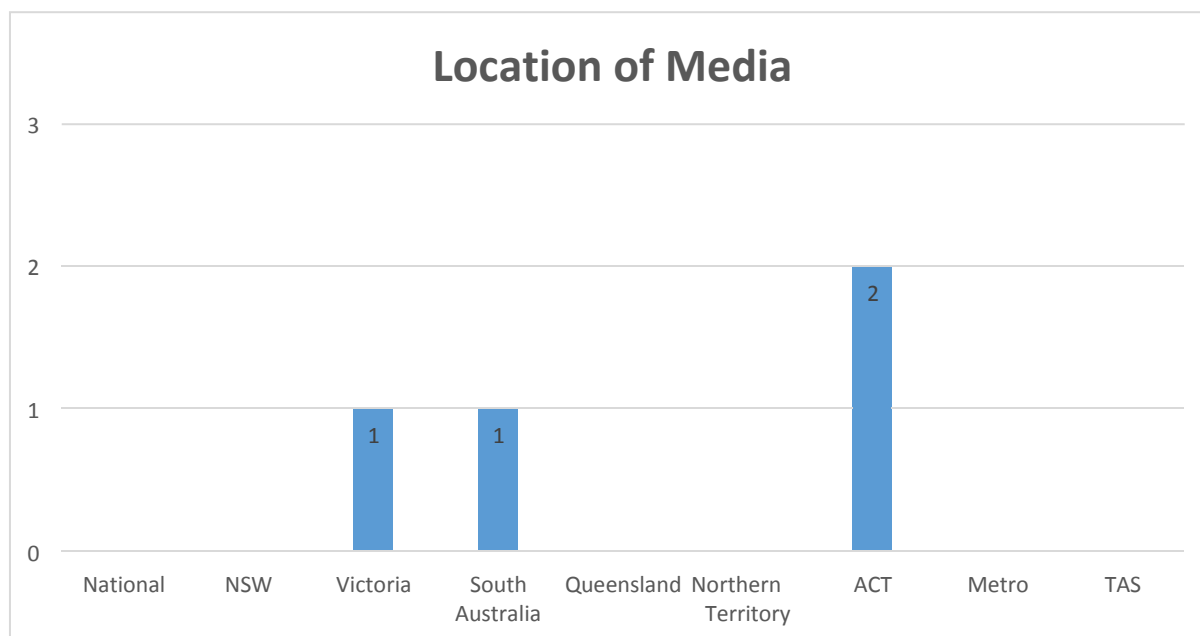
How to read the chart:

The pie chart represents the Neutral, Positive and Negative sentiment of media monitored for the week.

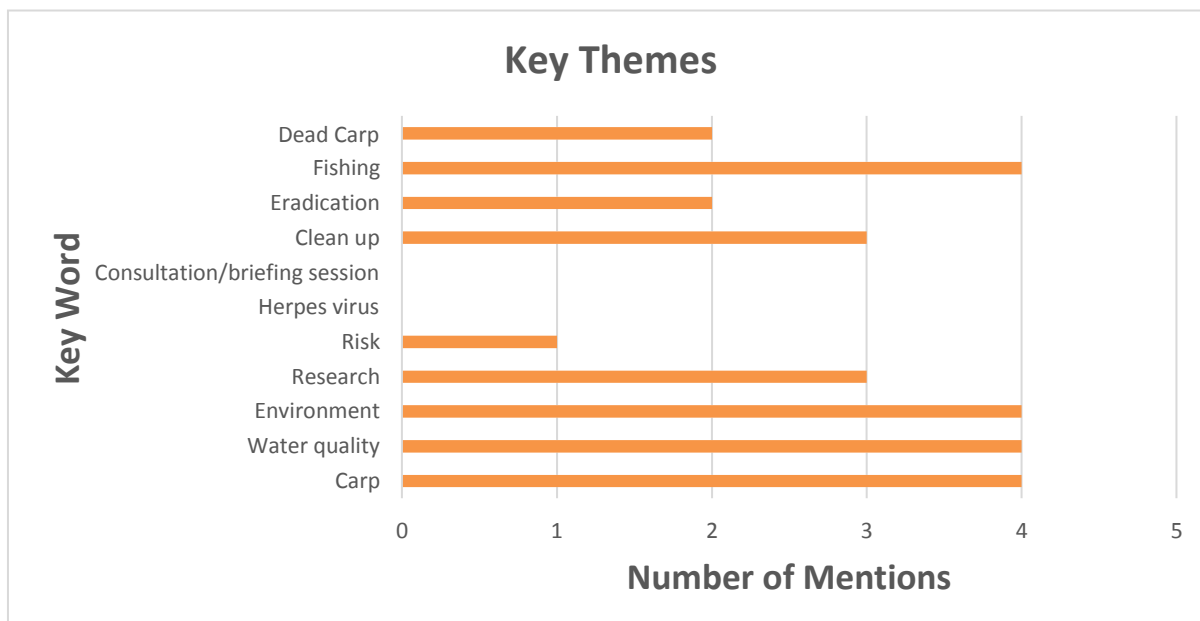
Sentiment is based on a simple points system, where 1 point is given to each article which has been deemed positive, negative or neutral.

Location of Media - week

- The below chart identifies what state the articles appear – they are broken down in to state (individual), national or metro locations.



Key themes/messages in media – this week



- ❓ In the four pieces monitored this week the key themes were carp, environment, fishing and water quality. Although the theme may be mentioned more than once in the article, this is only captured once to show what the key theme in the article was. An article may have more than one key theme.

National Carp Control Plan – Weekly Media Report

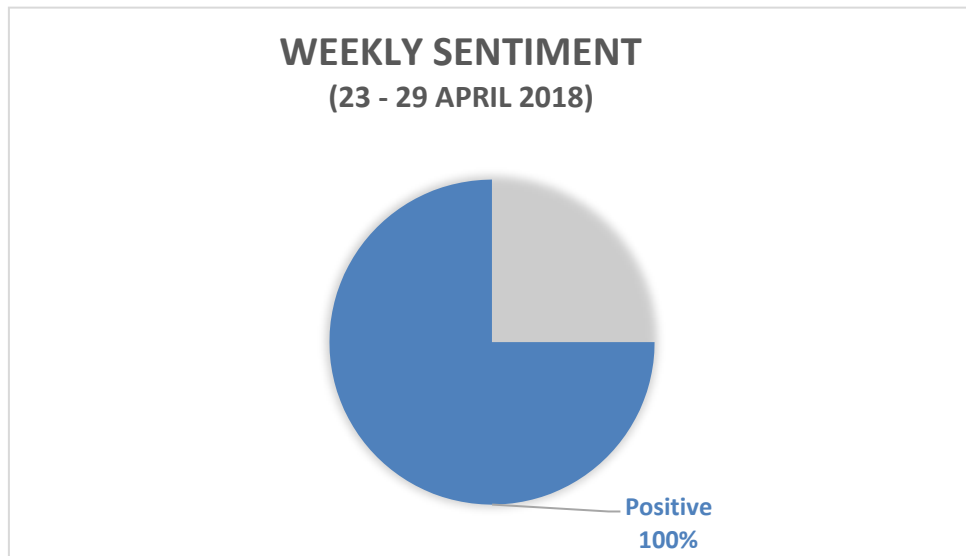
23 – 29 April 2018

Total NCCP articles published
this week: 2

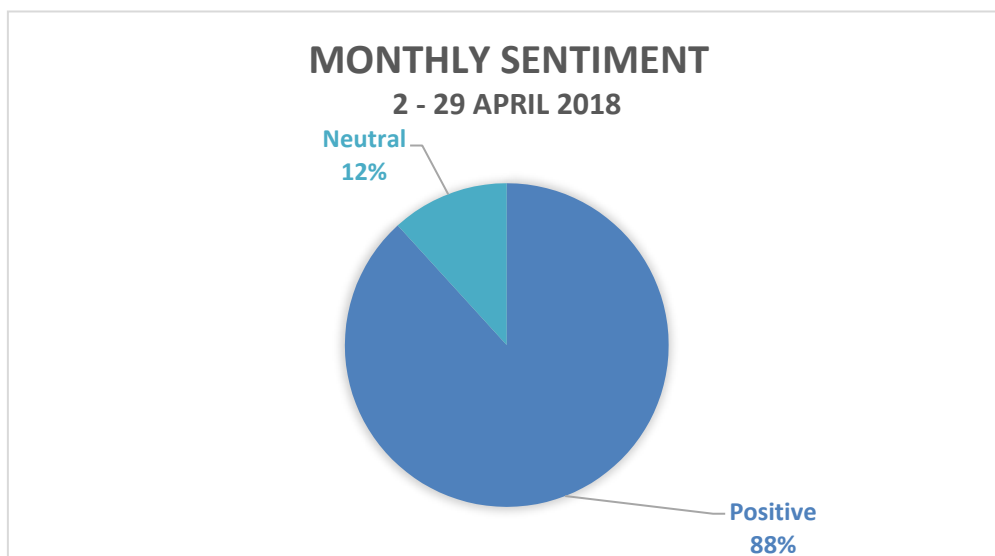
Total NCCP articles published
this month: 17

The below pie chart illustrates the number of articles and the general 'sentiment' for the National Carp Control Plan, for the week and for the month. For more on how to read the chart, see below.

Number of Articles and Sentiment in media – this week



Number of Articles and Sentiment in the media – month (April)



Number of Articles and Sentiment in media – this week

- ❓ In the period 23 - 29 April 2018, the National Carp Control Plan received coverage in two print articles.
- ❓ Both stories were mostly positive in sentiment.
- ❓ Articles were located in metro Melbourne print and issues regarding native fish restocking were of key concern.

Number of Articles and Sentiment in media – month

- ❓ This month (April), NCCP has received coverage in 17 articles.

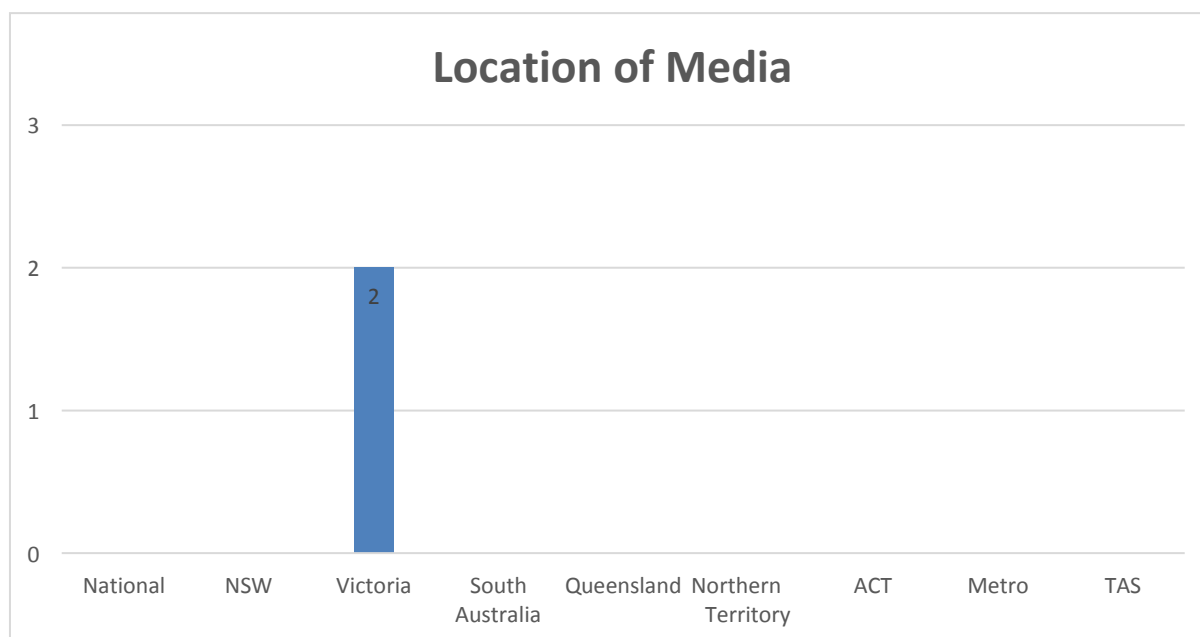
How to read the chart:

The pie chart represents the Neutral, Positive and Negative sentiment of media monitored for the week.

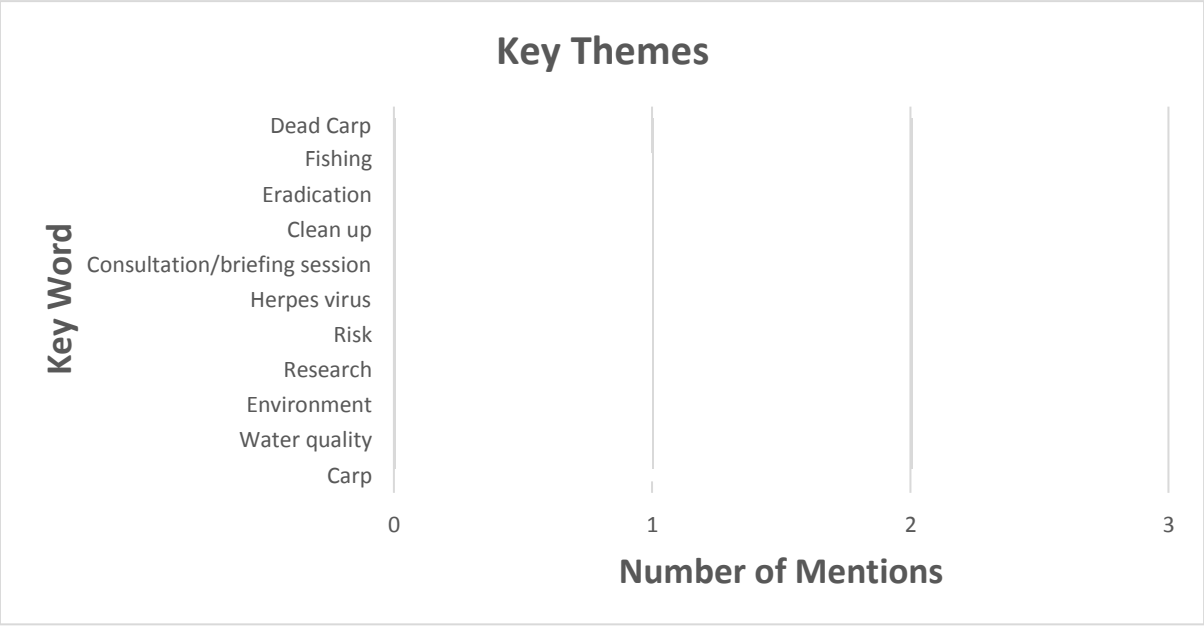
Sentiment is based on a simple points system, where 1 point is given to each article which has been deemed positive, negative or neutral.

Location of Media - week

- The below chart identifies what state the articles appear – they are broken down in to state (individual), national or metro locations.



Key themes/messages in media – this week



❓ In the two pieces monitored this week the key themes were carp, environment, research, fishing and water quality. Although the theme may be mentioned more than once in the article, this is only captured once to show what the key theme in the article was. An article may have more than one key theme.

PT-04 - MILESTONE PROGRESS REPORT

FRDC PROJECT NUMBER: 2017-164

Title: NCCP Communications Program 2018

MILESTONE NUMBER: 6

DATE DUE: 31 May 2018

PRINCIPAL INVESTIGATOR: Seftons

OVERALL PROJECT PROGRESS:

Milestone Status

Has this milestone been achieved (Yes/No)	Yes
Will the project be completed according to the current milestone schedule (Yes/No)	Yes

PROJECT PROGRESS AGAINST PROJECT OBJECTIVES

Significant progress was made with the communications and stakeholder engagement program during May 2018. Extensive work has been undertaken across the media relations, stakeholder engagement and issues management aspects of the program.

With regards to media relations, previously there has been limited information to share with the public as many research projects are still underway or in peer review process. However, NCCP did release some information relating to the carp utilisation work which was received positively. Additional media releases have also been prepared for the epi-modelling work, Clearer Waters videos series and the launch of the Bang the Table website – these are currently with NCCP for review.

NCCP also took a proactive approach to responding to mis-information in the media in relation to research projects underway with a number of briefing notes, key messages, response letters and statements prepared for NCCP and affiliated research partners.

NCCP has also embarked on proactive approach to stakeholder engagement in effort to ensure stakeholders were informed of the program's status and reassured that a suitable period of time will be available to provide feedback on draft recommendations. This approach was received positively with many stakeholders thanking the NCCP for the update. This was underpinned by the fact that the yoursay.carp.gov.au website was made public and provides an additional platform to share information and respond to community queries, concerns and ideas. More work is required to promote this site, this will be undertaken by NCCP once clarity on the projects timing and funding is resolved. Additionally, the first stakeholder webinar was held for members of the public to provide greater access to researchers and work underway.

A webinar was held for stakeholders with NCCP and Water NSW's Joe Pera, who is leading some water quality trial research work. Future webinars have also been recommended as an interim measure to share greater insight to research work underway, before findings are available.

Program milestones and outputs were all met. Specific content produced included:

- Carp utilisation media release (distributed)
- Clear Waters and Bang the Table media release written (awaiting approval)

- Response to UK Fish Laboratories letter
- Response to SMH Opinion Piece
- SMH Letter to Editor (revised from SMH Opinion Piece)
- Talking points for Joe Pera ahead of OZ Water conference
- Briefing notes for NCCP ahead of interview with The Land
- Strategy document to support the launch of Bang the Table's yoursay.carp.gov.au page
- Social Licence to Operate strategic notes for NCCP program
- Media reporting flowchart for mis-information
- Bang the Table response summary / flow chart
- Panel Discussion Pitch for Water Conference
- Reactive messaging for use as required following Landline Story
- Epi modelling media release drafted (awaiting approval)
- Strategic feedback to Paul Brown commercial fishers opinion piece for Weekly Times
- Updated NCCP Key Messages document (awaiting approval)
- Draft responses to yoursay.carp.gov.au questions
- Draft responses to Carp Inbox questions
- Content for Murray Darling Association May Newsletter
- NCCP May Newsletter copy
- Communications Working Group Agenda, Briefing Papers, Minutes
- Updated media alerts and advertisement template for Forbes Community Consultation event

Repeat the following three sections for each milestone in the period being reported on:

1. ORIGINAL MILESTONE DATE AND TITLE:

31/05/2018 – Milestone 6

2. REVISED MILESTONE DATE AND TITLE:

n/a

3. PROGRESS AGAINST MILESTONE (Achieved/Not Achieved):

ACHIEVED

- Liaison with key stakeholder groups to ensure they are informed of program status:
 - ALGA Conference – secure involvement for NCCP as joint participants with Murray Darling Association (NCCP since declined involvement due to resourcing limitations)
 - Water Conference Panel Discussion – developed pitch for NCCP involvement. Approved by conference organisations, scheduled for September 2018.
 - Letter to key stakeholders – drafted update on program status letter for key stakeholders to quell uncertainty and provide reassurance
 - NCCP & Water NSW Webinar – recommended a webinar be held for stakeholders to provide greater access to research projects. Organised and hosted a webinar in late May for stakeholders around the Water NSW water quality trials research.
 - Shadow Minister Fitzgibbon's office – approached office to secure meeting for NCCP program briefing. Meeting request accepted, awaiting NCCP to confirm availability
 - South Australia Government NCCP Steering Committee – liaised with SA to secure NCCP's Matt Barwick to present while in South Australia
 - OzWater – Water NSW Joe Pera scheduled to present at OzWater conference. Speaking notes prepared for him to address negative media commentary regarding results.
 - Australian Vet Association – requested date for briefing meeting with AVA. AVA confirmed availability and interest, meeting to be confirmed once changes to program messaging are approved
 - Clean Up Australia Day – set up and participated in briefing meeting with Clean Up Australia Day to explore partnership opportunities and also identify relevant key learnings.
 - Australian Rec Fishing – approached and explored possibility to partner with Australian Recreational Fishing Association for their Gone Fishing Day. Very keen to partner with NCCP, further planning is underway.
 - Murray Darling Association – coordinated briefing meetings with MDA's Region 5 and BROCC meetings to ensure Mayors were updated on NCCP program.

- CottonInfo – liaison with Stacey Vogel to discuss NCCP representation at Cotton Conference
- Management of the Communications Working Group, in conjunction with NCCP
 - Development of agenda for interim CWG tele meeting to provide critical updates ahead of Landline and May meeting
 - Development and finalisation of program update documents for telemeeting including Deliverables update, media relations update, stakeholder engagement update, risk register update
 - Facilitation of interim telemeeting with CWG members
 - Meeting minutes from telemeeting and circulation to members
 - Development of Agenda for CWG May Meeting
 - Briefing of new Chair, Ian McDonald ahead of Adelaide Meeting
 - Development of briefing papers to support CWG Agenda (including media relations update, stakeholder engagement update, deliverables update, risks updates, digital media update)
 - Liaison with members to encourage attendance at CWG meeting
 - Attendance at both the PI Workshop and CWG meetings in Adelaide, SA
 - Meeting minutes from CWG Adelaide meeting
 - Participated in a breakout meeting with select CWG members to discuss NCCP's social licence to operate. Developed strategic notes for NCCP ahead of meeting with DAWR's Louise Pemble, Jacki Schirmer, NCCP and Seftons.
 - Liaison with NSW DPI and Queensland Government re representation on CWG
 - Meeting with Cotton Info Stacey Vogel re involvement
- Development of supporting communications collateral
 - NCCP considered updating Council Brochure for MDA meetings, advised to hold off until program timeline was confirmed.
 - NCCP May Newsletter
 - Murray Darling Association May Newsletter Update
 - Bang the Table content
- Development of two proactive media releases per month
 - Drafted and distributed the Carp Utilisation media release based on research findings
 - Drafted the epi-modelling media release (awaiting approval from researcher)
 - Drafted the Clearer Waters and Bang the Table media release (awaiting approval)
 - Drafted media alert template ahead of LLS Forbes community consultation event (distributed)
 - Weekly Times Op Ed – feedback to content developed by La Trobe University's Paul Brown (recommended holding on distribution)
- Preparation of reactive responses to all relevant media within 24 hours
 - Developed holding statement notes in case required following Landline program airing
 - Provided talking points / briefing notes for NCCP's Matt Barwick ahead of Fairfax's The Land interview
 - Drafted response to SMH Opinion piece
 - Adapted opinion piece response and developed SMH Letter to the Editor on behalf of NCCP (published)
 - Drafted response in conjunction with NCCP to UK Fish Laboratories letter which was circulated on social media
 - Verbal counsel to NCCP in relation to negative social media commentary
 - Daily media monitoring on issues/challenges to the NCCP and relevant information is forwarded on to NCCP team.
 - Weekly media analysis report provided with sentiment and key themes listed. Each story picked up on Isentia and BuzzWords is analysed, with about 10 questions answered for each, with data kept in a spreadsheet which is updated daily and forms the basis for the report.
 - Key themes are noted and issues management response is developed.
- Ongoing liaison with FRDC to identify and respond to threats
 - Daily phone calls and emails to FRDC/NCCP to discuss next steps and to identify issues.
 - Weekly media analysis report developed and provided
- Supply of communications materials for upload to website and social media

- Landline segment for uploading to website
- Carp utilisation media release for uploading to website
- Counsel on other media articles relevance for website
- UK Fish Laboratories letter for website
- SMH Opinion Piece response for uploading to website
- Bang the Table content management
 - Development of website strategy document
 - Development of website response flow chart
 - Development of carp utilisation content for website
 - Management of questions received via Bang the Table (one approved, awaiting approval on other responses from NCCP)
- Carp Inbox Support
 - Provided draft response to Lady Nora Preston
 - Provided draft response for Shanti Ditter

NOT ACHIEVED

n/a

PUBLICATIONS/PRODUCTS

- Carp Utilisation media release
- The Land feature article
- Landline National Carp Control Plan segment
- Clearer Waters / Bang the Table draft media release (awaiting approval)
- Epi-modelling draft media release (awaiting approval from researcher)
- Strategic plan for NCCP Bang the Table website
- Strategic recommendations regarding NCCP's Social Licence to Operate
- Response flow chart for NCCP mis-reporting
- Response flow chart for Bang the Table requests
- Updated briefing kit for NSW LLS Forbes Consultation including media alert and advertising template
- Response to SMH Letter to Editor
- Response to UK Fish Laboratories Letter
- Updated NCCP key messages (awaiting approval / finalisation)
- Speaking points for Water NSW Joe Pera, CSIRO re Landline
- Fairfax partnership NCCP story ideas.
- Murray Darling Association May Newsletter
- NCCP Newsletter - May
- Weekly media analysis report 7.5.2018
- Weekly media analysis report 14.5.2018
- Weekly media analysis report 21.5.2018
- Weekly media analysis report 28.5.2018

SPECIAL CONDITIONS

N/A

INTELLECTUAL PROPERTY ISSUES ARISING:

N/A

CONTACT WITH BENEFICIARIES:

- Members of the Communications Working Group
- Chairs of the Science Advisory Group and Policy Advisory Group
- Local Land Services
- Victorian Government's NCCP State Lead Craig Ingram

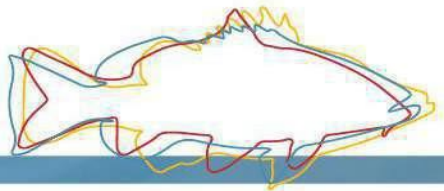
- Department of Agriculture and Water Resources
- Shadow Minister Joel Fitzgibbon's Office
- Murray Darling Association and member councils
- CSIRO
- Water NSW
- Arthur Rylah Institute
- Curtin University
- University of Canberra's Jacki Schirmer
- Australian Veterinarian Association
- Australian Recreational Fishers Association
- Clean Up Australia Day Council
- Cotton Info re Cotton Conference
- Water Conference organisations
- Australian Local Government Association
- South Australian Government Steering Committee
- La Trobe University
- Centre for Invasive Species Solutions

PROGRESS AGAINST COMMUNICATION & EXTENSION PLAN:

The communications program is progressing positively with all agreed outputs met. The communications activities have so far aligned with the objectives of this project. The objectives are to inform and engage communities and stakeholders about the NCCP; widely communicate the NCCP process; provide opportunities for community input into the NCCP; support the running of effective, informative and clear public information sessions; support and enhance FRDCs reputation through developing high quality materials and managing and delivering the project with high professionalism.

VARIATIONS TO PROJECT:

N/A



MEDIA RELEASE

10 May 2018

How do you use 10 tonnes of dead carp?

Curtin University researchers are investigating options for the sustainable use of the carp biomass that could result from the potential release of Cyprinid herpesvirus 3 (carp virus), under the National Carp Control Plan (NCCP).

The research project, *Assessment of options for utilisation of virus-infected carp*, involves laboratory-based processing trials, as well as commercial-scale trials of processes that produce usable carp-based products including fertilisers, compost, fishmeal and aquaculture feed ingredients.

Lead researcher Dr Janet Howieson, from the School of Molecular and Life Sciences at Curtin University, said the objective is to provide the NCCP with a range of efficient, effective and appropriate uses for carp biomass, and that all methods are being carefully explored.

"The research is designed to deliver detailed cost-benefits analyses of the various carp utilisation processes being investigated including attention to harvest strategies, transport logistics and fish quality at various locations," Dr Howieson said.

"Identifying local solutions and a community based approach to using carp biomass is a key component of the project."

Researchers recently completed a commercial-scale trial in partnership with Goulburn Valley Water in Victoria to separate two tonnes of dead carp into solids for local composting trials and liquids for further laboratory-based digestion trials looking at biogas production. Another 300kg of whole carp was sent to a nearby worm farm.

This followed a similar trial in Port Lincoln, South Australia using enzyme hydrolysis to break down 10 tonnes of carp biomass into smaller peptides and amino acids, which can be used for organic fertiliser or as an aquaculture or animal feed ingredient. Outcomes for the remaining bones and scales are also being investigated.

"We are considering the feasibility of using carp waste as insect feed, specifically for the Black Soldier Fly, which produces larvae that can be used as high quality aquaculture feed. Products from the insect larvae feeding trials will then be tested in fish feeding trials to evaluate market opportunity," Dr Howieson said.

A large scale composting trial is also being undertaken with carp biomass with different composting methods and substrates being tested with monitoring and evaluation being conducted throughout the trial.

NCCP National Coordinator Matt Barwick says identifying economically viable and productive uses for carp is an essential part of the NCCP's clean-up strategy.

"We know there are large volumes of carp in our waterways, so working out what to do with the carp biomass if biocontrol proceeds provide us with a measured approach to help inform NCCP recommendations and the subsequent decision-making process," Mr Barwick said.

"One of the most frequent comments received at our community consultation sessions relate to how we can best use potential carp biomass. We are encouraging the public to engage with the NCCP to share their thoughts and opinions in relation to the impact of carp, the proposed methods for reducing carp numbers and possible options for carp biomass use. It is a collaborative plan and one that we're keen to ensure reflects the thoughts and opinions of all stakeholders."

Other NCCP research projects underway include completion of trials testing the susceptibility of non-target species to the carp virus, strategies for cleaning up carp if the carp virus is released and biomass estimations to determine how many carp inhabit Australia's aquatic environments.

In addition to research, a comprehensive stakeholder engagement plan is being undertaken to consult with, and seek feedback from the general public and special interest groups. Results from this consultation will be made available to the public via the NCCP website.

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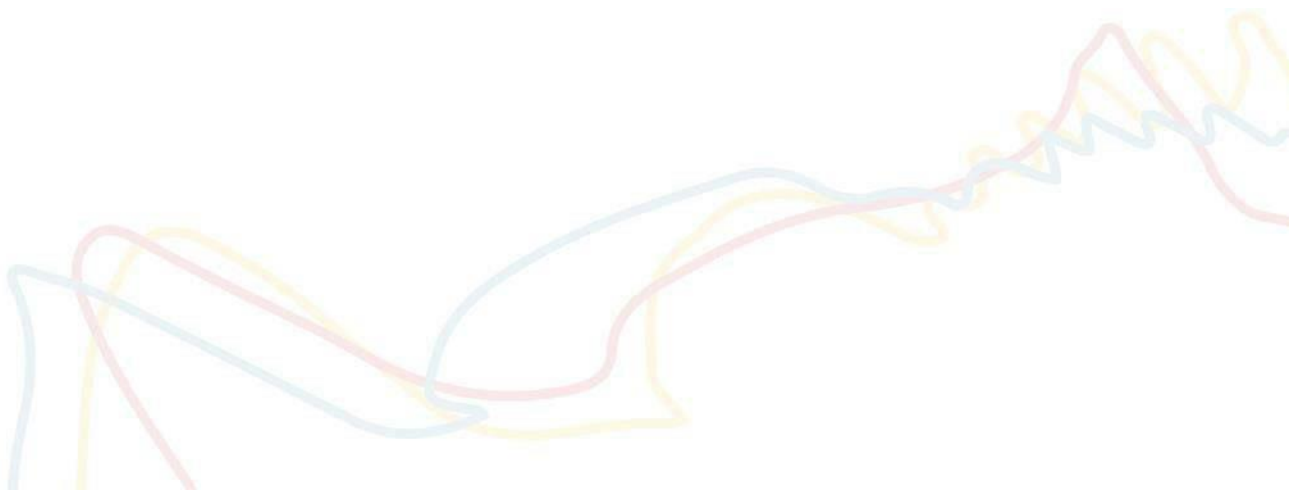
About the National Carp Control Plan

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For more information visit www.carp.gov.au

Media inquiries Katie Paynter
0417 057 243
katie.paynter@seftons.com.au

Lucien Wilkinson, Media Consultant, Curtin University
Tel: (08) 9266 9185 Mobile: 0401 103 683

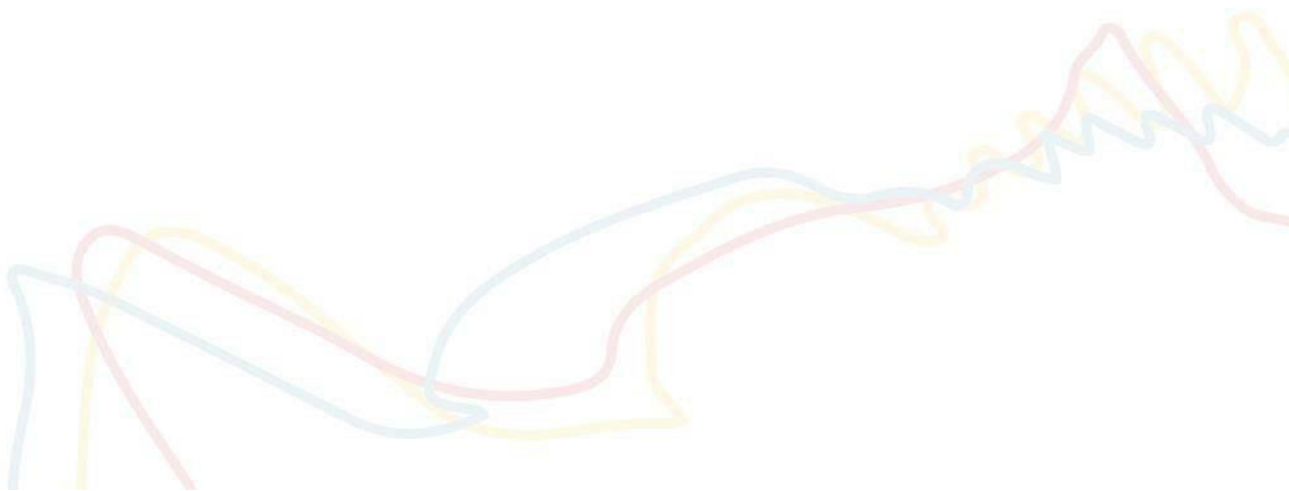


Email: lucien.wilkinson@curtin.edu.au
Web: <http://news.curtin.edu.au/media-centre/>

Twitter: [@CurtinMedia](https://twitter.com/CurtinMedia)

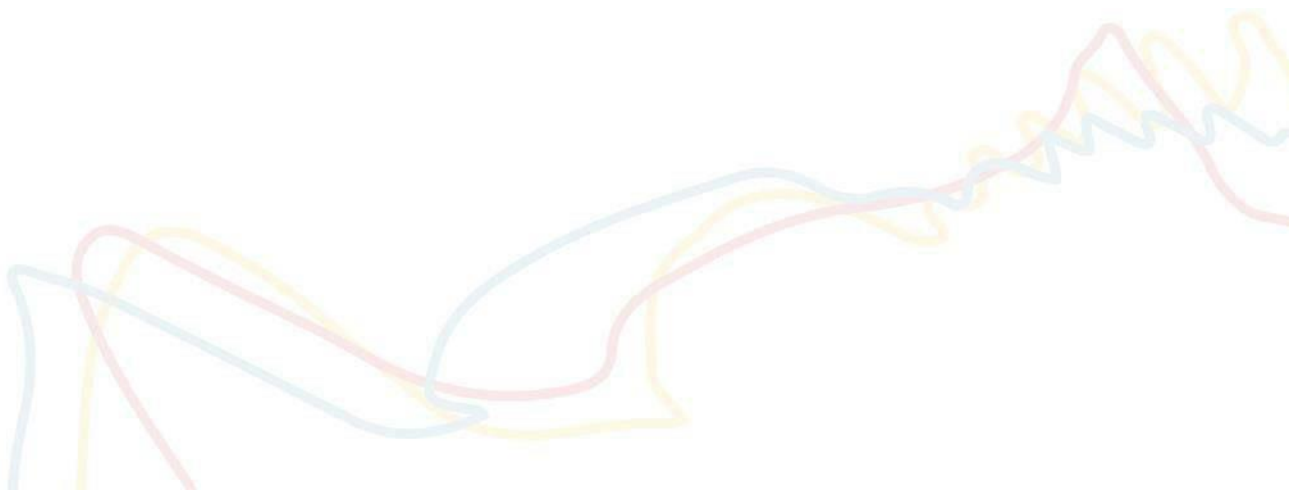


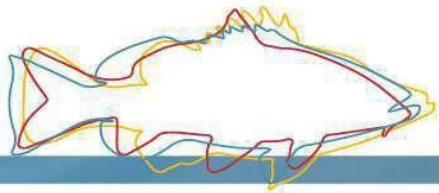
10 tonnes of wild carp was used in the recent Port Lincoln trial
Image by: Daniel McRorie





Carp ready for processing into fish hydrolysate at SAMPI in Port Lincoln
Image by: Daniel McRorie





MEDIA RELEASE

XX May 2018

World-class computer simulation informs carp virus release strategy

Complex computer modelling, the first of its kind in Australia, will be used to predict the effect of the Cyprinid herpesvirus-3 on carp by simulating how the virus spreads from one fish to another.

The National Carp Control Plan (NCCP) has brought together world-class experts on rivers and waterways, fish biology, virology and disease spread (epidemiology) and computer programming to assess the factors that influence virus transmission and identify ways to enhance spread through the carp population.

CSIRO veterinary epidemiologist Peter Durr is leading the research project: *Development of hydrological, ecological, and epidemiological modelling to inform a CyHV-3 release strategy for the biological control of carp in the Murray Darling Basin.*

With kill rates from the carp virus strongly influenced by multiple factors including water temperature, virus concentration and fish schooling behavior, NCCP National Co-ordinator Matt Barwick said that this epidemiology modelling project was one of the most complex ever attempted.

“We have a lot of knowledge about Cyprinid herpesvirus-3. We know that, while the virus can cause disease in carp at water temperatures between 16C and 26C, the optimal window for infection is 20C to 24C. Transmission of the virus is also at its highest when carp are densely populated. By assessing these factors, we can identify seasonal windows to maximise virus-induced carp kills,” says Mr Barwick.

“The challenge is that no epidemiology model in existence considers rivers and how they behave, parameters like water temperature and flow, a target species and how it occupies a complex environment, a biocontrol agent and its movement through populations and, most importantly, the ecological outcome,” Matt Barwick adds, “So the research team combined four or five independent modelling processes to create a super-model, using incredible amounts of data, to predict the success of the virus before it is released.”

CSIRO’s Peter Durr says the model will have several uses including when and where to release the virus to manage the carp removal and reduce impacts on water quality. He also adds that the research team also made a break-through discovery during the complex modelling exercise.

“In the process of making the critical dimensions of the virus work optimally, we understood that water temperature was critical, but soon discovered that Australia did not have a water temperature data layer. This means you can’t easily identify the water temperature of individual rivers or streams,” Mr Durr says, “Through the course of this project, we identified that air temperature and flow data can be used to determine water

temperature – not just at the surface, but down through the water column. So as a result of this project, Australia now has a national water temperature data layer.”

Epidemiological modelling is just one of many research projects currently underway. Leading social scientists, biologists, economists, risk assessment specialists and water quality experts are investigating the challenges, risks, costs, opportunities and potential benefits of carp biocontrol.

Other NCCP research projects underway include: completion of trials testing the susceptibility of non-target species to the carp virus, strategies for cleaning up carp if the carp virus is released and biomass estimations to determine how many carp inhabit Australia’s aquatic environments.

In addition to research, a comprehensive stakeholder engagement plan is being undertaken to consult with, and seek feedback from the general public and special interest groups. Results from this consultation will be made available to the public via the NCCP website.

Ends

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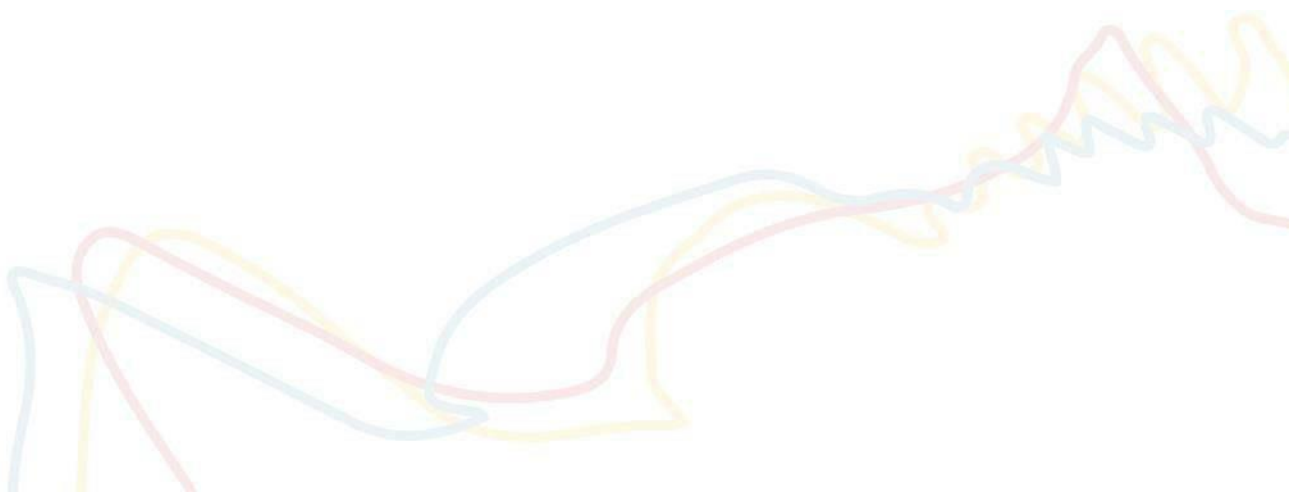
For more information visit **www.carp.gov.au**

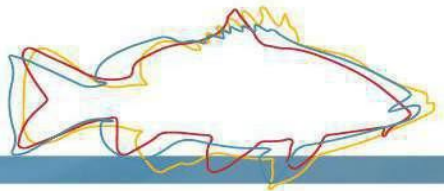
Media inquiries

Katie Paynter

0417 057 243

katie.paynter@seftons.com.au





DRAFT MEDIA RELEASE

XX May 2018

Behind the scenes with the National Carp Control Plan

- **New *Clearer Waters* video series released today on www.carp.gov.au**
- **First five episodes focus on carp control research and common concerns**
- **NCCP encourages community comment via www.yoursay.carp.gov.au**

It is estimated that at least 80% of the fish swimming in Australian waterways are carp, leading most people to agree the introduced fish has reached plague proportions. Coined the 'rabbit of our rivers', there is large support among communities and stakeholders for a reduction in carp numbers, however, debate lies in the most appropriate methods to achieve this.

A new video series produced by the National Carp Control Plan (NCCP) brings viewers “behind the scenes” to meet the people, share the research and understand community concerns around carp control. Titled *Clearer Waters*, the NCCP today released the first five episodes in the series with titles including:

- **How many carp are in Australia?**
Episode 1 focusses on the biomass estimation project, as researchers work to determine how many carp inhabit Australian waterways. Includes interview with researcher Jarod Lyon from the Arthur Rylah Institute.
- **How does the virus actually work? TO BE APPROVED**
Episode 2 explains how the carp virus works and is transmitted and includes details of CSIRO trials to determine the susceptibility of non-target species. Includes interviews with the CSIRO's Ken McColl.
- **Will the virus affect humans?**
Episode 3 explains the literature review undertaken to investigate if the carp virus could impact human health – both direct and psychosocial. Includes interview with University of Canberra researcher Katrina Roper.
- **How many dead carp cause problems?**
Episode 4 explains experiments that monitored the impacts of dead carp on water quality using experimental ponds and includes an interview with researcher Joe Pera from Water NSW.
- **What happens to dead carp in the real world?**
Episode 5 features a full-scale field experiment to examine what happens when dead carp are left to decay in a wetland. Includes an interview with researcher Justin Brookes from Adelaide University.

In addition to *Clearer Waters*, a series of simple animations have been developed to provide the community with information about past carp control efforts, the NCCP decision making process and how the carp biocontrol could work.

According to Matt Barwick, National Coordinator of National Carp Control Plan, these resources have been developed to ensure that the public is kept informed about the important work underway by the NCCP and to address some of the more commonly asked questions and concerns.

“Thirteen separate research projects have been commissioned by the NCCP, with some of Australia's leading researchers, organisations and institutions investigating how best to reduce the number of carp in our waterways and impacts that species is having on water quality and our native environment,” Mr Barwick says, “As these projects begin to deliver research findings, we can start to answer the questions people have about how carp control might work. That’s what the *Clearer Waters* series is all about.”

Importantly, the NCCP is also asking to hear directly from the public.

Have your day on carp control

“We are committed to engaging and consulting with the public as widely and openly as possible. To ensure that everyone is given the opportunity to share their concerns with the NCCP, we have launched yoursay.carp.gov.au – a dedicated site where visitors can raise questions they have directly with the team,” Mr Barwick adds, “Through this dialogue, we hope communities and stakeholders gain a greater understanding of the process the NCCP is following to determine the safest science-based solutions to Australia’s carp problem.”

To receive the latest NCCP news or post questions about the program, simply go to www.yoursay.carp.gov.au and register following the steps below:

1. Go to yoursay.carp.gov.au
2. Click on the “Register” button on the top right of the page
3. Enter your screen name, email and password

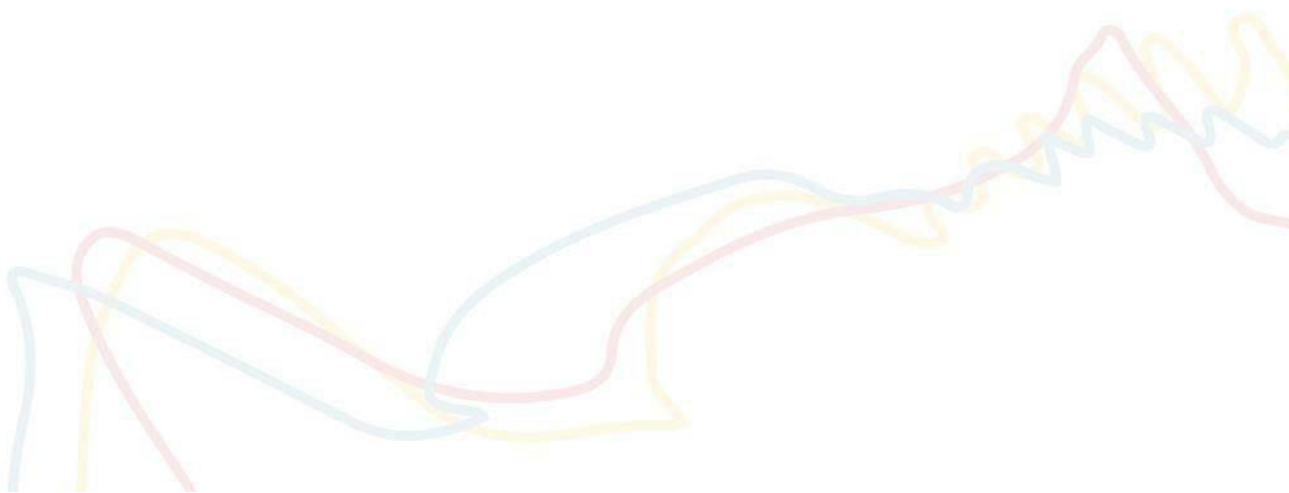
The www.yoursay.carp.gov.au page is available now and the videos and animations can be viewed by visiting www.carp.gov.au.

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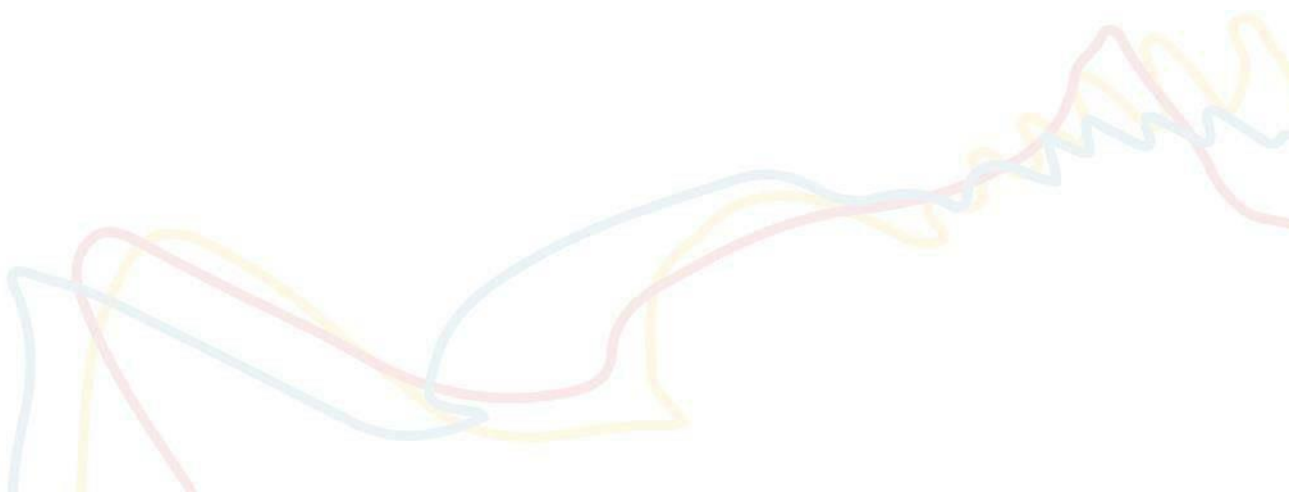
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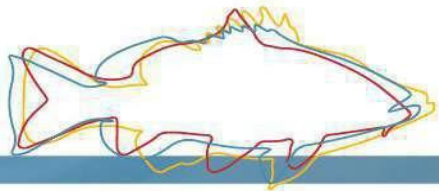
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Media inquiries



Katie Paynter
0417 057 243
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NCCP Media Response Process

The following process has been developed to support NCCP response to inaccuracies and selective reporting published in print media or online.

It is designed to enable the development and distribution of a timely response – should one be required.

Once an issue or inaccuracy has been identified, it is recommended that the decision to respond (or not) be made on a case by case basis – rather than adopting a metrics based approach.

Response Process

- Step 1:** Inaccurate information is published about the NCCP, its research, people or process.
- Step 2:** Determine if a response is required (NCCP/Seftons). Yes / No.
Factors to be considered include:
- Is the information / statement inaccurate and detrimental to understanding of the NCCP program?
 - Is the information / statement misleading?
 - Is it just the opinion of one individual / organisation / media outlet?
 - Is it a continuation of existing messaging that has already been addressed?
 - Will responding be in the best interests of the NCCP and research partners?
- Step 3:** If yes, determine relevant response options (NCCP/Seftons) and identify stakeholders directly impacted by the inaccuracies (e.g. research partners).
Response options could include:
- NCCP call to journalist to advise of inaccuracies
 - Statement prepared and issued to media outlet
 - Invitation for media outlet to speak further with lead researcher related to comments made
- Step 4:** Contact stakeholders (including the relevant corporate communications department*) to share proposed response and gauge support for a joint response, agreement on the response approach and involvement in contributing to/co-authoring a response.
- Step 5:** Draft response and co-ordinate necessary approvals.

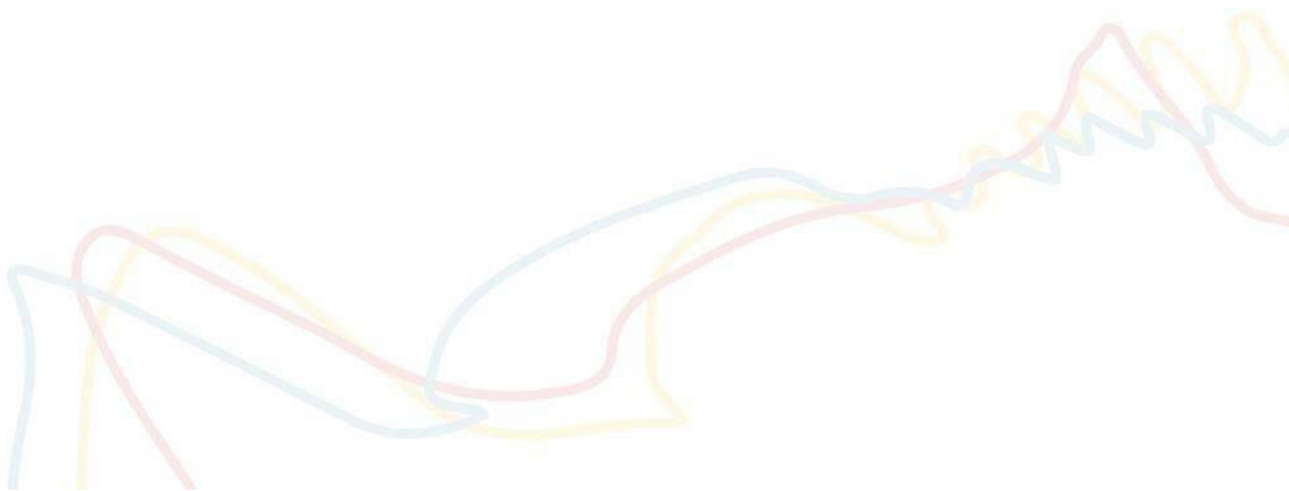
Step 6: Issue response to relevant media outlet via previously agreed approach.

Note: the above steps often need to take place in a matter of hours rather than days.

Step 7: Monitor outcome and update stakeholders.

Step 8: Follow-up response as needed.

*Seftons will engage with research partner communication contacts early to identify specific approvals required to developing a joint/co-authored media response and maximise their support to correct inaccurate/selective reporting.



**Water NSW corrects misinterpretation of water quality trial results
for National Carp Control Plan research program**

**National Carp Control Plan National Co-ordinator Matt Barwick
provides context for Water NSW research findings**

Water NSW would like to correct some misleading statements that have been published in the media, in relation to important water quality trials it has undertaken on behalf of the National Carp Control Plan (NCCP).

Specifically, Water NSW would like to provide clarity in relation to the dilution factors associated with dissolved oxygen levels and the co-ordinated removal of dead carp from our waterways to protect water quality.

In the article published on ABC News website on Friday 4 May 2018: *Will the carp herpes virus help or hinder Australian water's native species?*, **Kerry Staight** refers to research undertaken by Water NSW's Joe Pera, which forms part of the NCCP's Strategic Research Program.

Similarly, Simon Chapman's Op Ed piece in the Sydney Morning Herald on Friday 4 May 2018: *Cane toad 2.0: killing carp with herpes*, selectively refers to findings from the same Water NSW research.

In Mr Pera's work, 2m² mesocosms (open-topped tanks situated within a larger waterbody) were populated with different amounts of dead carp to simulate carp kills of varying magnitudes. Water quality parameters including algal and bacterial loads were then measured repeatedly in the mesocosms as carp decomposed. The dissolved oxygen levels quoted by Mr Pera are based on a 2,000 litre enclosed waterbody, and importantly, must be diluted significantly when applied to larger natural waterbodies.

For example, when applied to NSW's Warragamba Dam, water-quality impacts must be diluted by approximately 80x, which would therefore result in significantly reduced impacts to overall water quality. To not consider the impact extrapolation would have on water quality, results in misleading conclusions being drawn.

Crucially, Water NSW's findings also reflect a scenario where absolutely no clean-up effort is applied. In the research report conclusion, Mr Pera clearly states: "Removal of dead fish is critical to maintaining good water quality."

NSW Water understands that determining effective strategies for protecting water quality by safely removing dead carp is another critical piece of the NCCP's research efforts and the findings from all 13 NCCP research projects must be considered holistically when determining the most effective option to control carp in Australia's waterways.

According to Matt Barwick, National Coordinator, National Carp Control Plan:

“We already knew dead carp will have some level of impact on what quality, so we were not surprised at all by the findings. What the Water NSW trials told us is at what stage water quality was impacted and for how long it would be impacted without any clean-up effort.

The NCCP, together with Water NSW has now extrapolated those findings and applied them to a ‘real life’ scenario, which has told us:

- *Water NSW to provide*

“It is also important to note, the carp virus is a fish virus and there is no evidence of any fish virus ever being transmitted to humans. International and Australian research has repeatedly told us it presents no human health risks at all. The added purification processes used by Australia's water authorities that supply drinking water, such as chlorination and UV treatment, would also destroy any possibility of such an occurrence,” says Mr Barwick.

The fact this information is now available and can be used to inform decision making, deems the Water NSW trials an effective and valuable piece of research and is reassurance that a robust approach is being taken by the NCCP to inform possible biocontrol recommendations,” Mr Barwick adds.

DRAFT OzWater Presentation Statement (Joe Pera)

Welcome everyone

[depending on attendance at the session – i.e. more than anticipated/media interest than expected]

It's great to see so much interest in the findings of this Water NSW research. Perhaps I should thank Simon Chapman for the opinion piece published in last Friday's Sydney Morning Herald.

I am not sure if you read it, but in the article, Mr Chapman sensationally labelled the potential release of the carp virus: "Cane toad 2.0".

Mr Chapman is emeritus professor of public health at the University of Sydney and, more specifically, patron of the Koi Society of Australia.

Mr Chapman has a right to his opinion – everyone does - and a robust conversation about how to manage Australia's common carp problem is what the National Carp Control Plan is all about.

What was disappointing about Mr Chapman's opinion piece was his selective interpretation of research findings informing the possible biological control of carp – including this research from Water NSW.

Water NSW aside, some of Australia's most recognised universities, institutions and agencies are contributing to the National Carp Control Plan Research Program – including the CSIRO.

In sharing the findings from this project, Mr Chapman failed to provide context vital for interpreting the results.

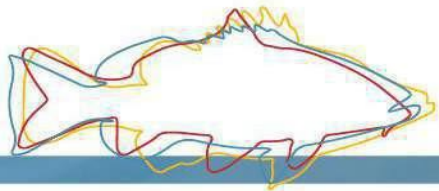
While quoting levels of dissolved oxygen, phosphorus and nitrogen recorded in a 2,000-litre enclosed waterbody, he failed to mention that the data must be diluted significantly when applied to larger natural waterbodies.

Water NSW clearly states that dilution factors are essential for understanding the results' real-world implications. For example, when applied to Warragamba Dam, water-quality impacts must be diluted by approximately 80x - which would therefore yield very subtle changes in overall water quality.

Crucially, Water NSW findings reflect a scenario where absolutely no clean-up effort is applied.

Without pre-empting today's presentation, the removal of dead fish is critical to maintaining good water quality and determining effective clean-up strategies is an essential part of the National Carp Control Plan's research efforts.

So, it is now my pleasure to present the findings of this research in context and in its entirety:
SIMULATING A CARP VIRUS RELEASE TO QUANTIFY THE IMPACT OF DECAYING FISH ON WATER QUALITY.



BTT – Question Response Protocol

This protocol has been developed to support responding to questions received via yoursay.gov.carp.au (BTT).

The process is designed to ensure a timely response to questions while managing the level of input required from NCCP and relevant researchers. While there will always be some questions that require a crafted response, the following steps should reduce the number of individual responses required on a day to day basis.

As a result, many individuals will receive similar responses (i.e. inviting them to a webinar, thanking them for their comments). It is therefore recommended that NCCP does not make questions and responses visible the BBT site.

Step 1 – Standard email response

Once a comment is received via BTT (regardless of question type), the individual receives an automatic email response advising that:

(A) “Thanks for your comments. We will get back to you as soon as possible.”

Step 2 - Categorise question

The feedback/comment needs to be categorised depending on its subject matter.

For example, is it a general comment about the NCCP, or does it relate to the research topic in focus?

- If it is a general NCCP comment, Seftons will review the question and develop draft response with NCCP input as required – existing approved NCCP FAQs will be utilised where possible. A response will be sent to the individual within 2 business days (internal target).
- If the comment relates to the current research topic promoted on BTT, the process outlined in Step 3 (below) will be followed.
- If the comment is very technical or comes with multiple, similar questions from the same individual, the process outlined in Step 4 (below) will be followed.
- If the comment relates other NCCP research, the process outlined in Step 5 (below) will be followed.
- Specific responses (Step 6 and Step 7 below) have also been developed to address particular issues identified by NCCP.

Step 3 – Research specific questions (in focus)

As part of a broader communications strategy, yoursay.carp.gov.au will focus on specific NCCP research projects and encourage visitors to submit questions in relation to that area of science for a period of one month.

The schedule at the end of this document identifies the focus topic each month and the researcher who will assist in developing responses to comments/questions (as required) and participate in the NCCP webinar (see below).

We recommend that this period of discussion culminates in a research specific webinar hosted by the NCCP and relevant researchers - with individuals who posted the questions invited to log in.

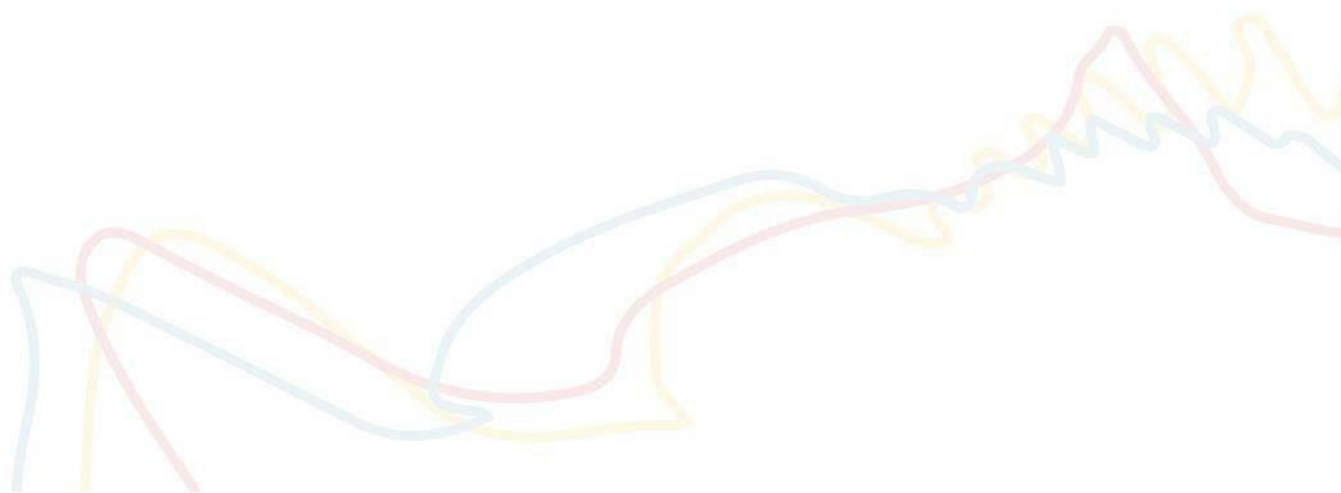
Researchers will be contacted to confirm their availability to support response development and participate in the webinar – which will be scheduled for the first week of the next calendar month (i.e. if carp utilisation is the research topic for May, the webinar will be scheduled for the first week in June).

Relevant comments received via BTT during that period will be collated and categorised, with duplicates deleted. This will provide broad topics for discussion at the webinar session. Individuals can log in to listen to the NCCP and researchers discuss.

Note: The webinar will not provide viewers with opportunity to talk live – just to listen to topics/questions addressed. The webinar can then remain on the site for others to view at their own convenience, even after discussion on that theme has closed.

This approach ensures that yoursay.carp.gov.au does not become a ‘quiz the scientist’ page and we are not held to account by particular individuals on every single question. The webinar is an effective way to collate the responses and address in a concise and resource efficient approach. It also provides the added benefit of capitalising on researchers as third-party voices for the work underway. (See proposed response to questions below)

Some overly technical questions or multiple questions received from particular individuals could receive an alternative response advising that their points have been passed on to the researcher for addressing as part of their final paper recommendations (see proposed response below).



If it's determined that a comment received will be addressed as part of a webinar, the response will be:

(B) "Thanks for your feedback. We will look to address your comments as part of our carp utilisation webinar later this month. To register your participation in this webinar please click on the following link."

Step 4 – technical comments/multiple comments received from one person

If a comment is very technical/specific or is received from an individual who frequently posts similar questions:

(C) "Thank you for your input, you raise some interesting points. We will pass this on to the researcher and can confirm their final report will be made publicly available on our website www.carp.gov.au for you to read in the near future."

Step 5 – Comment related to other NCCP research

If the comment relates to research projects not currently being discussed on BTT – but identified as "upcoming", the following response will be sent:

(D) "Thanks for your comment, we will look to address this as part of our upcoming [XXX research] webinar. Stay tuned for further details."

All registered BTT users will receive notification of upcoming webinars once scheduled.

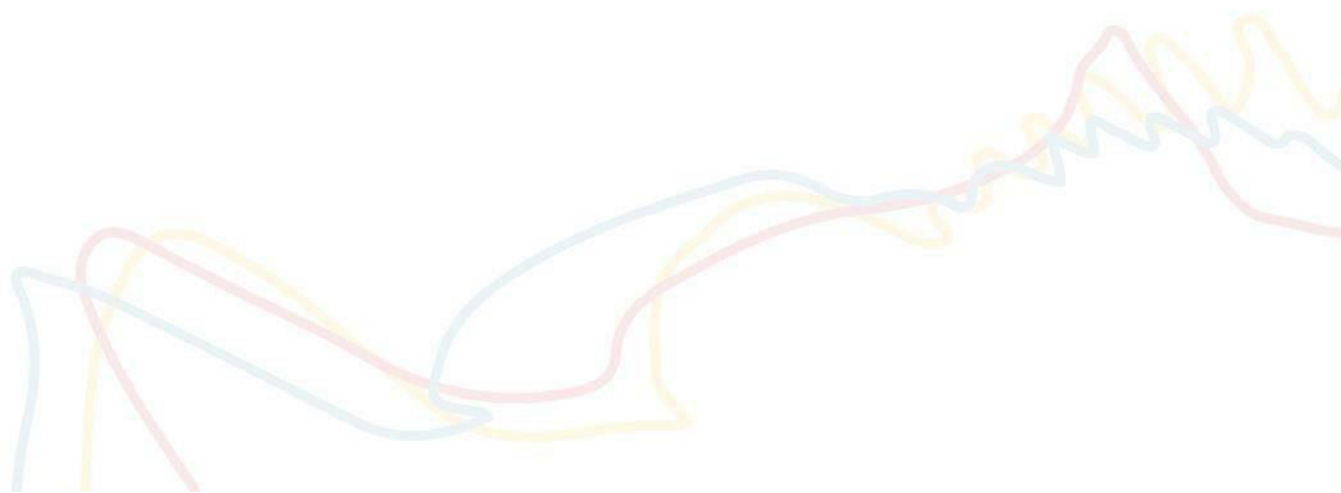
Step 6 – Comment identifying research knowledge gaps

If a comment relates to a knowledge gap in the NCCP's current research program, the following response will be sent:

(E) "The NCCP's Science Advisory Group has been established to ensure that the research being undertaken is comprehensively addressing all risks associated with potential carp control measures. Research into the management of all possible solutions continues."

Step 7 – Comments identifying works/initiatives beyond NCCP scope

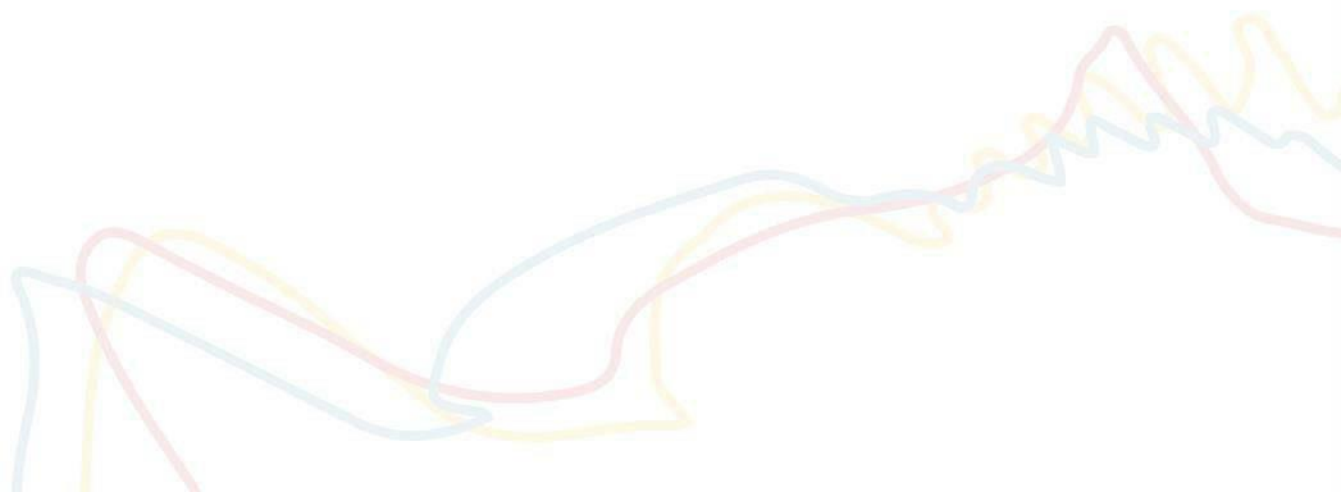
If a comment relates to works beyond the NCCP's scope (i.e. fish restocking, complimentary measures) the following response will be sent:



(F) “The NCCP is delivering a comprehensive program of research, and consulting extensively with stakeholders and the community to inform development of an integrated plan to control carp in Australia. Complimentary initiatives such as XXXXXXXXXXXX are beyond the NCCP’s scope and would likely be managed at a state/local level.”

Research topic schedule

<i>Month</i>	<i>Topic</i>	<i>Researcher</i>
May	Carp Utilisation	Janet Howieson
June	Biomass Estimation	Jarod Lyon
July	Informing strategies to optimise release and clean up	Luiz Silva
August	Non Target species testing	Ken McColl
September	Human health considerations	Katrina Roper
October	Epidemiological modelling	Peter Durr
November	Water Quality	Justin Brookes
December	Benefit-Cost Analysis	Peter Chudleigh
January	Risk Assessment	tbc
February	Review of sex bias methods	tbc



As part of the team working to find a solution to the carp crisis in Australia, I would like to address some inaccuracies in Simon Chapman's Op Ed piece published on 4 May ("Cane toad 2.0: killing carp with herpes", SMH, p21).

The water quality experiment quoted by Mr Chapman was conducted by Water NSW researchers in 2,000L closed containers - a vast difference to the real life water bodies that exist in Australia. The same research stated that dilution factors are essential when interpreting the results – this information was omitted by Mr Chapman.

Crucially, this research also reflects a scenario that involves no clean-up. Determining effective, and logistically-feasible ways to protect water quality by safely removing dead carp is central to the National Carp Control Plan (NCCP) research program.

The NCCP has embarked on a process driven by evidence based-based scientific results to develop a multi-pronged approach for the effective long-term control of carp in Australia. No decision has been made about what the approach will be.

We understand that ornamental and hobby carp breeders like Mr Chapman are concerned about how a biocontrol solution might impact them, and we are working with these stakeholders as part of a broader community engagement plan.

Matt Barwick, National Coordinator, National Carp Control Plan

Carp are the cane toads

Matt Barwick, National Coordinator, National Carp Control Plan

As part of the team working to find a solution to the carp crisis in Australia, I would like to address a number of inaccuracies raised by Simon Chapman on 4 May ("Cane toad 2.0: killing carp with herpes", SMH, p21).

Like cane toads, Carp are an introduced species that have flourished at the expense of the Australian environment and its native wildlife. They compete with native fish for food, contribute to the occurrence of harmful blue-green algae outbreaks and are thought to play a significant role in the environmental degradation of waterways across the country.

Their scourge is recognised across the country. Following years of concern amongst the community including environmental groups, farmers and industry, the \$15 million National Carp Control Plan (NCCP) was established, tasked by the Australian Government to find a solution.

The NCCP is made up of some of Australia's most recognised universities, institutions and agencies. There are currently 12 research projects underway, which will inform the final list of recommendations made to the Australian Government later this year.

We are investigating a range of solutions, one of which is biocontrol (also known as the carp virus). However, any solution will likely include a multi-pronged approach because there is no silver bullet.

While no decision has been made, experiments have shown that when carp impacts are controlled, water clarity improves, small native fish recover, and water plants bloom. Therefore the flow-on benefits for Australia could be massive.

Over the last eight years, CSIRO scientists have tested if a potential virus could impact a broad range of fish species, and other wildlife such as birds, reptiles, amphibians and mammals. Using appropriate molecular analysis, scientists have proven that it does not multiply in any species other than carp. If it is not multiplying, then it cannot infect, or affect, non-carp species. We are confident of these findings.

The water quality information quoted by Mr Chapman was conducted by Water NSW researchers. These experiments were conducted in 2,000L closed containers, a vast difference to the real life water bodies that exist in Australia. The same research stated that dilution factors are essential when interpreting the results – this information was omitted by Mr Chapman. Crucially, this research also reflects a scenario that involves no clean-up.

Determining effective, and logistically-feasible ways to protect water quality by safely removing dead carp is central to the NCCP research program, and recommendations for how this would be managed will be included in the project's final recommendations.

Australia is globally recognised for its expertise in biosecurity and biocontrol. To suggest that our knowledge and confidence in biocontrol technologies has not advanced since cane toads were released 80 years ago despite significant scientific advancements, application of stringent, world-leading legislation, and many successfully deployed biocontrol agents is disingenuous and unhelpful to a constructive public debate.

We understand that ornamental and hobby carp breeders like Mr Chapman are concerned about how a biocontrol solution might impact them, and we are engaging with these stakeholders as part of a broader community engagement plan. The concerns of ornamental and hobby Koi Carp breeders are unique to NSW and WA, as they are the only states which allow carp to be kept for domestic reasons.

This is an issue of national importance, and support from the community will be essential for the success of any suggested approach. We will continue to conduct scientific research and community consultation that is focussed on the best way to help Australia address this growing issue.

Cane toad 2.0: killing carp with herpes

Simon
Chapman

A plan to release a strain of

herpes virus into waterways to eradicate carp fish populations carries serious risks for the health of our rivers and lakes and could prove to be as foolish as releasing the cane toad.

At the national OzWater conference in Brisbane on Tuesday, a scientist from Water NSW will report on what happens to water quality when lots of carp die quickly.

Research is being reported on a dress rehearsal simulation of the impact on our rivers if, as is planned under the National Carp Control Plan, carp herpes virus is released to try to tackle Australia's "river rabbit" pest.

In the study, dead carp placed in 2000 litre tanks in Sydney's Prospect Reservoir saw dissolved oxygen in the tank water fall to zero, with levels below 10 per cent remaining for up to two weeks. Without dissolved oxygen, fish and invertebrates rapidly die.

Nitrogen levels increased up to 120 times and phosphorus up to 500 times. These stayed well above lake levels for a month after the experiment. Algal blooms lasted the length of the experiment.

The report concludes: "These results show that fish kills at high biomass volumes can have detrimental effects on water quality over the first month.

Removal of dead fish is critical to maintaining good water quality."

No one has reliable figures about how many carp are in Australian waters, but estimates range from 2 million to 6 million tonnes.

Sydney's drinking water reservoirs with carp populations include Burragorang, Prospect, Wingecarribee, Fitzroy Falls, Yarrunga and Nepean.

While it's possible to imagine a carcass clean-up effort in these contained reservoirs, our vast rivers are a different story. The Lachlan River is 1440 kilometres long, the Murrumbidgee 1600 kilometres and the Murray-Darling 2507 kilometres, to name just three.

Great stretches of these rivers are sparsely populated and difficult to access. No serious scenarios have been painted about how many resources will be needed to clean it all up.

Significantly, no nation with wild carp has ever purposefully introduced carp herpes virus into rivers. Eight alarmed Australian international scientists who wrote to the journals *Nature* and *Science* in 2017 and 2018 emphasised why. They wrote of potential "catastrophic ecosystem crashes" caused by the mass deoxygenation but also of the utter futility of the highly risky exercise.

In CSIRO experiments informing the national proposal, in three of 22 different species of noncarp native fish exposed to the virus, "moderate to high" death rates occurred, although none had signs of herpes infection post mortem. This was sloughed off as due to animal husbandry problems, with reassurances that only carp would succumb to the

virus. Fingers crossed on that one.
The herpes release program
greatly animated Barnaby Joyce
when he was the responsible
minister. But many scientists see it
as a high-risk, cavalier thought
bubble that once, released cannot
be stopped.

Globally, carp are the world's
most farmed fish, used for food
and fertiliser. Australia has not
taken the economic potential of
this at all seriously.

Aquatic scientists also point to
genetic control methods such as
gene drive technology and
daughterless carp whereby only
male carp are born, causing
wholesale reductions of carp
numbers within a generation.

Releasing cane toads was a wellintentioned
but unforeseen, utter
disaster. Let's not go there again
with carp.

Simon Chapman is emeritus
professor of public health at the
University of Sydney and patron of
the Koi Society of Australia.

Page 1 of 1

04 May 2018

Sydney Morning Herald, Sydney

Author: Simon Chapman • Section: General News • Article Type: News Item

Audience : 88,634 • Page: 21 • Printed size: 265.00cm² • Market: NSW

Country: Australia • ASR: AUD 21,210 • words: 570 • Item ID: 948871491

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NATIONAL CARP CONTROL PLAN – 11 MAY 2018

YOURSAY.CARP.GOV.AU – STRATEGY AND CONTENT PLAN

Purpose:

To provide a platform for the public to engage with the NCCP and receive updates on the important research work underway and milestones reached by the NCCP. It will also provide a channel for stakeholders and the public to ask questions and submit suggestions, recommendations, concerns or queries. It is important this is not perceived as an NCCP marketing tool, it must remain a conduit of information between the public and NCCP whereby information can be shared and exchanged without prejudice. It also provides an opportunity to share and seek comment on external research and commentary undertaken independent of the NCCP.

The platform: www.yoursay.carp.gov.au will be managed by Seftons and designed to complement the traditional communications and stakeholder engagement work underway, as well as an extension of the existing NCCP website.

Objectives:

In relation to the program

- To generate a greater awareness of the impacts of carp and in turn increase participation in the investigation of possible solutions
- To keep stakeholders, in particular the general public, informed about NCCP's scope of work
- To enable stakeholders and the general public to engage with the NCCP on targeted topics in greater detail than other digital tools allow
- To foster support for the NCCP process and build trust in the program's approach and methods
- To provide a dedicated and versatile channel to seek input and feedback from users in a variety of ways including Q&As, discussion forms, polls, mapping, story boards etc
- To provide transparency around the program's timeline and clearly communicate opportunities and methods for contribution
- To keep public and stakeholders informed on a regular basis, particularly during periods where other engagement methods are not underway e.g. public consultation meetings, stakeholder workshops
- To ensure the NCCP is positioned as a facilitator of information and free from any bias

In relation to the site itself:

- To build an online community quickly utilising the tools, resources and channels available to the NCCP
- To ensure a content rich site with multiple engagement tools in place to maximise participation
- To ensure the engagement tools used relate well to the subject matter discussed, resulting in increased participation and outcomes
- To seek information for users that will contribute directly to the overarching NCCP recommendations report
- To ensure copy is short, sharp, easy to read and timely
- To ensure the site is managed in a way that allows whole of user involvement i.e. not limited to just a few vocal voices
- To respond to all feedback within 2 working days of submission
- To ensure the site integrates with the broader communications and stakeholder program including media relations, stakeholder engagement meetings etc.

Stakeholder Audiences

This site is designed to reach all stakeholders identified in our communications and stakeholder engagement strategy including: the general public, government; special interest groups: commercial and recreational fishers, koi society, natural resource management groups; water asset managers and water authority representatives; fishing clubs; retailers; community environment groups; farmers, irrigators, small business owners; research groups; activist groups and community groups. It is also likely to be viewed by media as well.

However, it is important to note, some of the key stakeholders and special interest groups mentioned above will require a more sensitive and direct level of engagement, with many also not preferring a digital platform. Stakeholders such as Koi Society members, commercial fishers, farmers and irrigators will need to be engaged with directly, with messages that address their specific concerns. While the BTT can be a resource for these audiences, the site will be broad in its content and therefore geared more towards the general public.

There is the opportunity to build specific sites within Bang the Table for particular interest groups, as has been done for the Local Government representatives to date. This can be assessed on an as needed basis as the program progresses.

Methods

Bang the Table presents a range of options to engage with users, these include general questions and answers, polls, link to webinars, discussion forums, mapping tools, surveys and story boards. NCCP will initially launch the site with the question and answer and possible polling tools, however as the site is trialled and NCCP can gauge its level of usage, more tools should be considered to increase involvement and participation.

Content:

Following is a detailed content plan which has been designed to coincide and reflect:

- 1. The research projects that are ready to be profiled / shared with the public
- 2. The key messages that need to be communicated in relation to the NCCP and its role in carp control investigation
- 3. The media relations schedule that is underway by Seftons
- 4. The video content that has been created by NCCP’s Tom Rayner as part of the ClearerWater series
- 5. The key themes and concerns that are emerging from consultation to date

Note, in addition to the platform being an effective information and engagement tool, NCCP can also choose to use the site to seek input from users on key questions or topics that form part of the broader NCCP process. For example, if NCCP are required to reflect in its final report to governments how the public use waterways in their community – it can choose to add such polls and surveys to the website and seek this information. While it may not specifically relate to one of the key themes being communicated at the time, it can serve multiple purposes and seek a range of information at any given time. The more content rich and interactive, the more effective the platform becomes for engagement. The attached table provides an opportunity for the NCCP to identify these needs.

Following is a content plan for the site for the coming three months. This will continue to be added to as the project progresses:

Timing	Stakeholders	Key NCCP Expert	Content	Online & Offline Engagement	Media Relations	Digital	Other Information Sought by NCCP
May: CARP UTILISATION	General Public Local Government	Janet Howieson, Curtin Uni	<ul style="list-style-type: none">• Curtin University Research Summary• General Q&As about project	BTT - Q&A NCCP and Research responding to public questions BTT -Quick poll User preference for carp utilisation	Supporting national media release (issued)	Clearer Waters Video Support via CWG digital channels	

Commented [JG1]: NCCP to complete

Other Potential content	<ul style="list-style-type: none"> Updated announcement on project timelines following Govt feedback Share open letter to stakeholders on program status, achievements, timelines 						
May: CAN'T WE JUST CATCH THEM ALL	<p>General Public via BTT</p> <p>Commercial sector via face to face, written and webinar opportunities</p>	Paul Brown, La Trobe University	<ul style="list-style-type: none"> Summary of research project / findings General Q&As about the project History of carp musters & their role / success of carp musters Quick facts about commercial fishing carp export sector Potential opportunities as a complementary measure 	<p>BTT - Q&A NCCP and Research responding to public questions</p> <p>BTT – Poll / Discussion Forum Tell us what you think – seek input to how the sector could support the NCCP plan</p> <p>Letter – Letter to stakeholders informing status of the plan</p> <p>Invitation – Panel discussion with sector and NCCP / researchers, explain the research findings and seek feedback (TBA J.Schirmer)</p> <p>*Webinar – discuss: work by researcher, answer questions, share progress update, outline timelines,</p>	<p>Supporting national media release</p> <p>Weekly Times Opinion Piece (Lat Trobe University)</p>	<p>Clearer Waters Video</p> <p>Support via CWG digital channels</p>	

July SOCIAL RESEARCH – What Australians think?	General Public / All Stakeholders Local Governments	Jacki Schirmer	<ul style="list-style-type: none"> • Clearer Waters video • Survey findings • Animations • Stakeholder content – sharing insights/opinions • Riverside Stories 	<p>Poll – Select elements from research and poll with wider public</p> <p>Survey – sentiment of users to carp control. Identify areas of support and concern</p> <p>Letter to key stakeholders sharing sentiment benchmarks</p> <p>Findings – sharing of targeted research with individual stakeholders (led by Jacki Schirmer)</p> <p>Stakeholder webinar – discuss findings and key topics/issues</p>	Supporting national media release Targeted release of results via media exclusives Possible opinion pieces to benchmark sentiment for the program	Possible NCCP video content Animations Riverside stories release via digital comms channels	
July CLEAN UP STRATEGIES	General Public / All Stakeholders Local Government	CSU – Luiz Silva NCCP Possible Clean Up Australia partnership	<ul style="list-style-type: none"> • Research summary • Case study work • Targeted questions • Proposed plan for possible release 	<p>Q&A – NCCP and Researcher responding to public questions</p> <p>Mapping Tool – Share carp aggregation insights via mapping tool</p>	Supporting national media release Opinion piece via third party experts Communications content via	Clearer Waters Video	

				<p>Calendar – share key dates for communities that would impact possible release and clean up</p> <p>Poll / Survey – seeking information to key areas of plan</p> <p>General Public Webinar – Possible link to webinar with NCCP, Clean UP Australia, Govt disaster relief expert and CSU on considerations around major clean up</p> <p>Local Govt Webinar – share information, answer questions, seek input</p> <p>Community Groups Webinar – Lions, CWA, Rotary etc – opportunity to seek feedback to possible clean up support</p>	stakeholder channels		
EPI-MODELLING	General Public / All Stakeholders	Peter Durr, CSIRO	<ul style="list-style-type: none"> Information mapping 	Interactive Map – pin dropping.	Supporting national media release	TBA by NCCP	

				Carp sightings – invite public to comment on their findings Where water is extracted from rivers			
BIOMASS	General Public / All Stakeholders	Jarod Lyon ARI	<ul style="list-style-type: none"> • Overview of work • Profile of research projects • Targeted questions • General biomass Q&A • Clearer Waters video 	Q&A – NCCP and Researcher responding to public questions Poll – guess how many carp are in our waterways Interactive Map – carp sightings	Media release – localised if possible based on findings	TBA by NCCP Clearer Waters Video – once approval obtained by NCCP	
OTHER CONTENT OPPORTUNITIES	<ul style="list-style-type: none"> • Regular surveys to benchmark program sentiment • Regular polls /surveys to measure satisfaction with site content • Q&As – what you want to know • Discussion forums for less sensitive issues / topics • Interim updates on research milestones – what we have learnt, what we’re yet to learn, what has surprised us • Video footage – presentation from community consultation • Video footage – clips from NCCP presentations • Video footage – PI Workshops • Quick facts • Timeline updates for NCCP program • Updates on events – consultation, feedback opportunities, formal submissions 						

Measurement

The following benchmarks will be used to measure the success of Bang the Table as an NCCP engagement tool. Note metrics have not been applied to this plan/site initially, it is recommended the site is promoted and trialled for a two week period before accurate metrics can be set. Measurement will be quantitative rather than qualitative:

- Amount of traffic driven to the site (this will be largely driven by the promotion of the site via other channels i.e. media relations, CWG and stakeholder digital communications channels, e-newsletters, webinars etc)
- Visitors to the site will be classified as follows;
 - o Aware visitors – On single visit to a page, but has not clicked on anything, can be considered to be aware that the project or site exists.
 - o Informed visitors - Taken the 'next step' from being aware and clicked on an item such as another page, a news article, a photo, downloaded a document etc.
 - o Engaged visitors - Every visitor that contributes to a tool is considered to be 'engaged'. i.e. participate in quick polls, ask questions, comment etc.

Seftons recommends the majority of visitors to the site should be informed and engaged visitors, if not the NCCP is successful in its promotion of the engagement tool but not in its ability to actively engage users.

- Tone of commentary - positive, negative or neutral sentiment analysis to be measured over key project milestone periods
- How many users engaged in the site via messaging i.e. number of questions asked and comments
- Number of views per video will help to determine which pages and content are best received
- Number of polls answered
- Number of document downloads
- Sentiment of users via short polls as to the effectiveness of the site for users
- Surveys to understand sentiment at key milestones throughout the program, a positive shift in responses will be one gauge of program effectiveness
- Cross channel measurement – spikes in traffic correlating to high volumes of media coverage

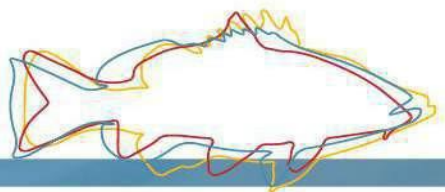
Evaluation

Bang the Table also allows NCCP to ascertain who is visiting the site and the frequency of these visits. Bang the Table metrics will also be evaluated to determine user behaviour, as opposed to just sentiment. For example, the following will also be reviewed:

- How many people have been engaging?
- Who has been engaging with the site?
- Why have they been engaging with the site?
- Community opinions that have surface from polls, questions and comments.
- Most frequented pages and content

Summary

Given the nature of the program and existing public sentiment, it is important this plan remains adaptive. The above themes should be flexible in timing and content and if new issues / challenges emerge, these should be reflected via content on the site. Seftons together with NCCP will keep a watchful eye over the content schedule and ensures it aligns with our strategy to seek a social licence to operate.

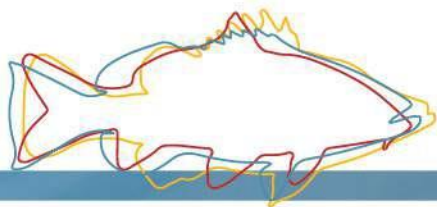


NCCP story ideas for Fairfax Media Partnership

The following story ideas have been developed to progress discussions regarding a partnership with Fairfax Media. The stories focus on elements of the NCCP research program, results for community and stakeholder consultation and broader issues relating to biocontrol and other carp control methods.

The following list provides one or two opportunities for media coverage per month (a mix of editorial/advertorial) to December 2018. As the NCCP program progresses, story ideas may evolve to address emerging issues or matters of public interest, with new topics added to the mix as required.

- Managing carp numbers through commercial fishing? (Commercial Fishing Research).
- NCCP Principal Investigators Meeting (23/24 May) - What the research is telling us...
- Key ingredients for success – the science behind the virus release. (Epidemiology Research).
- What Australia thinks about carp and the carp virus? (Social Attitudes Research)/Community Consultation Findings – 80 meetings around Australia – what did we learn?
- Australia's biocontrol history – from rabbits to cane toads. Why the carp virus is different.
- A future without carp – what will our ecosystem look like in 5/10 years' time? (University of Canberra Research).
- The carp clean-up challenge – keeping our waterways healthy (Clean-up Research/Strategy).
- How many carp are swimming in your local waterway? (Biomass Research).
- The truth about the carp virus – busting the myths. (CSIRO/Human Health Research).
- What's the alternative? Exploring carp control options (Commercial fishing/Sex biasing Research).
- "Go Catch a Carp" on Gone Fishing Day!! (October 15).
- 101 things to do with a dead carp (Utilisation Research).



NATIONAL CARP CONTROL PLAN
RESTORING NATIVE BIODIVERSITY

2 May 2018

Dr Paula Reynolds
Consultant in Fish Medicine, Aquatic Pathobiologist, Director of Research
LFH Laboratories
The Little Paddock Millfield Lane West
Frampton, Lincolnshire, PE20 1BW
United Kingdom

Dear Dr Reynolds

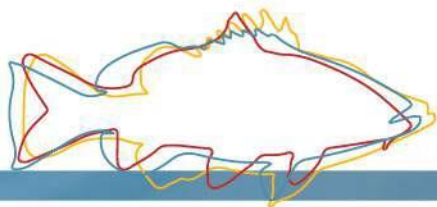
An undated copy of your letter to an Australian Senator raising your concerns about the proposed release of Cyprinid herpesvirus three (CyHV-3, hereafter 'the carp virus') into the Australian environment has recently been forward to me.

Although the letter is not addressed to me, I would like to respond directly to your concerns on behalf of the National Carp Control Plan (NCCP).

First, please accept my apologies for any misunderstanding regarding our work in the biosecurity sphere to control the introduced pest species common carp (*Cyprinus carpio*) in Australian waterways. Such misunderstanding was certainly not my intention.

As you are probably aware, the current stage of the NCCP is a planning process led by the Fisheries Research and Development Corporation (FRDC) on behalf of the Australian Government. The process is thoroughly investigating the most appropriate options for an integrated program of carp control, with a focus on the potential release of the carp virus, along with a complementary suite of measures.

Through this 18-month period of extensive scientific research and community and stakeholder consultation, the NCCP will ensure that the benefits and risks of a biocontrol strategy for carp are fully explored, understood and communicated. After considering all the evidence, the NCCP will make recommendations to the Australian government about the best integrated approach for controlling



NATIONAL CARP CONTROL PLAN
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carp, and whether the carp virus should be used. Governments will then reach a decision regarding virus release.

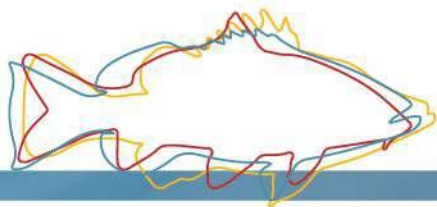
We welcome all feedback and contributions to the NCCP – including your contribution – and I want to emphasise that the NCCP is a process, not a foregone conclusion. We do not take this responsibility lightly.

Australian decisions on carp biocontrol must reflect our unique environments and the wildlife and people who rely on them. We are extremely mindful of the potential risks of biocontrol programs in Australia and the final recommendations and decisions will draw on the best available research, from within Australia and around the world.

The NCCP is bringing together world-class social scientists, economists, biologists, water-quality experts, veterinarians and risk assessment specialists to investigate the challenges, risks, costs, opportunities and potential benefits of carp biocontrol.

Our extensive research program into the potential release of the carp virus includes:

- Research using market and non-market valuation techniques to understand costs and benefits of carp biocontrol;
- A multi-method biomass study that will provide the most accurate picture obtained to date of carp abundance and distribution in Australian waterways.
- Epidemiological modelling exploring patterns of viral transmission and efficacy under varying scenarios and environmental conditions.
- Completion of trials testing susceptibility of non-target species to the carp virus.
- A quantitative assessment of the social, economic, and ecological risks posed by carp biocontrol.
- Field experiments and modelling investigating risk of water quality impacts including anoxia and blue-green algal blooms following major carp mortalities.
- Development of strategies for cleaning up dead carp.
- Exploring feasibility of secondary carp control approaches.
- Assessing productive uses for harvested dead carp.



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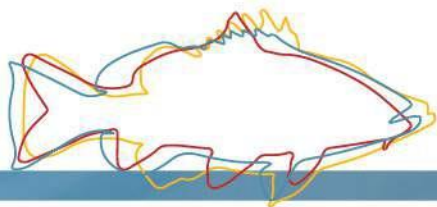
- Social science investigating community attitudes to carp biocontrol.

For more detail on these projects please visit <http://www.carp.gov.au/What-we-are-doing/Research/NCCP-research-projects>.

I speak on behalf of all those working on the NCCP when I say that we are committed to investigating and understanding international experiences with the carp virus, and using these to inform our research. This is a similar approach to that taken by Australian scientists when assessing the risks and benefits of releasing two control agents for rabbits – myxoma virus and rabbit calicivirus. In the United Kingdom (and much of Europe), both the myxoma virus and rabbit calicivirus were unwanted intruders rather than carefully-deployed biocontrol agents, and Australian plans to use calici for rabbit biocontrol drew concern and criticism from international scientists. For example, Dr Brian Cooke, the CSIRO epidemiologist involved in the initial rabbit calicivirus release, described his European colleagues' scepticism as follows:

Our visits aroused a lot of controversy and interest and I particularly remember a talk I gave in Tübingen, Germany, at the Federal Research Centre for Virus Diseases in Animals. The seminar room was packed while I faced a grilling by veterinarians and researchers who were concerned about such use of a lethal virus. Despite some difficulties in explaining how the risks of introducing a virus could be balanced against expected economic and conservation gains from its release, this two-way exchange of information was highly beneficial. I was better able to explain and weigh up risks and benefits, while scientists in Europe had better back-ground information to help them think about the issues in context. (Cooke, 2014, p. 68).

As Dr Cooke describes, these discussions provided a basis for mutually-beneficial dialogue between Australian and international scientists, ultimately contributing to a highly-successful biocontrol program. Indeed, rabbit biocontrol using both myxoma virus and calicivirus provided a benefit of approximately A\$70 billion to Australian agriculture in the 60 years to 2011 (Cooke et al., 2013). Neither virus has infected Australian native animals, nor have they negatively affected human health. The environmental benefits of reduced rabbit populations have been substantial (Cooke et al., 2013). While rabbit and carp biocontrol are not always directly comparable, Australia's experience of the former indicates that viral biocontrol of vertebrate pests deserves thorough investigation.

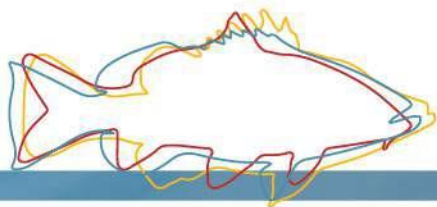


I note that page two of your letter raises some particular concerns including species specificity, the impact of dead carp and secondary infections. I propose that we re-open dialogue so that we can better understand your references to literature and work undertaken in the United Kingdom. However, as a first step, please find below a summary of work currently being undertaken by the NCCP in relation to these matters:

CyHV-3 species specificity

Twenty-two non-target species have now been tested for susceptibility to the carp virus in Australia, adding to a significant global body of work demonstrating the virus's specificity to carp. Taxa tested for susceptibility by CSIRO scientists comprise thirteen species of native Australian teleosts, native short-headed lampreys, the introduced rainbow trout (*Oncorhynchus mykiss*), two amphibian (frog) species, two reptiles (a lizard and a freshwater turtle), a freshwater crustacean, chickens (a representative bird), and mice (a representative mammal). Species selected for testing represent a broad (though not complete) range of the taxonomic groups likely to encounter CyHV-3 if it is released in Australia. The selection of species for non-target susceptibility trials was reviewed and approved by the relevant regulatory body, the Australian Pesticides and Veterinary Medicines Authority, and test results have been published in the international, peer-reviewed *Journal of Fish Disease* (McColl et al., 2016). An independent review of the non-target species testing, conducted by an experienced veterinary pathologist, is also underway, reflecting the central importance of thoroughly investigating the virus's species specificity. This review will also determine whether testing of additional species is advisable.

I also note that you cite Grimmett et al. (2006), who reported CyHV-3 replication in cultured cell lines of fathead minnow (*Pimephales promelas*), as evidence that CyHV-3 may infect species other than common carp. Grimmett et al. (2006) were seeking to identify the virus responsible for a mass carp mortality in the Chadakoin River, New York. Their study was not designed to test *P. promelas* susceptibility to CyHV-3, nor do they claim to have done so. Rather, they used cultured cell lines from *P. promelas* as a tool for identifying the virus. Crucially, culturing a virus using cell lines is a different procedure to testing a species' susceptibility to a virus, and viral replication in cultured cells does not imply susceptibility in the species from which the cultured cells were drawn. Viral replication in cultured cells does not reflect a species' real-world susceptibility because cultured cells exist in isolation from the immune system. In a living fish, susceptibility or resistance to virus infection is not solely determined at the cell level, but rather involves complex host-virus interactions including virus-



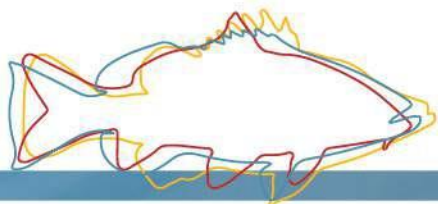
specific receptor and host immune responses (Davidovich et al., 2007). Thus, there are examples wherein CyHV-3 has been observed to replicate in cell cultures of species definitively identified as non-susceptible. For example, CyHV-3 can replicate in Au cell lines derived from goldfish (*Carassius auratus*) (Davidovich et al., 2007), yet living goldfish are not susceptible to CyHV-3 (Yuasa et al., 2013).

Assumption of a simple ‘single-outbreak’ epidemiology

Your letter states that *“Mr Barwick and the NCCP may be expecting a simple mass carp mortality...”*. I would like to respectfully refute this claim that the NCCP assumes a simplistic outcome from virus release. On the contrary, the NCCP’s entire research and planning process is based on recognition of the complexity of CyHV-3’s epidemiology, and challenges associated with continental biocontrol. Research to better understand the delicate inter-relationships between water temperature, carp behaviour, viral transmission, and the inevitable increase in host resistance is essential to informing the NCCP’s recommendations to the Australian Government. Previous experience with biological control of vertebrate pests both in Australia and internationally has clearly shown that success is contingent upon detailed knowledge of viral epidemiology in the specific context of the planned release location, and the NCCP has thorough research underway to ensure the program capitalises on this insight.

The NCCP’s carp biomass estimation project was briefly mentioned earlier in this letter, but warrants further discussion, as it will provide data essential for understanding the carp virus’s epidemiology in Australian environments. International experience in natural ecosystems and Australian laboratory experiments confirm that the carp virus is transmitted between carp most effectively when fish are in close proximity or direct physical contact. Therefore, understanding carp population density in the various habitats throughout the species’ Australian distribution is a fundamental input to epidemiological modelling.

Carp biomass has been estimated in several Australian locations to date, but only for geographically-restricted areas, and without a standardised methodology enabling direct comparison between areas. The NCCP’s carp biomass estimation project will provide estimates with the geographic coverage and standardised sampling methodologies necessary to enable delivery of epidemiological modelling results that accurately and usefully inform decision-making. The carp biomass estimation project involves collaboration between the fisheries agencies of four Australian states and the Australian



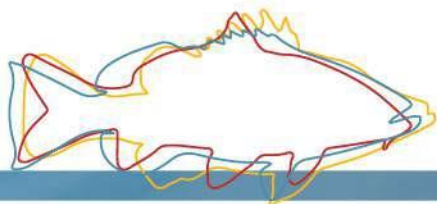
NATIONAL CARP CONTROL PLAN

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Capital Territory, and uses a multi-method approach, enabling cross-validation of estimates derived from different sampling approaches. The project will also use carp biomass data collected during various other aquatic sampling programs, and will calibrate and standardise these valuable pre-existing data sources to strengthen biomass estimates and increase efficiency. In summary, estimating carp biomass across the species' Australian distribution is a challenging but essential component of the NCCP research program. The project draws on appropriate expertise and is based on scientifically rigorous sampling approaches.

While habitat-specific carp biomass estimates are essential for predicting patterns of viral transmission, the complex epidemiology of CyHV-3 demands consideration of other factors including carp behaviour and physiology (especially aggregation and movement patterns), water temperature and hydrological (river flow) regimes, possible evolution of resistance as carp and the virus move towards equilibrium, viral salinity tolerance, and the possible existence in Australia of benign cross-reactive viruses that could confer resistance to the virus. These factors are being investigated by CSIRO and RMIT University researchers. Like the biomass estimation project, results from this research will directly inform the NCCP's epidemiological modelling work, ensuring that predictions of virus behaviour in Australian ecosystems are based on accurate, context-specific biological knowledge, and can therefore be confidently used to inform decision-making and planning.

The NCCP's epidemiological modelling project will use data collected from Australian ecosystems and carp populations to develop a detailed understanding of virus spread, efficacy, and the consequent timing and geographic distribution of carp mortality events if virus release proceeds. Epidemiological modelling is being coordinated by an experienced CSIRO veterinary epidemiologist, and involves collaboration with experts in carp biology and Australian river hydrology. Epidemiological modelling also draws on international experience and the insights of commercial fishers and other river users, ensuring that the NCCP benefits from existing knowledge. Ultimately, the epidemiological modelling work will provide insights into viral behaviour and host-virus interactions essential for deciding whether CyHV-3 release should proceed. If carp biocontrol does proceed in Australia, knowledge derived from epidemiological modelling will inform development of virus release and clean-up strategies.

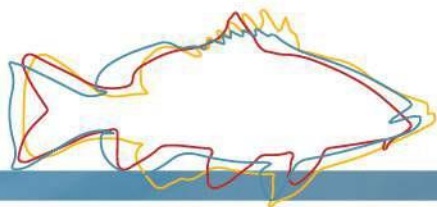


The impact of dead carp on other fish species and wildlife

Understanding and mitigating risks to water quality (and hence to other species and ecosystems) posed by possible major carp mortalities is central to the NCCP research program. University of Adelaide and University of Western Australia researchers are currently investigating the effects of decaying carp on water quality parameters, and the potential for short-term release of nutrients resulting from carp kill events to trigger cyanobacterial (blue-green algae) blooms. Crucially, the cyanobacterial component will also identify options for using river flow to divert nutrients down environmentally-benign pathways, potentially enabling some of the nutrients currently locked away in millions of invasive carp to benefit native ecosystems. Both the anoxia and cyanobacterial projects are basing their estimates on very high carp densities, providing an accurate understanding of 'worst-case' scenarios crucial to decision-making.

The anoxia and cyanobacterial projects are complemented by work underway at the University of Technology Sydney to investigate the effects of varying dead carp densities on a broad range of water quality parameters, including bacterial loads and the presence of decomposition byproducts. We are also co-investing in research to investigate appropriate water treatment responses to carp mortalities. More broadly, the NCCP risk assessment project is focussed on identifying risks to Matters of National Environmental Significance (MNES) as part of the NCCP's stringent approval process under the *Environmental Protection and Biodiversity Conservation Act 1999*. This suite of projects aims to quantify the potential impacts of major carp kills on water quality and specific ecosystem components.

A second set of projects addresses the logistical and practical elements of clean-up. These projects include a global scan and review of fish-kill clean-up approaches, including discussions with international agency staff, contractors and organisations with direct and extensive fish-kill clean-up experience, and work to explore engineering solutions that could enhance clean-up efficiency. Clean-up planning is being undertaken by a dedicated Operations Working Group (OWG) within the NCCP. The OWG includes suitably qualified and experienced representatives from all the Australian jurisdictions where carp occur, and will also consult widely with people and organisations with direct practical experience of fish kill clean-up, large-scale logistical response, and complex operational planning. The OWG will use information from research and consultation to develop effective, achievable, and flexible clean-up plans.



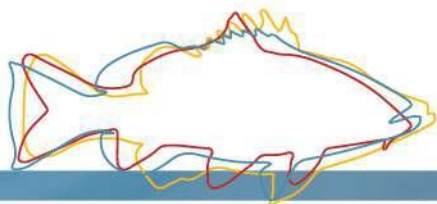
Risk of secondary infections:

Your letter also raises the prospect of secondary infections by pathogenic bacteria living on decaying carp bodies. Bacterial loads following carp mortality events are partly a function of water quality. Oxygen and nutrient levels are especially important determinants of bacterial proliferation. For example, your letter specifically mentions *Clostridium botulinum*, an anaerobic bacterium requiring anoxic (no oxygen) or hypoxic (low oxygen) conditions, and *Aeromonas*, some species of which multiply in decaying fish. The NCCP's work in developing strategies to safeguard water quality has been described elsewhere in this letter, but is also relevant here, as protecting water quality will provide an inherent safeguard against the proliferation of harmful bacteria.

Risks associated with harmful bacteria are also being directly assessed through research underway at the University of Technology Sydney (and already mentioned briefly). This research includes quantification of bacterial loads under varying densities of decaying carp, while the NCCP risk assessment will ensure that this risk is considered as part of legislative approval processes. The risk assessment project also provides a trigger for further investigation of bacterial risks, should these emerge as a key concern.

This letter has covered considerable detail, but a key point I would like to make is that no decision has been made at this time on deployment of a biocontrol agent for the control of carp in Australia. Rather, the National Carp Control Plan is coordinating the careful research, planning, and community consultation necessary to determine whether virus release is viable. Virus release cannot proceed unless stringent legislative approval processes, requiring transparent and thorough risk assessment, are satisfied.

As research and risk assessment under the NCCP proceeds, I welcome an open dialogue between your organisation and the Fisheries Research and Development Corporation to further discuss these and any other issues you wish to raise. There are a range of ways we can continue to work together to explore how your insights and research may benefit work underway by the NCCP. I suggest a useful next step would be a call to discuss. My number is +61 249163957. Please feel free to call any time convenient to you.



NATIONAL CARP CONTROL PLAN
RESTORING NATIVE BIODIVERSITY

I thank you for your interest and concern.

Yours sincerely

Matt Barwick
National Coordinator, NCCP.

Further Reading

- Cooke, B.D. (2014). *Australia's War Against Rabbits: The Story of Rabbit Haemorrhagic Disease*. CSIRO Publishing, Collingwood, Victoria.
- Cooke, B., Chudleigh, P., Simpson, S. & Saunders, G. (2013). The economic benefits of the biological control of rabbits in Australia, 1950 – 2011. *Australian Economic History Review*, 53, 91 – 107, doi: 10.1111/aeht.12000.
- Davidovich, M., Dishon, A., Ilouze, M. & Kotler, M. (2007). Susceptibility of cyprinid cultured cells to Cyprinid herpesvirus 3. *Archives of Virology*, 152, 1541 – 1546. 10.1007/s00705-007-0975-4
- Grimmett, S.G., Warg, J.V., Getchell, R.G., Johnson, D.J. & Bowser, P.R. (2006). An unusual koi herpesvirus associated with a mortality event of common carp *Cyprinus carpio* in New York State, USA. *Journal of Wildlife Diseases*, 42, 658 – 662.
- McColl, K.A., Sunarto, A., Slater, J., Bell, K., Asmus, M., Fulton, W., Hall, K., Brown, P., Gilligan, D., Hoad, J., Williams, L.M. & Crane, M St J. (2016). Cyprinid herpesvirus 3 as a potential biological control agent for carp (*Cyprinus carpio*) in Australia: susceptibility of non-target species. *Journal of Fish Diseases*, 10.1111/jfd.12591.
- Yuasa, K., Sano, M. & Oseko, N. (2013). Goldfish is not a susceptible host of Koi Herpesvirus (KHV) disease. *Fish Pathology*, 48, 52 – 55. <http://dx.doi.org/10.3147/jsfp.48.52>

From: Matt Barwick <matt.barwick@frdc.com.au>
Sent: Saturday, 12 May 2018 10:58 AM
Subject: NCCP Program Update

12 May 2018

RE: NCCP PROGRAM UPDATE

In May 2016, the Federal Government announced it would be allocating funds to investigate possible methods to reduce impacts of the pest species, European carp on Australia's waterways.

Most agree carp impacts are severe in many areas of Australia. They have become known as the 'rabbits of our rivers' and significantly impact water quality, aquatic plants, native species and environmental health.

It is clear the debate lies not in whether carp impacts need reducing, but on the most effective measures to achieve this – socially, economically and environmentally.

The National Carp Control Plan team was formed to tackle the challenge of identifying a smart, safe, and effective approach to manage carp impacts in Australia. A key focus of this process is to explore the potential use of biocontrol.

Under the NCCP we have engaged 19 of Australia's leading universities, research institutions and expert organisations to deliver independent and rigorous science and explore carp control options. Aspects of the research include field studies to estimate carp biomass in affected habitat types Australia-wide, further testing of the species-specific nature of the carp virus, strategies for cleaning up dead carp if the virus is approved for release, complementary methods to control carp such as commercial fishing and genetic biocontrol, as well as research into alternate uses for carp biomass.

Work is also underway to identify how we can best design a plan to reduce risk of negative impacts to people whose business or recreation depends on carp-affected waterways.

Those working on addressing knowledge gaps and risks join others from around Australia exploring regulatory considerations, consulting, communicating and engaging with stakeholders, and conducting operational planning activities; over 200 of Australia's most experienced scientists in relevant disciplines, communicators, policy makers and planners working together on this national problem.

Much progress has been made, with a broad program of research under the NCCP now over half way through. Research findings will go through an extensive independent peer review process to ensure they are robust before being used and made public.

With key research outputs from three projects currently in independent peer review phase and outputs from a further four entering this phase by mid-year, we will begin sharing some of the findings of NCCP projects over coming months, and look forward to doing so.

I have provided a link to NCCP's March Progress Report [here](#) summarising the research work underway and the findings that are emerging from this important work. The next progress report is due in June 2018.

One common concern raised by stakeholders through consultation conducted to date is that more time is needed to review the research findings and ensure that the right recommendations are made in relation to carp control.

The NCCP was set an initial deadline of December 2018 to deliver recommendations to governments. While we still have six months remaining, I want to assure you that deadlines will not shape outcomes.

This is an important consideration for our nation and one that must deliver long term improvements to our waterways, and how we enjoy them. If the NCCP believes that adequate research and consultation with communities cannot be delivered within the agreed timeframes, an extension will be sought. Those working on the NCCP are currently considering this possibility.

The NCCP reiterates its promise to:

- make findings of all research projects commissioned by the NCCP available via its website www.carp.gov.au.
- ensure a suitable period of time is available to seek feedback from stakeholders on research underpinning the Plan, and draft recommendations.
- share with the public key outputs for comment, including:
 - the draft National Carp Control Plan Operations Strategy, which will describe how release and clean up might occur, and outlines roles and responsibilities.
 - NCCP reports which describe risks and how they might be managed if approved.

This is complex and important work, and I thank you for your patience.

Have Your Say - www.yoursay.carp.gov.au

I also wanted to share with you a new engagement platform that we have just launched to provide people with an opportunity to read more about the research underway and ask questions in relation to the NCCP program and particular areas of focus.

Over the coming months we will be taking a deeper dive into the areas that we have learned are of most interest to the public, and provide an opportunity for users to have their say in relation to those topics. The first area of focus is Curtin University's Carp Biomass Utilisation research and we encourage you and your members to register and share your thoughts: <https://yoursay.carp.gov.au/>

Webinar Invitation – Tuesday 22 May 2018 (6PM AEST)

NCCP & Joe Pera, Water NSW and University of Technology, Sydney

To provide further detail around the work we are undertaking, the NCCP will also be hosting a NCCP Research Update webinar on Bang the Table to provide stakeholders like yourself an opportunity to hear directly from leading scientists on the work they are undertaking and to ask any questions you may have in relation to this work. The webinar will feature a presentation by Joe Pera, researcher with Water NSW and University of Technology in Sydney on water quality impacts of carp mortality events, and a short presentation by Matt Barwick, prior to a panel discussion where questions will be invited and answered.

To register your interest for this webinar, please email mikala.dickie@frdc.com.au and a link will be provided. I hope that you, or a representative of your organisation, will be able to attend. Further webinars will be held over the coming months.

I look forward to continuing to work closely with you and would be happy to discuss any of the above in more detail if desired.

Yours sincerely

Matt.

Matt Barwick

National Coordinator

National Carp Control Plan

Fisheries Research and Development Corporation (FRDC)

25 Geils Court Deakin, ACT, 2600

Locked Bag 222, Deakin West, ACT 2600

0422 752 789

matt.barwick@frdc.com.au

www.carp.gov.au

OVERARCHING KEY MESSAGES

The National Carp Control Plan (NCCP) will investigate the most effective measures to achieve a reduction in the carp population, in order to recover Australian waterways and biodiversity.

- ❑ A key focus of the NCCP is to explore the potential use of a biocontrol, Cyprinid Herpesvirus3 (hereafter, the carp virus) in addition to other complementary measures, to control carp.
- ❑ The NCCP will be informed by a comprehensive body of research currently underway, as well as an in-depth stakeholder engagement program.
- ❑ A significant reduction in carp numbers would mean cleaner Australian waterways, increased biodiversity, and ultimately healthier Australian communities.

Carp impacts are severe in many areas of Australia. They have become known as the ‘rabbits of our rivers’ and significantly impact water quality, aquatic plants, native species and environmental health.

- ❑ Carp now make up 80 per cent of the fish biomass in many Australian waterways and up to 93 per cent in some areas.
- ❑ Carp are considered by some to be one of the worst introduced pest species in Australia.
- ❑ The pest species is found in every state and territory apart from the Northern Territory, and have major negative impacts on water quality and the amenity value of freshwater rivers and lakes.

The Fisheries Research and Development Corporation (FRDC) is leading a \$15 million planning process, on behalf of the Australian Government, to inform development of an integrated program of measures for the control of carp impacts in Australia.

- The NCCP is aiming to deliver its recommendations in 2018.
- The NCCP aims to promote recovery of a variety of native fauna including fish, invertebrates, waterbirds and platypus, and the habitats in which they live. The prevalence of introduced carp is currently impacting many sciences and ecosystems negatively.

The NCCP is a process, not a foregone conclusion.

A decision to release the carp virus has not been made yet. Recommendations will be provided to state and federal governments in late 2018. Governments will review the research and collectively decide on what are the most appropriate options for carp control in Australia.

THE RESEARCH

The NCCP is working with some of Australia's leading universities and research organisations to inform a decision about whether to release the carp virus.

- The NCCP has engaged 19 of Australia's leading universities, research institutions and expert organisations to deliver independent and rigorous science and explore carp control options.
- ❓ Examples of research being undertaken includes field studies to estimate carp biomass in affected habitats, further testing of the species-specific nature of the carp virus, and strategies for cleaning up dead carp (if the virus is approved for release).
- ❓ Work is also underway to identify how the NCCP can design a plan to reduce risk of negative impacts to people whose business or recreation depends on carp-affected waterways.
- ❓ Researchers are also looking at complementary methods to control carp, such as commercial fishing and genetic biocontrol, as well as research into alternate uses for carp biomass.
- ❓ While it is important to conduct our own research here in Australia, we also welcome the insights from international research to help inform the plan.

The NCCP research program has made significant progress.

- ❓ Research findings will go through an extensive independent peer review process to ensure they are robust, before being made public.
- ❓ Currently three research projects are in independent peer review phase and outputs from a further four projects will enter this phase mid-year.
- ❓ The NCCP was set an initial deadline of December 2018 to deliver recommendations to governments. If the NCCP believes that adequate research and consultation with communities cannot be delivered within the agreed timeframe, an extension will be sought. Those working on the NCCP are currently considering this.
- ❓ Findings from the research projects will start to be published on the website www.carp.gov.au when finalised.

THE CARP VIRUS

Australian scientists have determined that the carp virus could reduce the number of carp in freshwater systems by more than 70 per cent.

- ❓ Testing conducted by the CSIRO, through the Invasive Animals Cooperative Research Centre, has found that under optimal conditions, the carp virus could kill up to 95 per cent of individual carp in populations that have not previously been exposed to the virus. Australian carp populations have not been exposed to this virus to date.
- ❓ The virus is present in 33 countries and research has demonstrated that common carp are the only species that can be infected by the virus.
- ❓ Rigorous testing has been conducted, with additional testing proposed, to provide

further assurance and safeguard against any potential unintended risks to Australian native species.

- ❑ The carp virus does not currently occur in Australia.

The carp virus alone will not eradicate carp populations. Complementary measures will also need to be undertaken.

- ❑ Additional management interventions will help to supplement the virus and ensure carp populations remain suppressed over the longer term.
- ❑ If the virus were to be released, some carp will inevitably survive, and over time populations would rebuild. Therefore, continuing investigations of synergistic control measures, (e.g. daughterless carp) are important to ensure success of carp control impacts is maximised.

The carp virus is safe for humans and other animals.

- ❑ There are no examples of any fish viruses causing disease in humans. Recent research conducted by the Australian National University (ANU) confirms this, reporting there is no evidence to suggest the carp virus poses any direct risk to human health.
- ❑ The ANU study demonstrated the carp virus is incapable of transmitting from animals to humans, and there is no evidence that it could develop this capability.
- ❑ Common carp are the only species that can be infected by the virus. However, other fish species may carry the virus on them without infection for short periods of time. These are known as passive carriers.

Strict regulatory controls and protocols will need to be met before the virus could be approved for use.

- ❑ Considerable work, including further research into ecological impacts, extensive community consultation, and exploration of options for utilising carp killed by the virus, is required.

CONSULTATION

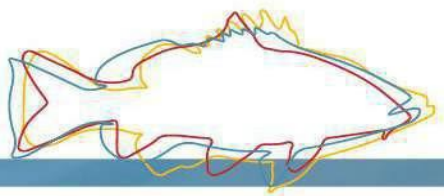
Carp impact everyone, we want to solve this challenge together.

- ❑ Extensive consultation has, and will continue to be conducted across relevant stakeholder groups and communities, to ensure the NCCP team is aware of the ecological values of the affected river systems and any likely direct and indirect impacts (including social, environmental, economic, and cultural) that may eventuate from the use of this control method.
- ❑ The public is encouraged to visit <https://yoursay.carp.gov.au>, a new engagement platform the NCCP recently launched, to provide people with an opportunity to read more about the research underway, ask questions, and provide feedback.

- ② The NCCP team value the opinions and beliefs of Australian communities impacted by carp and are committed to engaging with as many people as possible to capture such feedback and develop a proposal that best meets the needs of those communities.

Healthy river systems and water ways result in healthier communities.

- ② This program is about promoting the recovery of the health of our waterways, fisheries and aquatic ecosystems. Carp control is the tool we believe we can use to deliver this outcome.



MDA MAY NEWSLETTER

The National Carp Control Plan (NCCP) team met recently with local waterway experts in Beaudesert, Queensland to share science and knowledge that will help inform consideration of whether the carp virus should be released as part of a strategy to reduce carp impacts in Australia.

The Logan-Albert region was selected as one of a number of case study areas for the NCCP which together cover a range of geographic areas and habitat types to better understand on-ground considerations associated with possible release of the carp virus. The workshop findings will be used to inform regional planning, and develop release and clean-up strategies at a catchment level - should the carp virus be released.

Moving south, Curtin University researchers are currently investigating options for the sustainable use of the carp biomass that could result from the potential release of Cyprinid herpesvirus 3 (carp virus), under the NCCP.

The research project involves laboratory-based processing and commercial-scale trials of processes that produce usable carp-based products including fertilisers, compost, fishmeal and aquaculture feed ingredients.

Researchers recently completed a commercial-scale trial in Victoria to separate two tonnes of dead carp into solids for local composting trials and liquids for further laboratory-based digestion trials looking at biogas production. Another 300kg of whole carp was sent to a nearby worm farm.

This followed a similar trial in South Australia using enzyme hydrolysis to break down 10 tonnes of carp biomass into smaller peptides and amino acids, which can be used for organic fertiliser or as an aquaculture or animal feed ingredient. Outcomes for the remaining bones and scales are also being investigated.

The MDA has been working with the Fisheries Research and Development Corporation (FRDC) and others supporting communication and engagement to ensure local government is kept informed and has an opportunity to contribute to the conversation.

For information on the NCCP, email carp@frdc.com.au or call 1800 CARP PLAN (1800 2277 7526). To keep up to date on the National Carp Control Plan go to: <http://www.carp.gov.au>. Your input means that government recommendations can take into consideration the attitudes and opinions of all interested stakeholders.

Mikala Dickie

From: mikala.dickie@mail136-224.atl41.mandrillapp.com on behalf of
mikala.dickie@seftons.com.au
Sent: Tuesday, 5 June 2018 1:18 PM
To: Mikala Dickie
Subject: MailChimp Template Test - "NCCP E-newsletter template"



Issue 1, 2018



Dear *|FNAME|*,

Welcome to the latest NCCP news. From Beaudesert to Bendigo and Sydney to Swan Hill, our team continues to meet with local communities and stakeholders to inform the National Carp Control Plan (NCCP). Some of the key issues raised at these meetings to date have included virus spread, impact on water quality and logistics of clean up, with more than 80 sessions held and more to come.

A detailed report on the feedback shared at the meetings will be made public next month.

In this issue:

- Find out more about one of our most recent workshops, in Logan, Queensland
- Read NCCP's response to an Opinion Piece published in the Sydney Morning Herald.
- How do you use ten tonnes of dead carp? Find out here!
- Did you know? Test your carp knowledge.

We are committed to engaging and consulting with the public as widely and openly as possible. To ensure that everyone is given the opportunity to share their thoughts and opinions with the NCCP, we have launched yoursay.carp.gov.au – a dedicated site where visitors can learn more about the work of the NCCP and also comment and ask questions. You can also email us at carp@frdc.com.au.

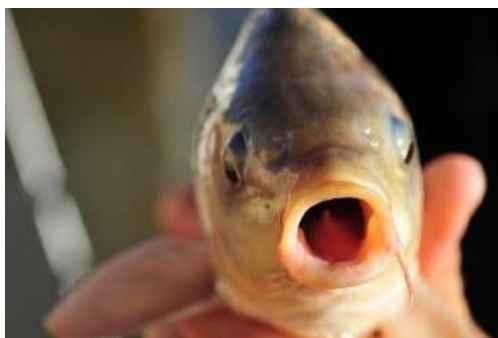
Your input means that government recommendations can take into consideration the attitudes and opinions of all interested stakeholders.

Talking ‘carp’ in Queensland’s Logan-Albert Catchment

The NCCP team met recently with local waterway experts in Queensland’s Logan-Albert Catchment to share science and knowledge that will help inform consideration of whether the carp virus should be released as part of a strategy to reduce carp impacts in Australia.

From mapping local carp hotspots to understanding the Catchment’s hydrology and water scheme, the workshop findings will be used to inform regional planning, and develop release and clean-up strategies at a Catchment level - should the carpvirus be released.

The Logan-Albert region was selected as one of a number of case study areas for the NCCP which together cover a range of geographic areas and habitat types to better understand on-ground considerations associated with possible release of the carp virus.



[Click here to read more >>](#)

Carp are the cane toads - NCCP responds to the Sydney Morning Herald

Earlier this month, the Sydney Morning Herald published an [opinion piece by Professor Simon Chapman](#), raising concerns around the safety and implications of using biocontrol, or the carp virus, as a solution to the carp problem. Our National Coordinator, Matt Barwick provided a response to the article, in order to correct and clarify a number of claims made by the author:

Like cane toads, carp are an introduced species that have flourished at the expense of the Australian environment and its native wildlife.

Their scourge is recognised across the country. Following years of concern amongst the community, the \$15 million National Carp Control Plan (NCCP) was established, tasked by the Australian Government to find a solution.

The NCCP is made up of some of Australia's most recognised universities, institutions and agencies. There are currently 13 research projects underway, which will inform the final recommendations to the Australian Government later this year.

We are investigating a range of solutions, one of which is biocontrol (also known as the carp virus). However, any solution will likely include a multi-pronged approach because there is no silver bullet.

[To view the original SMH piece & NCCP's full response, please click here >>](#)

How do you use ten tonnes of dead carp?

Curtin University researchers are investigating options for the sustainable use of the carp biomass that could result from the potential release of Cyprinid herpesvirus.

The research project, Assessment of options for utilisation of virus-infected carp, involves laboratory-based processing trials, as well as commercial-scale trials of processes that produce usable carp-based products including fertilisers, compost, fishmeal and aquaculture feed ingredients.

Researchers recently completed a commercial-scale trial in partnership with Goulburn Valley Water in Victoria to separate two tonnes of dead carp into solids for local composting trials and liquids for further laboratory based digestion trials looking at biogas production. Another 300kg of whole carp was sent to a nearby worm farm.



This followed a similar trial in Port Lincoln, South Australia using enzyme hydrolysis to break down 10 tonnes of carp biomass into smaller peptides and amino acids, which can be used for organic fertiliser or as an aquaculture or animal feed ingredient. Outcomes for the remaining bones and scales are also being investigated.

We know there are large volumes of carp in our waterways, so working out what to do with the carp biomass if biocontrol proceeds provides us with a measured approach to help inform NCCP recommendations and the subsequent decision-making process.

Image: Carp ready for processing into fish hydrolysate at SAMPI in Port Lincoln, South Australia. Photo courtesy of SAMPI.

[Read more about NCCP's research projects here >>](#)

Did you know?



- Carp were first introduced in the 1800s but populations remained low until the 1960s, when they were introduced into a reservoir at Morwell, Victoria. Rapid spread of these 'Boolarra Strain' carp within Victoria followed, and by 1962 a Victorian state government inquiry had determined that carp should be eradicated.
- Carp spawn earlier than many Australian native species, which means that their juveniles have access to food and other resources before many native fish species.
- Carp can tolerate a wide variety of environmental conditions, have a broad diet, grow rapidly, mature early, can produce large numbers of eggs, are strong swimmers, good jumpers, and do well in ecosystems that are modified by humans.
- Carp thrive in rivers that are already degraded, and tend to intensify the impacts of other environmental pressures.

Did you see?

The proposal to reduce carp numbers in Australia's waterways was the subject of a story on ABC TV's Landline Program on 13 May 2018.

The program spoke with range of individuals and stakeholder groups, some of whom are concerned that the virus is the wrong approach, while others believe it will deliver positive outcomes for our environment. Landline also interviewed South Australia's Glen and Tracy Hill who explained that carp is a great eating fish and cooked up some delicious looking carp bites on the program.



[View the program by clicking here >>](#)

Carp control in North America


North America is watching Australia with interest as it considers the possible use of the carp virus to control common carp in Minnesota. Researchers at Minnesota Aquatic Invasive Species Research Centre discovered KHV is present in Lake Elysian, Minnesota and responsible for thousands of dead common

carp in the Lake last month.


While researchers acknowledge there is much work and risk assessment to be done, the unexpected fish kill confirmed the virus was an effective biocontrol tool that was also species-specific.

[For more information >>>](#)

Have your say...



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Carp need to be controlled in Australia – we're working on how.

Your say carp

This is a site dedicated to sharing the latest information about the National Carp Control Plan (NCCP) with key project stakeholders and the community.

The NCCP has been established to explore ways to improve the quality of Australia's waterways, with one being the possible release of the carp virus Cyprinid herpesvirus 3 (CyHV-3, hereafter 'the carp virus'), through a \$15 million Fisheries Research and Development Corporation (FRDC) planning process, on behalf of the Australian Government.

Please engage with us by reviewing information, reading the latest news, providing feedback. We encourage you to check back regularly and ask questions.



Register to have your say

FAQs

Can't we just eat them all?

Will the virus affect humans?

What work is the NCCP undertaking?

What risk do dead carp pose to water quality - in particular dissolved oxygen and blue-green algae?

When and where might the virus be released?

Key information

The NCCP has launched yoursay.carp.gov.au, a site dedicated to sharing the latest news and research. We encourage you to register and share your thoughts on some of our research projects.

If you were unable to attend one of the NCCP's community events or have any questions and concerns regarding the plan, we want to hear from you. Help us understand what's important about your local waterways. Simply email us at carp@frdc.com.au.

Visit: <https://yoursay.carp.gov.au/>

Email: carp@frdc.com.au

Call: 1800 CARP PLAN (1800 2277 7526)



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PT-04 - MILESTONE PROGRESS REPORT

FRDC PROJECT NUMBER: 2017-164

Title: NCCP Communications Program 2018

MILESTONE NUMBER: 7

DATE DUE: 30 June 2018

PRINCIPAL INVESTIGATOR: Seftons

OVERALL PROJECT PROGRESS:

Milestone Status

Has this milestone been achieved (Yes/No)	Yes
Will the project be completed according to the current milestone schedule (Yes/No)	Yes

PROJECT PROGRESS AGAINST PROJECT OBJECTIVES

Significant progress was made with the communications and stakeholder engagement program during June 2018 despite some uncertainty around program timelines and budgets.

A significant focus was dedicated to stakeholder engagement in June and ensuring NCCP have the opportunity to meet with key stakeholders – whether they be industry or local, state or federal government to keep them informed of program updates.

A range of national and state opportunities were explored for the NCCP including the Australian Local Government Association Conference, City Smart re the Pest Fishing event, upcoming meeting opportunities with Murray Darling Association ROC meetings, securing meetings with the Australian Veterinarian Association and consideration of involvement Cotton Conference, to name a few.

Progress continued with NCCP's online engagement platform Bang the Table with content developed, a number of enquiries addressed and new individuals signing up.

In terms of media relations, no proactive releases were distributed in June due to the program being in a 'holding pattern' with funding and timing being assessed by FRDC and the Federal Government's Department of Agriculture and Water Resources. Until clarification on these elements were made, it was advised that NCCP avoid media exposure. Despite this, Seftons continued to work on media content in draft form.

Newsletter content was finalised during June however was not distributed until clarity around project timings and funding was provided. Behind the scenes, Seftons worked with FRDC to explore future distribution options including Mail Chimp and via FRDC's CRM software.

Program milestones and outputs were all met. Specific content produced included:

- Australian Local Government Association conference involvement for NCCP
- Securing NCCP speaking opportunity at NSW Local Government Association Water Conference (Sept)
- Facilitating Forbes community consultation
- Management of Bang the Table including participant responses
- Writing on the Community Consultation roadshow report
- Liaison with City Smart re NCCP involvement in Pest Fishing Competition

- Development of updated copy for NCCP June newsletter
- Australian Fishing Trade Association magazine article
- Finalise draft Clearer Waters / Bang the Table media release
- Explored Cotton Conference opportunities for NCCP
- Developed FISH Insert copy overview and supporting material
- MDA Newsletter content re NCCP
- Support for RRAT speaking hearing
- Communication Working Group management and liaison
- Media monitoring and weekly reporting

Repeat the following three sections for each milestone in the period being reported on:

1. ORIGINAL MILESTONE DATE AND TITLE:

30/062018 – Milestone 7

2. REVISED MILESTONE DATE AND TITLE:

n/a

3. PROGRESS AGAINST MILESTONE (Achieved/Not Achieved):

ACHIEVED

- Liaison with key stakeholder groups to ensure they are informed of program status:
 - ALGA Conference – liaised with MDA to provide NCCP messaging for use at ALGA in lieu of attendance
 - Water Conference Panel Discussion – NSWLG approved NCCP involvement and speaker panel outline developed
 - Forbes – attended and facilitated community meeting in Forbes in partnership with Local Land Services
 - Murray Darling Association – Liaison regarding ALGA and NSW Local Government Water Conference
 - City Smart – Liaison re Pest Fishing Competition and NCCP opportunities
 - Australian Veterinary Association – Initial conversation to coordinate meeting with NCCP
 - Murray Darling Association – Coordinate NCCP presentation opportunities with upcoming ROC meetings including RAMROC and Namoi
 - RRAT – Liaison with RRAT Committee and Secretary re briefing meeting with NCCP
 - Dr Jacki Schirmer – ongoing engagement to ensure communications program aligns with Dr Schirmer's work.
- Management of the Communications Working Group, in conjunction with NCCP
 - Developed meeting minutes following face to face meeting in Adelaide
 - Liaised with Chair Ian McDonald on program status and meeting minutes
 - Liaised with members on program update for CWG post Adelaide meeting
 - Liaised with SA re new representation in lieu of team change
- Development of supporting communications collateral
 - Liaised with NCCP re newsletter template and FRDC CRM model
 - Murray Darling Association May Newsletter Update
 - Bang the Table content
 - Developed overview of content for FRDC Fish Insert
- Development of two proactive media releases per month
 - Finalise the Bang the Table / Clearer Waters Media release (awaiting distribution)
 - Copy for Australian Fishing Trade Association publication
 - Development of media relations story ideas ahead of program timeline and budget clarity
- Preparation of reactive responses to all relevant media within 24 hours
 - Monitoring of Weekly Times article

- Research ahead of RRAT special hearing
- Verbal counsel to NCCP in relation to negative social media commentary
- Daily media monitoring on issues/challenges to the NCCP and relevant information is forwarded on to NCCP team.
- Weekly media analysis report provided with sentiment and key themes listed. Each story picked up on Isentia and BuzzWords is analysed, with about 10 questions answered for each, with data kept in a spreadsheet which is updated daily and forms the basis for the report.
- Key themes are noted and issues management response is developed.
- Ongoing liaison with FRDC to identify and respond to threats
 - Daily phone calls and emails to FRDC/NCCP to discuss next steps and to identify issues. Focus on timing and budget messaging.
 - Provided counsel to NCCP RRAT Senator Response letter
 - Weekly media analysis report developed and provided
- Bang the Table content management
 - Management of questions received via Bang the Table and updates on new registrations
 - Investigation of upcoming webinar options
- Carp Inbox Support
 - Provided draft responses as required
 -

NOT ACHIEVED

n/a

PUBLICATIONS/PRODUCTS

- Draft Clearer Waters / Bang the Table media release
- Clearer Waters footage and messaging for Australian Local Government Conference
- Speaker panel pitch for NSW Local Government Water Conference
- Updated stakeholder engagement calendar
- Murray Darling Association June Newsletter
- NCCP Newsletter – June (draft)
- FRDC Fish Insert
- Australian Fishing Trade Association editorial
- Weekly media analysis report 4.6.2018
- Weekly media analysis report 11.6.2018
- Weekly media analysis report 18.6.2018
- Weekly media analysis report 25.6.2018

SPECIAL CONDITIONS

N/A

INTELLECTUAL PROPERTY ISSUES ARISING:

N/A

CONTACT WITH BENEFICIARIES:

- Members of the Communications Working Group
- Local Land Services
- Murray Darling Association and member councils
- Water NSW
- University of Canberra's Jacki Schirmer
- Australian Veterinarian Association
- Cotton Info re Cotton Conference
- Australian Local Government Association
- Centre for Invasive Species Solutions

PROGRESS AGAINST COMMUNICATION & EXTENSION PLAN:

The communications program is progressing positively with all agreed outputs met. The communications activities have so far aligned with the objectives of this project. The objectives are to inform and engage communities and stakeholders about the NCCP; widely communicate the NCCP process; provide opportunities for community input into the NCCP; support the running of effective, informative and clear public information sessions; support and enhance FRDCs reputation through developing high quality materials and managing and delivering the project with high professionalism.

VARIATIONS TO PROJECT:

N/A

National Carp Control Plan – Weekly Media Report

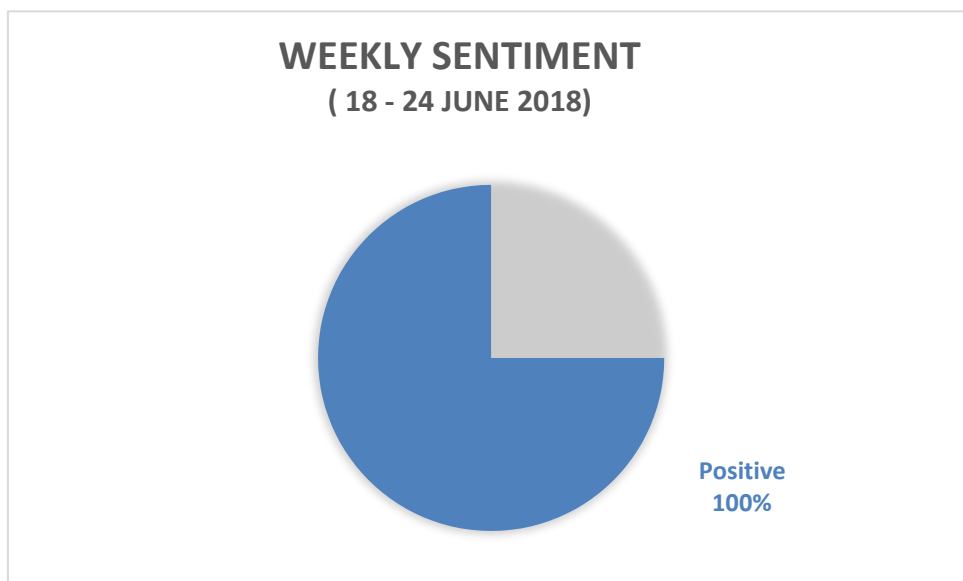
18 – 24 June 2018

Total NCCP articles published
this week: 4

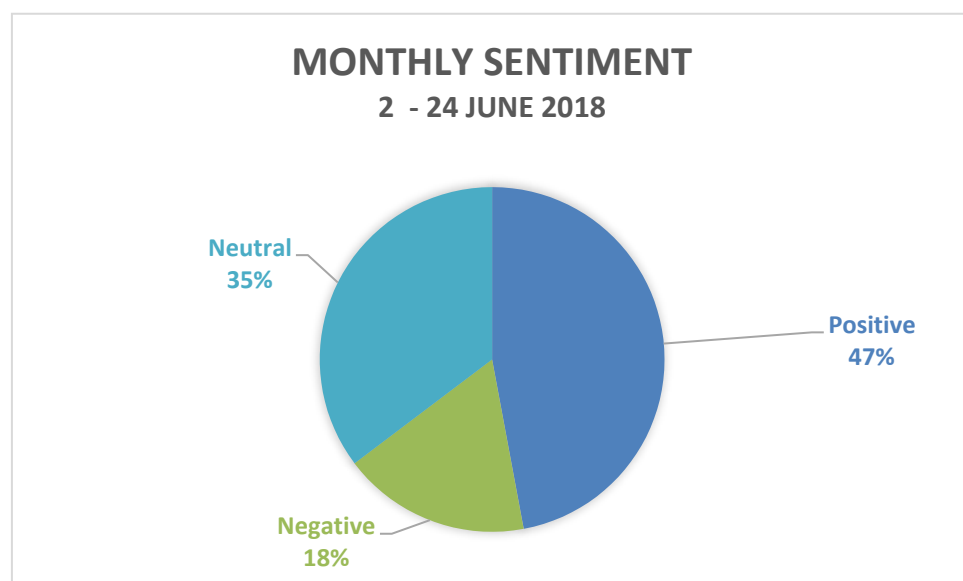
Total NCCP articles published
this month: 17

The below pie chart illustrates the number of articles and the general 'sentiment' for the National Carp Control Plan, for the week and for the month. For more on how to read the chart, see below.

Number of Articles and Sentiment in media – this week



Number of Articles and Sentiment in the media – month (June)



Number of Articles and Sentiment in media – this week

- ☐ In the period 18 - 24 June 2018, the National Carp Control Plan received coverage in four print articles.
- ☐ All four items were positive in sentiment.
- Three of the four articles appeared in South Australia and were written regarding Mid Murray Council's research underway into a fish fertiliser project as a practical way to make use of tonnes of dead carp in anticipation for the virus release.
- ☐ The other print article featured in The Lad and was a general overview and status update of the NCCP project.

Number of Articles and Sentiment in media – month

- ☐ This month (June), NCCP has received coverage in 17 articles.

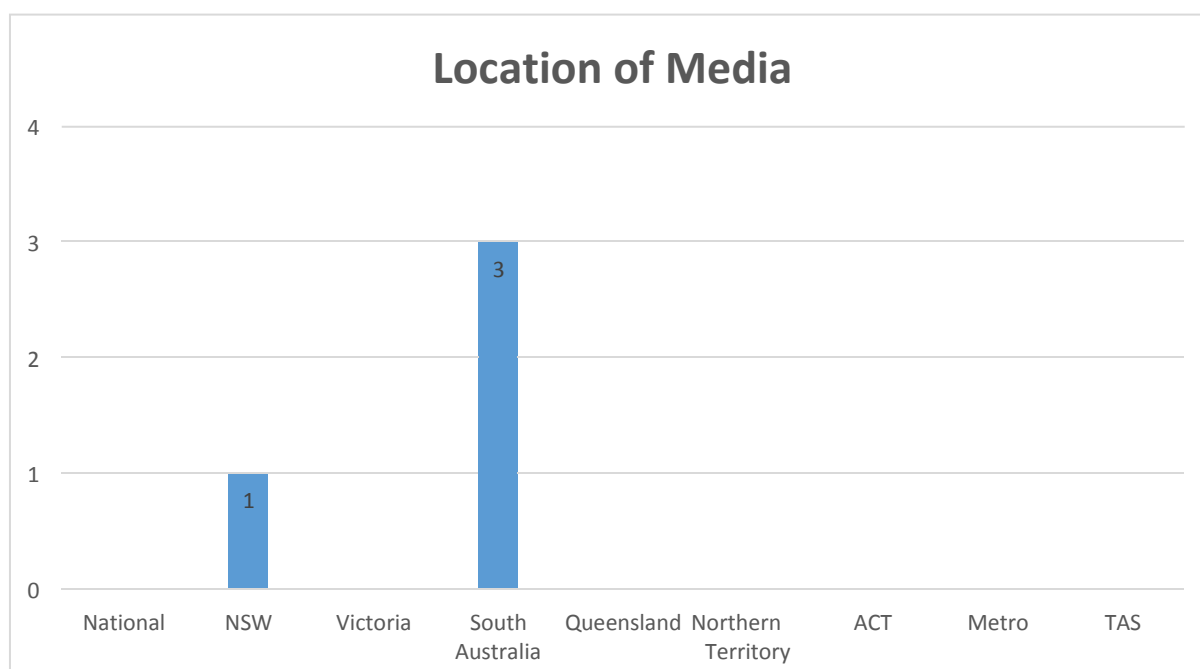
How to read the chart:

The pie chart represents the Neutral, Positive and Negative sentiment of media monitored for the week.

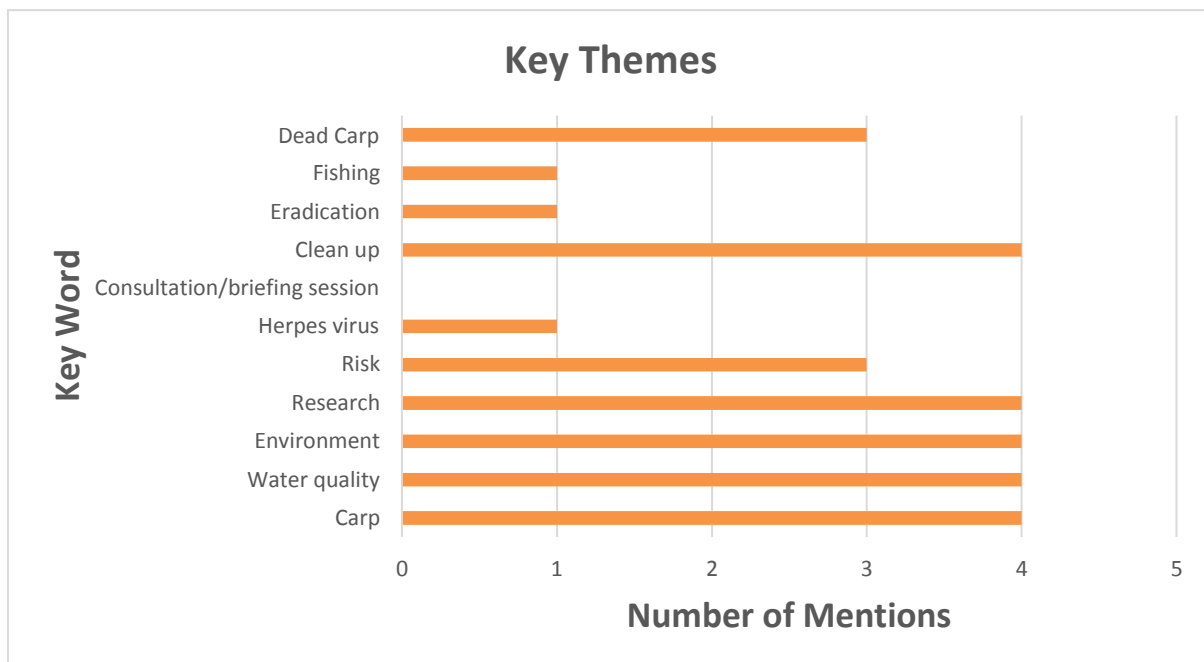
Sentiment is based on a simple points system, where 1 point is given to each article which has been deemed positive, negative or neutral.

Location of Media - week

- The below chart identifies what state the articles appear – they are broken down in to state (individual), national or metro locations.



Key themes/messages in media – this week



- ❓ In the various articles monitored this week the key themes were carp, research, water quality, environment and clean up. Although the theme may be mentioned more than once in the article, this is only captured once to show what the key theme in the article was. An article may have more than one key theme.



19 Jun 2018

Murray Valley Standard, Murray Bridge SA

Author: Emma Zirkel • Section: General News • Article Type: News Item

Audience : 2,163 • Page: 2 • Printed size: 262.00cm² • Market: SA • Country: Australia

ASR: A110586 • Words: 398 • Item ID: 971014415

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Council back carp clean- up proposal

MID MURRAY COUNCIL

BY EMMA ZIRKEL

MID Murray Mayor Dave Burgess says an enterprising notion put forward to council recently would see a local landfill converted into a fish processing plant, if the National Carp Control Program (NCCP) is implemented at the end of the year.

If the plan goes ahead Mid Murray council will be among those faced with the clean-up and disposal of what could potentially be millions of dead fish.

"An idea has been to use the Cambrai landfill site as a processing plant for the dead carp to be held and manufactured into fertiliser, thus making effective use of a waste product," Mr Burgess said.

"There is a carp fertiliser business in New South Wales currently converting 2.5 tonnes of dead fish, including bones and scales, into 4000 litres of fertiliser."

Mayor Burgess said the plan could be a cost effective way to make use of a huge and perishable problem.

"There is still no word from the State Government on

what clean-up strategies will be employed should a mass fish kill event take place as a result of the virus, or what funding will be available to help with clean-up costs," he said.

"Council needs to start generating proactive discussion around this looming issue and if we can recoup some clean-up outlay through a business plan, that is good news."

Council's environmental health officer Thomas McKellar said more research would need to be conducted before the plan could move forward, including wastewater requirements and licensing changes.

"Under the Environment Protection Act 1993, an EPA license is required for fish processing and this site is currently only licensed by the EPA for waste or recycling depots," he said.

"Research also needs to be conducted to determine the volume of carp that could be processed at the site and whether this volume would affect the feasibility of this option – along with consideration of all the processing costs that would be involved."

Mr Burgess said the invasive species posed a huge problem, dead or alive.

"The impact of this pest upon Australia's river system, including our famous Murray River, is huge and it's felt environmentally, economically and socially," he said. "Carp lower the water quality, take food away from native fish stocks, block irrigation pipes and infrastructure and affect recreational fishing, impacting tourism."

Council needs to start generating proactive discussion around this looming issue.

Mayor Dave Burgess



Carp control plans progress

FISHING LINES

BY JOSH SMITH AND JAMIE CONDON

WITH most of NSW in mild or severe drought it is no surprise to see our waterways under extreme pressure once again. It is in these times that the lure angler shines. With low water levels and increased water clarity the strike rates increase significantly along with the hook-ups. The lower water levels also reveal the usually submerged secrets that help locate the snags and holes with the naked eye. So, if you are not already out there taking advantage of the positives during this dry time we suggest you dust off the gear and get flicking.

For those who are interested in the progress of the National Carp Control Plan things are still progressing towards a possible 2019 release. Researchers have

been extremely busy gathering large amounts of data to assist the Federal and State government ministers who will decide if the \$15 million plan goes ahead. It is expected that carp make up 80 to 90 per cent of the fish biomass in our Murray Darling Basin river system. This is the issue weighing on everybody's minds on how we are going to deal with the fallout of

the presumed hundreds of thousands of tonnes of dead carp. It certainly is a valid debate and one that is well represented on both sides of the fence.

With Australia's past lessons learnt with introducing biological control measures to deal with pest species, the

National Carp Control Plan has seen unprecedented research in the effect that the release of the Koi Herpes Virus will have on the native

species and the environment. Many would like to see a few more years research on this topic but it is currently on track for a Spring or early Summer release next year. This time of year would see the virus released at its most optimal time based on the water temperatures of 16 degree C to 28 degree C throughout the target areas.

The locations of release are also causing much debate due to the impacts on the local areas, but it is preferred that the release take place downstream as far as practical to assist in the handling of dead carp as the virus theoretically makes its way up stream. Areas of discussion include the lower lakes of the mouth of the Murray river, but this maybe moved to more controlled and smaller waterways to start the release if approved.



21 Jun 2018

The Land

Author: Josh Smith And Jamie Condon • Section: General News

Article Type: News Item • Audience : 33,202 • Page: 71 • Printed size: 402.00cm²

Market: NSW • Country: Australia • ASR: AU\$ 3.446 • words: 424 • Item ID: 971795035

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Page 2 of 2



Jonah Smith of Narrabri with a European Carp from the Namoi River. Doing his bit to help remove these imports from our precious waterways.



20 Jun 2018
River News, Waikerie SA

Author: Erin Williams • Section: General News • Article Type: News Item
Audience : 2,450 • Page: 1 • Printed size: 354.00cm² • Market: SA • Country: Australia
ASR: A11D 493 • words: 597 • Item ID: 971614576

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Page 1 of 2

Practical carp disposal plan considered by local council...

FISH FERTILISE R?

ERIN WILLIAMS

A LOCAL council is looking towards an innovative fish fertiliser project as a proactive way to make use of tonnes of dead carp.

A key element of the Federal Government's \$15 million National Carp Control Program - which is expected to gain approval in December - is releasing the carp herpes virus into Australia's river system to kill off the invasive pest species.

With the implementation of the NCCP approaching and no word yet from State or Federal Government on how the

clean-up of thousands of dead carp will be executed, the Mid Murray Council (MMC) is looking at using a local landfill as a fish-processing plant.

MMC chief executive Russell Peate said some of the research into turning the dead carp into fish fertiliser has already been done.

CONTINUED PAGE 7



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CONTINUED FROM FRONT

“There was a trial studied at Port Lincoln which turned out positive results,” he said.

“Council would have to look into what approvals and licences would be required, and it wouldn’t necessarily run the program.

“Council plans to call for expressions of interest for another business to take charge of the clean-up and fertiliser.”

MMC Mayor Dave Burgess said an enterprising notion put forward to council could see the conversion of the Cambrai landfill site into a fish processing plant.

“An idea has been to use the Cambrai landfill site as a processing plant for the dead carp to be held and manufactured into fertiliser,” he said.

“A carp fertiliser business in NSW is currently converting 2.5 tonnes of the dead fish – including bones and scales – into 4000 litres of fertiliser.”

Mr Peate said if the Cambrai landfill site were to become the location of a fish processing plant, it would be a separate business, facility and treatment process from all other types of waste held at the site.

“My expectation is that the business would liaise with the State Government in terms of obtaining the dead carp and processing it,” he said.

“The cost won’t be to council; MMC will see whether any business wishes to establish it.

“Once council has established the tendering process, it would not be involved in the clean-up process or the fertiliser distribution.

“Council doesn’t want any responsibility for the clean-up, given that it has enough of its own costs to take care of.”

Mr Burgess said the plan could be a cost-effective way to make use of a huge and perishable problem.

“There is still no word from the State or Federal Government on what clean-up strategies will be employed, should a mass fish-kill event take place,” he said.

“Council needs to start generating proactive discussion around this looming issue, and if it can recoup some clean-up outlay through a business plan, that is good news.”

So far, Australian research projects using carp by-products have produced insect and animal feed, organic fertiliser and even biogas from the dead invertebrates.

MMC environmental health officer Thomas McKellar said more research needs to be conducted before the plan can move forward, including wastewater requirements and licensing changes.

“Under the Environment Protection Act 1993, an EPA licence is required for fish processing and this site is currently only licensed by the EPA for waste or recycling depots,” he said.

“Research also needs to be conducted to determine the volume of carp that could be processed at the site and whether this volume would affect the feasibility of this option – along with consideration of all the processing costs that would be involved.”



20 Jun 2018

Leader - Barossa Valley, Angaston SA

Section: General News • Article Type: News Item • Audience : 8,030 • Page: 18

Printed size: 171.00cm • Market: SA • Country: Australia • ASR: AUD 345 • words: 547

Item ID: 971722536

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Mid Murray Council discuss carp disposal

As the implementation of the Federal Government's National Carp Control Programme (NCCP) approaches, Mid Murray Council are looking towards an innovative fish fertiliser project as a proactive way to make use of tonnes of dead carp.

A key element of the \$15million NCCP, which is expected to gain Federal Government approval in December, is releasing the carp herpes virus into Australia's river system to kill off the invasive pest species.

Should the plan go ahead, Mid Murray Council will be one of many across Australia faced with a huge dilemma – how to clean-up and dispose of potentially millions of dead fish.

Mid Murray Mayor, Mr Dave Burgess says an enterprising notion put forward to Council recently would involve the conversion of a local landfill into a fish processing plant.

"An idea has been to use the Cambrai landfill site as a processing plant for the dead carp to be held and manufactured into fertiliser, thus making effective use of a waste product," he says.

"There is a carp fertiliser business in New South Wales currently converting 2.5 tonnes of the dead fish, including bones and scales, into 4,000 litres of fertiliser."

Mayor Burgess says the plan could be a cost effective way to make use of a huge and perishable problem.

"There is still no word from the State or Federal Government on what clean-up strategies will be employed should a mass fish kill event take place as a result of the virus, or what funding will be available to help with clean-up costs," he says.

"Council needs to start generating proactive discussion around this looming issue and if we can recoup some clean-up outlay through a business plan, that is good news."

So far, Australian research projects using carp by-products have produced insect and animal feed, organic fertiliser and even biogas from the dead invertebrates.

Council's Environmental Health Officer, Mr Thomas McKellar says there would need to be more research conducted before the plan could move forward, including wastewater requirements and licensing changes.

"Under the Environment Protection Act 1993, an EPA licence is required for fish processing and this site is currently only licensed by the EPA for waste or recycling depots," he says.

"Research also needs to be conducted to determine the volume of carp that could be processed at the site and whether this volume would affect the feasibility of this option – along with consideration of all the processing costs that would be involved."

Mayor Burgess says the invasive species poses a huge problem, dead or alive.

"The impact of this pest upon Australia's river system, including our famous Murray River, is huge and it's felt environmentally, economically and socially," he says.

"Carp lower the water quality, take food away from native fish stocks, block irrigation pipes and infrastructure and affect recreational fishing, impacting tourism outcomes."

Whatever avenues Council decides to pursue, Mayor Burgess says the plan needs to be flexible as the NCCP progresses to timelines and action.

"Should the NCCP decide to announce across-the-board clean-up strategies, we have to be able to accommodate these changes and moves."

"The NCCP may be a fluid plan now but once it is approved at a Federal level, action may begin quickly and Council needs to get some proactive plans and strategies in place."

National Carp Control Plan – Weekly Media Report

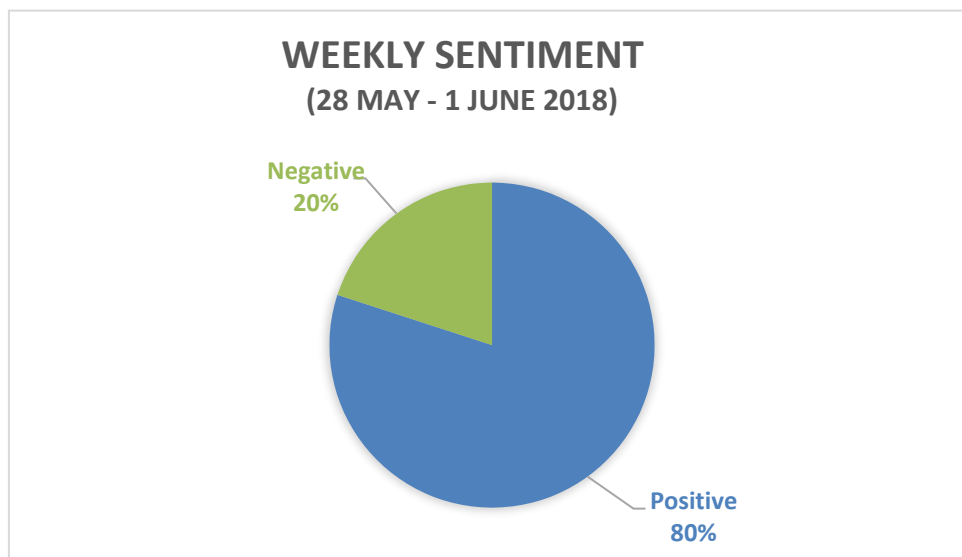
28 May – 1 June 2018

Total NCCP articles published
this week: 5

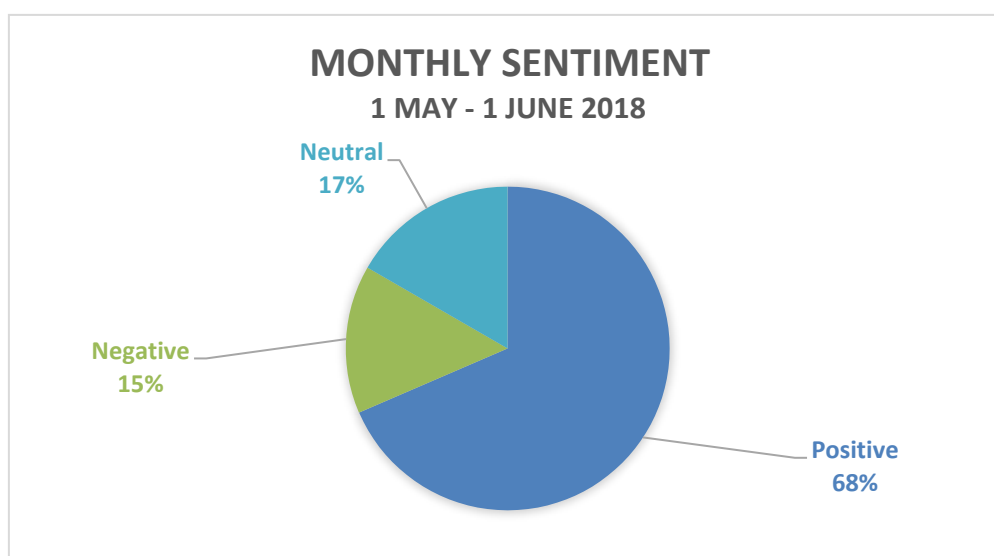
Total NCCP articles published
this month: 55

The below pie chart illustrates the number of articles and the general 'sentiment' for the National Carp Control Plan, for the week and for the month. For more on how to read the chart, see below.

Number of Articles and Sentiment in media – this week



Number of Articles and Sentiment in the media – month (May)



Number of Articles and Sentiment in media – this week

- In the period 28 May – 1 June 2018, the National Carp Control Plan received coverage in 3 print articles, one online article and one radio piece.
- ❓ Four items were positive in sentiment, whilst one item was negative in sentiment.
- ❓ Four of these articles related to the recent NCCP Forbes consultation and consequently many of these were located within NSW.
- ❓ Copies of print articles can be seen below.

Number of Articles and Sentiment in media – month

- ❓ This month (May), NCCP has received coverage in 55 articles.

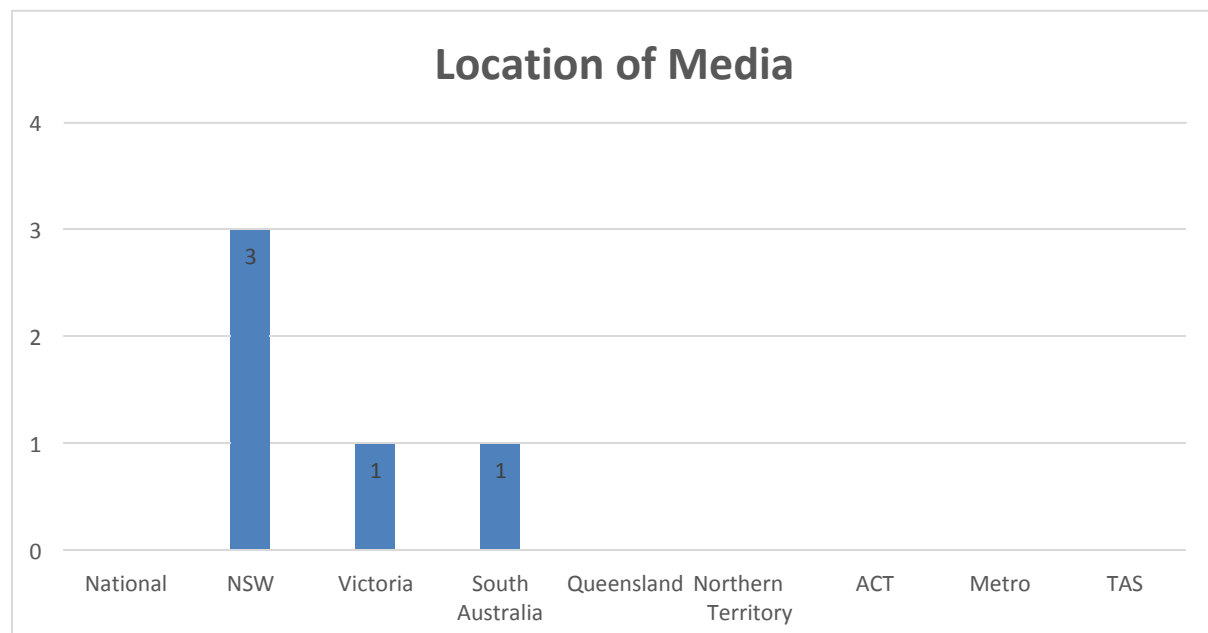
How to read the chart:

The pie chart represents the Neutral, Positive and Negative sentiment of media monitored for the week.

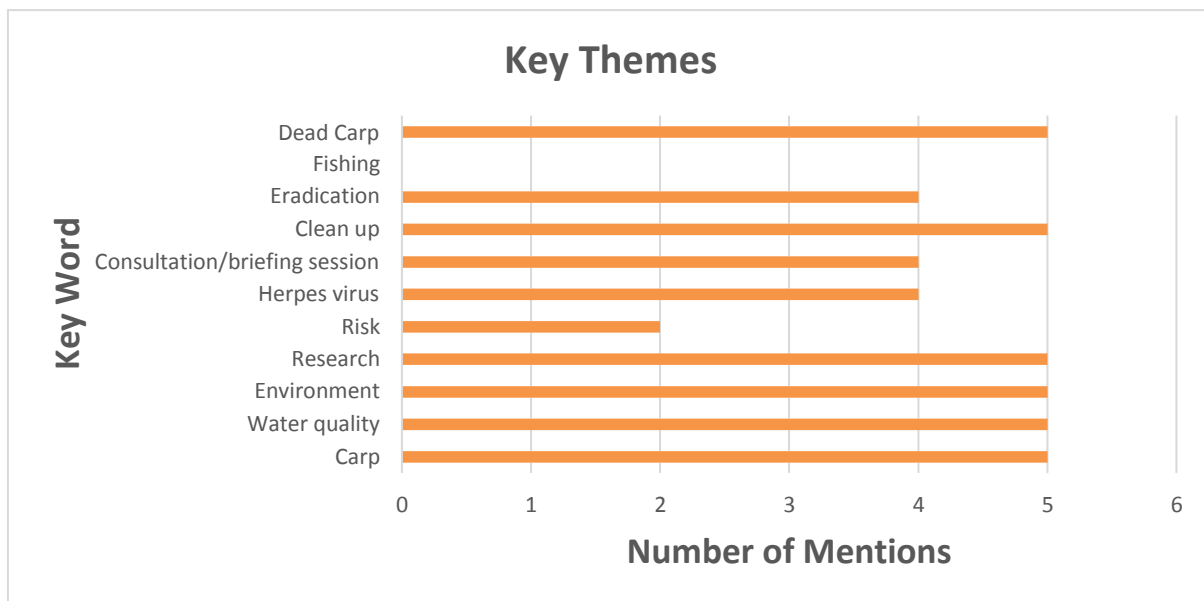
Sentiment is based on a simple points system, where 1 point is given to each article which has been deemed positive, negative or neutral.

Location of Media - week

- The below chart identifies what state the articles appear – they are broken down in to state (individual), national or metro locations.



Key themes/messages in media – this week



- ❓ In the various articles monitored this week the key themes were carp, environment, research, dead carp, clean up and water quality. Although the theme may be mentioned more than once in the article, this is only captured once to show what the key theme in the article was. An article may have more than one key theme.



30 May 2018

Weekly Times, Melbourne

Author: Natalie Kotsios • Section: General News • Article Type: News Item

Audience: 50,808 • Page: 6 • Printed size: 192.00cm² • Market: VIC • Country: Australia

ASR: All Rights Reserved • File: 119 • Item ID: 961310812

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VIRUS FUNDING

Carp plan on brink

By NATALIE KOTSIOS

PLANS to unleash a virus to eradicate carp from Australia's rivers have hit a snag, with a feared shortfall in the National Carp Control Plan's research budget.

It comes as it was revealed the Federal Government has promised almost \$4 million to help implement the controversial koi herpes virus — despite there being no final decision on whether the virus should, or will, be used.

Sources have told *The Weekly Times* that the money is needed to finish vital research — and that the entire project is at risk without it.

Sources say the shortfall means any proposal to deliver the carp virus will be “underdone”, with gaps in the research — leading some to fear the virus's implementation will have to be delayed, or outright rejected.

The \$15 million carp control project has until the end of this year to develop a plan for the controlled release of the carp virus in a bid to wipe out the pest fish.

The Government will make the final decision on whether it goes ahead, based on the proposal.

Department of Agriculture officials told Senate estimates last week that \$4.24 million of the \$15 million budget has gone to the Department of Industry, Innovation and Science — including \$3.7 million to “help with implementation should the plan go ahead”.

It's understood those developing the plan discussed the funding allocation in a meeting in Adelaide last week, with many fearing much-needed projects — from scientific research to community consultations — cannot be completed without the full \$15 million.

One source questioned why money should be allocated to implementation when a decision was yet to be made on the virus.

“Having a robust plan and making sure the risks are understood, and making sure there is a complete scientific basis, is essential,” one source said.

Victorian Agriculture Minister Jaala Pulford questioned why \$4 million “appears to have been redirected”.

“I am worried about the proposed funding cuts to scientific research that's needed to underpin the plan,” Ms Pulford said.

However, Agriculture Minister David Littleproud said there had been no change to the plan's funding amount or allocation.

The proposal to use the carp virus as biocontrol is controversial, with international academics raising concern the virus could mutate, or lead to ecosystem crashes due to huge volumes of dead fish in the rivers.

The plan's co-ordinator Matt Barwick told Senate estimates it was a “fairly new dimension of carp control — no one has ever done this before in the world”.



□ Major issues: Apart from outcompeting our native species for food and resources, is that they affect water quality by stirring up ~~sch~~Hi

Landcarers

There was a good turnout at the National Carp Control Plan consultation evening at the Forbes Inn on Wednesday evening. The session in Forbes was the NCCP's 183rd session.

With over 30 people attending and representation from fishers, landholders, government, environmental and community, there was a good deal of questions regarding the Plan, timeframe, process and generally, a positive feeling in the room, with support for action to address the problem.

With the overarching goal of restoring native biodiversity through the Plan, the evening gave an overview of the carp problem as it exists in Australia and a few comparisons with similar situations globally.

The Dominic Nowlan from the Central West Local Land Services gave an overview of some of the work that has been undertaken on riparian areas along the Lachlan River, including habitat mapping between Cottons Weir and Booberoi Weir and looked at key management actions to address threatening processes, including stock management through protective fencing and alternative watering points.

They also looked at weed control of pest plant species such as blackberry, African boxthorn, sweet briar, willows and Osage Orange.

Brett Smith from DPI Fisheries gave an overview of the importance of restoring fish passage and gave some examples of work completed to improve passage. Brett also spoke about the importance of not looking at one single 'silver bullet' to fix the carp problem. It needs to be a holistic approach.

Jamie Allnutt, Project Manager for the NCCP, reiterated these thoughts, explaining that the Cyprinid herpesvirus 3 (the carp virus) is not a one hit wonder.

The Plan is being prepared to explore the use of the virus to control carp. This is a \$15 million program being delivered through Fisheries Research and Development Corporation (FRDC) on behalf of the Australian Government. According to the NCCP guides, the program is, in essence, risk assessment, research, planning and consultation to identify a smart, safe, effective and integrated suite of measures to control carp impacts, with a key focus on the possible use of biocontrol.

A few interesting facts about the virus: the optimal temperature is 18 – 28 degrees to spread, impact and kill a carp; once a carp receives the virus, regardless of the temperature, it always remains viable and will wait for the perfect conditions to impact the fish; close contact between fish is required to spread the virus.

With any eradication program, there are always going to be challenges, and it may be a case of short term pain for long term gain in terms of release and impact.

I think we all would agree that something needs to be done and this is a positive step forward to address the problem. For more information please contact Central West Lachlan Landcare on 02 6862 4914. Visit centralwestlachlanlandcare.org. Until next week, happy Landcaring!

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- [WEET](#)
-
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MORE LOCAL ARTICLES



01 Jun 2018
Champion Post, Parkes, NSW

Author: Marg Applebee • Section: General News • Article Type: News Item
Audience: 1,383 • Page: 19 • Printed size: 352.00cm² • Market: NSW
Country: Australia • ACP ID: 1,404 • Number: 100 • Item ID: 000101511

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Needing a holistic plan

LOOKING AT LANDCARE

BY MARG APPLEBEE

HI LANDCARERS

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A few interesting facts

about the virus: the optimal temperature is 18 – 28 degrees to spread, impact and kill a carp; once a carp receives the virus, regardless of the temperature, it always remains viable and will wait for the perfect conditions to impact the fish; close contact

between fish is required to spread the virus.

With any eradication program, there are always going to be challenges, and it may be a case of short term pain for long term gain in terms of release and impact.

I think we all would agree that something needs to be done and this is a positive step forward to address the problem. For more information please contact Central West Lachlan Landcare on 02 6862 4914. Visit centralwestlachlanlandcare.org. Until next week, happy Landcaring!



01 Jun 2018
Champion Post, Parkes, NSW

Author: Marg Applebee • Section: General News • Article Type: News Item
Audience: 1,383 • Page: 19 • Printed size: 352.00cm² • Market: NSW
Country: Australia • ACP: AUD 1,404 • number: 400 • Item ID: 000404544

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MAJOR ISSUES: Apart from outcompeting our native species for food and resources, is that they affect water quality by stirring up sediment.



01 Jun 2018
Forbes Advocate, Forbes NSW

Author: Marg Applebee • Section: General News • Article Type: News Item
Audience: 1282 • Page: 10 • Printed size: 391.00cm² • Market: NSW
Country: Australia • ID: 1001 • Number: 200 • Name: ID: 000100007

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Page 1 of 2

Let's talk carp control

LOOKING AT LANDCARE

BY MARG APPLEBEE

HI LANDCARERS,

There was a good turnout at the National Carp Control Plan consultation evening at the Forbes Inn on Wednesday evening.

The session in Forbes was the NCCP's 183rd session with representation from fishers, landholders, government, environmental and community.

There was a good deal of questions regarding the Plan. With the overarching goal of restoring native biodiversity through the Plan, the evening gave an overview of the carp problem as it exists in Australia and a few comparisons with similar situations globally.

The Dominic Nowlan from the Central West Local Land Services gave an overview of some of the work that has been undertaken on riparian areas along the Lachlan River, including habitat mapping between Cottons Weir and Booberoi Weir and

looked at key management actions to address threatening processes, including stock management through protective fencing and alternative watering points.

They also looked at weed control of pest plant species such as blackberry, African boxthorn, sweet briar, willows and Osage Orange.

Brett Smith from DPI Fisheries gave an overview of the importance of restoring fish passage and gave some examples of work completed to improve passage.

Brett also spoke about the importance of not looking at one single 'silver bullet' to fix the carp problem.

It needs to be a holistic approach.

Jamie Allnutt, Project Manager for the NCCP, reiterated these thoughts, explaining that the Cyprinid herpesvirus 3 (the carp virus) is not a one hit wonder.

A few interesting facts about the virus: the optimal temperature is 18 – 28 degrees to spread, impact and kill a carp; once a carp

receives the virus, regardless of the temperature, it always remains viable and will wait for the perfect conditions to impact the fish; close contact between fish is required to spread the virus.

With any eradication program, there are always going to be challenges, and it may be a case of short term pain for long term gain in terms of release and impact.

Visit centralwestlchlandcare.org for more of this week's news. Until next week, happy Landcaring!



01 Jun 2018
Forbes Advocate, Forbes NSW

Author: Marg Applebee • Section: General News • Article Type: News Item
Audience: 1,282 • Page: 10 • Printed size: 391.00cm² • Market: NSW
Country: Australia • ID: 1,001 • Number: 000 • Item ID: 000100007

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People with an interest in fishing and river health gathered at the Forbes Inn on Wednesday night to hear about carp control plans.

National Carp Control Plan – Weekly Media Report

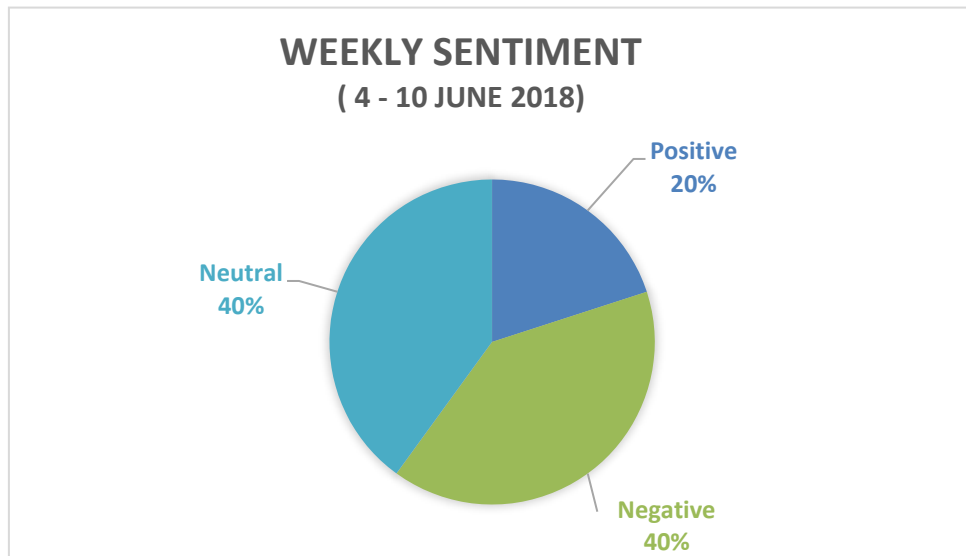
4 – 10 June 2018

Total NCCP articles published
this week: 5

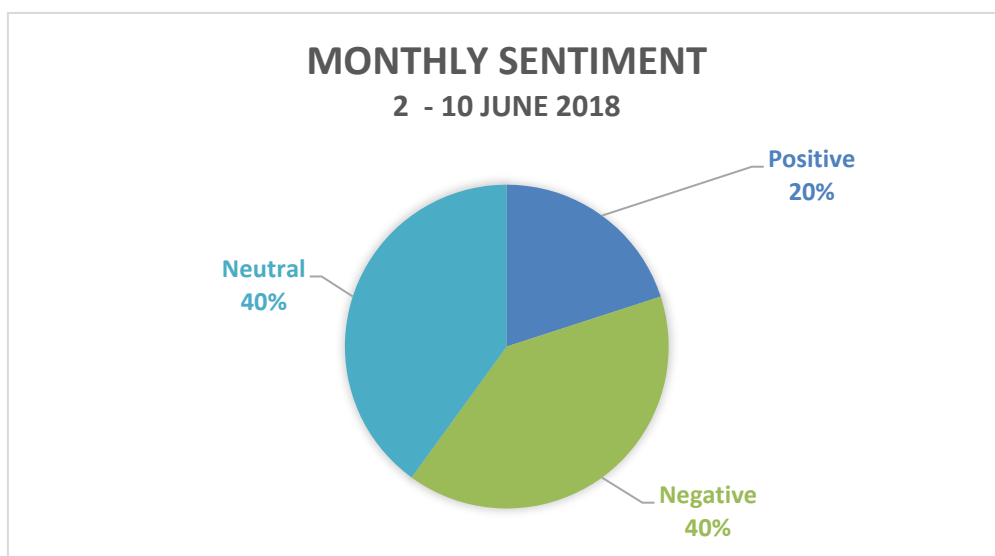
Total NCCP articles published
this month: 5

The below pie chart illustrates the number of articles and the general 'sentiment' for the National Carp Control Plan, for the week and for the month. For more on how to read the chart, see below.

Number of Articles and Sentiment in media – this week



Number of Articles and Sentiment in the media – month (June)



Number of Articles and Sentiment in media – this week

- In the period 4 – 10 June 2018, the National Carp Control Plan received coverage in one print articles, one online article and three radio pieces.
- ❓ One item was positive in sentiment, whilst two items were negative in sentiment and two were neutral in sentiment.
- ❓ The three radio pieces were in relation to Wild Caught Fisheries removing 30 tonnes of carp from the Gippsland region on behalf of Parks Victoria and all featured on ABC radio.
- ❓ The positive online piece was in relation to the recent Janet Howieson media release and featured on fishing website Bush n Beach Fishing.
- ❓ Copies of print and online articles can be seen below.

Number of Articles and Sentiment in media – month

- ❓ This month (June), NCCP has received coverage in 5 articles.

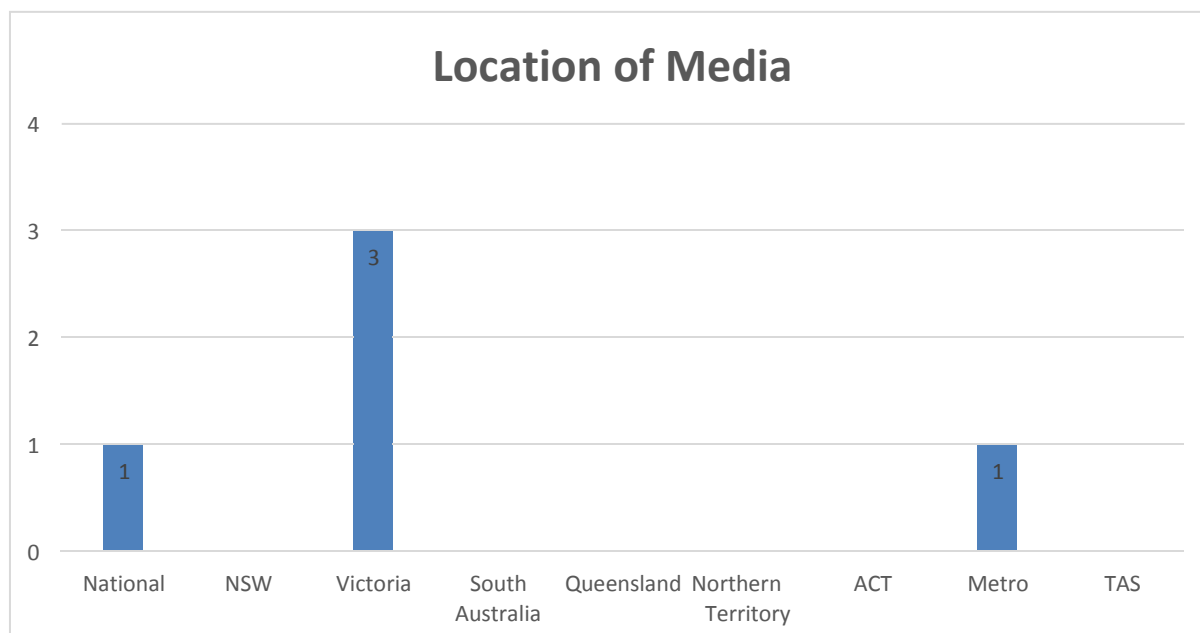
How to read the chart:

The pie chart represents the Neutral, Positive and Negative sentiment of media monitored for the week.

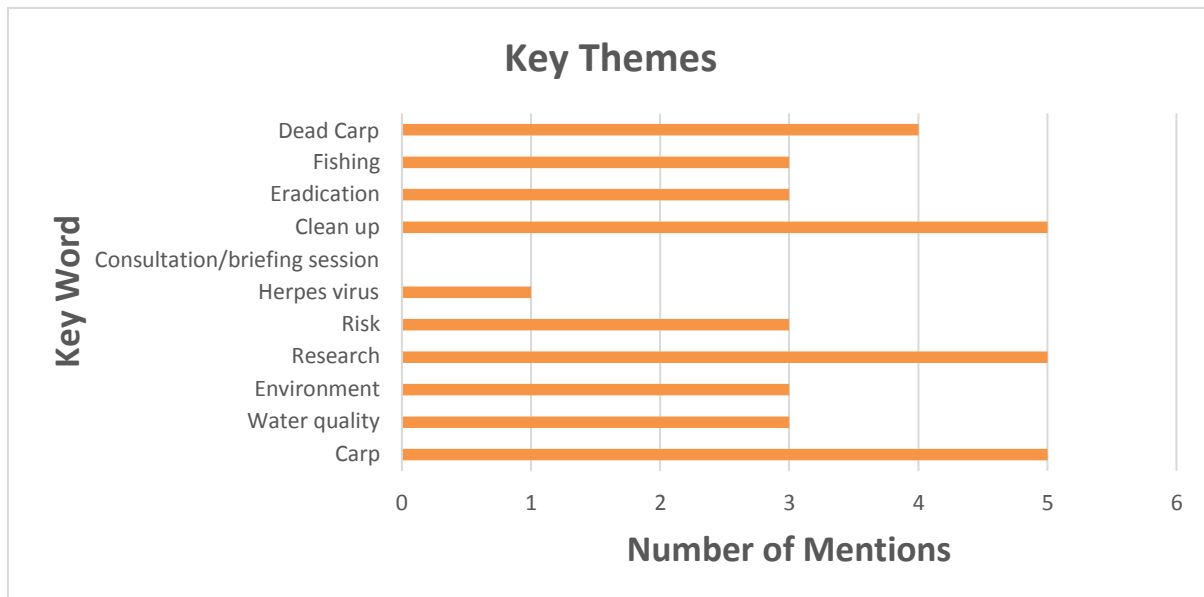
Sentiment is based on a simple points system, where 1 point is given to each article which has been deemed positive, negative or neutral.

Location of Media - week

- The below chart identifies what state the articles appear – they are broken down in to state (individual), national or metro locations.



Key themes/messages in media – this week



- 2 In the various articles monitored this week the key themes were carp, research, dead carp, and clean up. Although the theme may be mentioned more than once in the article, this is only captured once to show what the key theme in the article was. An article may have more than one key theme.



06 Jun 2018
Weekly Times, Melbourne

Author: Natalie Kotsios • Section: General News • Article Type: News Item
Audience : 50,808 • Page: 4 • Printed size: 195.00cm² • Market: VIC • Country: Australia
ASR: A11D 2 231 • words: 407 • Item ID: 964858883

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Page 1 of 1

VIRUS DELAY

Carp plan's new snags

By NATALIE KOTSIOS

USE of a herpes virus to kill off carp from Australia's rivers may not be begin until September next year — if the National Carp Control Plan gets approval at all.

And more than \$500,000 is being used to cover costs of just two staff members from the federal Environment Department working on the controversial plan.

It comes after *The Weekly Times* reported last week that those developing a way to safely unleash the koi herpes virus are running out of cash to finish vital research.

The \$15 million carp control project has until the end of this year to develop a plan for the controlled release of the virus in a bid to wipe out the fish.

The Government will make the final decision on whether it goes ahead, based on the proposal.

However, the virus won't be able to be deployed without approval from the Australian Pesticides and Veterinary Medicines Authority, which needs to conduct a full assessment of the virus — including

public consultation — before it can be used.

An APVMA spokesman said the assessment began in November last year and was scheduled to take 16 to 21 months to complete.

It means the virus could potentially get APVMA approval in February at the earliest, or as late as September next year.

Meanwhile, the Department of Environment and Energy confirmed it was allocated \$557,000 to cover the costs of two staff working on the plan for 2½ years, until December this year.

The department's involvement is limited to working with the Department of Agriculture and Water Resources on a strategic assessment of the plan under the Environment Protection and Biodiversity Conservation Act.

A department spokesman said two senior EPBC officers were working on this. An agreement between the two departments was signed in January and the terms of reference only agreed to last month.

Another \$3.7 million of the \$15 million has been put aside to help with implementing the

plan if it goes ahead. Those involved in the plan say this cash is needed to finish research.

It is feared an "underdone" plan could be delayed or rejected outright.

A Department of Agriculture spokesman said discussions had been held with the Fisheries Research and Development Corporation about additional funding and time.

"The department is waiting on advice from the FRDC on what it can deliver under the agreement within the current funding allocation and work plan," a spokesman said.

How do you use 10 tonnes of dead carp?

CURTIN University researchers are investigating options for the sustainable use of the dead carp biomass that could result from the potential release of syprinid herpesvirus 3 (carp virus), under the National Carp Control Plan.

The research project 'Assessment of options for utilisation of virus-infected carp', involves laboratory-based processing trials as well as commercial-scale trials of processes that produce usable carp-based products including fertilisers, compost, fishmeal and aquaculture feed ingredients.

Lead researcher Dr Janet Howieson from the School of Molecular and Life Sciences at Curtin University, said the objective is to provide the NCCP with a range of efficient, effective and appropriate uses for carp biomass, and that all methods are being carefully explored. "The research is designed to deliver detailed cost-benefit analyses of the

various carp utilisation processes being investigated, including attention to harvest strategies, transport logistics and fish quality at various locations," Dr Howieson said. "Identifying local solutions and a community-based approach to using carp biomass is a key component of the project."

Researchers recently completed a commercial-scale trial in partnership with Goulburn Valley Water in



Carp ready for processing into fish hydrolysate at SAMPI in Port Lincoln.

Victoria to separate two tonnes of dead carp into solids for local composting trials and liquids for further

laboratory-based digestion trials looking at biogas production. Another 300kg of whole carp was sent to a nearby worm farm. This followed a similar trial in Port Lincoln, South Australia, using enzyme hydrolysis to break down 10 tonnes of carp biomass into smaller peptides and amino acids, which can be used for organic fertiliser or as an aquaculture or animal feed ingredient. Outcomes for the remaining bones and scales are also being investigated.

“We are considering the feasibility of using carp waste as insect feed, specifically for the black soldier fly, which produces larvae that can be used as high-quality aquaculture feed,” Dr Howieson said. “Products from the insect larvae feeding trials will then be tested in fish-feeding trials to evaluate market opportunity.”

A large-scale composting trial is also being undertaken with carp biomass, with different composting methods and substrates being tested and monitoring and evaluation being conducted throughout the trial. NCCP national co-ordinator Matt Barwick said identifying economically viable and productive uses for carp is an essential part of the NCCP’s clean-up strategy.

“We know there are large volumes of carp in our waterways, so working out what to do with the carp biomass if biocontrol proceeds provide us with a measured approach to help inform NCCP recommendations and the subsequent decision-making process,” Mr Barwick said. “One of the most frequent comments received at our community consultation sessions relate to how we can best use potential carp biomass. We are encouraging the public to engage with the NCCP to share their thoughts

and opinions in relation to the impact of carp, the proposed methods for reducing carp numbers and possible options for carp biomass use. It is a collaborative plan and one that we're keen to ensure reflects the thoughts and opinions of all stakeholders."

Other NCCP research projects under way include completion of trials testing the susceptibility of non-target species to the carp virus, strategies for cleaning up carp if the carp virus is released and biomass estimations to determine how many carp inhabit Australia's aquatic environments. In addition to research, a comprehensive stakeholder engagement plan is being undertaken to consult with and seek feedback from the general public and special-interest groups. Results from this consultation will be made available to the public via the NCCP website.

About the National Carp Control Plan

The NCCP is being prepared to explore the release of the carp virus cyprinid herpesvirus-3. The Fisheries Research and Development Corporation is leading the \$15 million planning process on behalf of the Australian Government. At the end of 2018, the FRDC will provide the completed NCCP to the Australian Government, which will then decide whether to release the virus or not.

For more information, visit carp.gov.au

National Carp Control Plan – Weekly Media Report

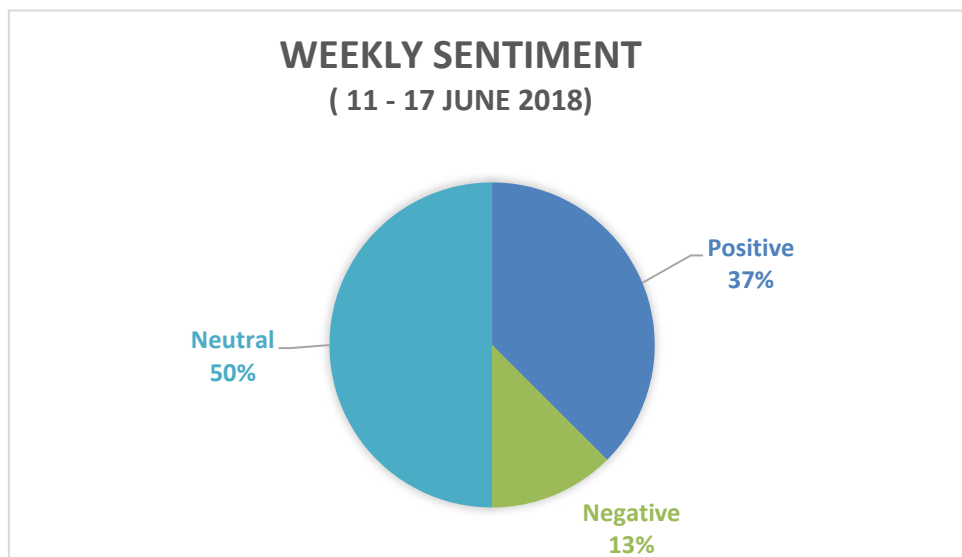
11 – 17 June 2018

Total NCCP articles published
this week: 8

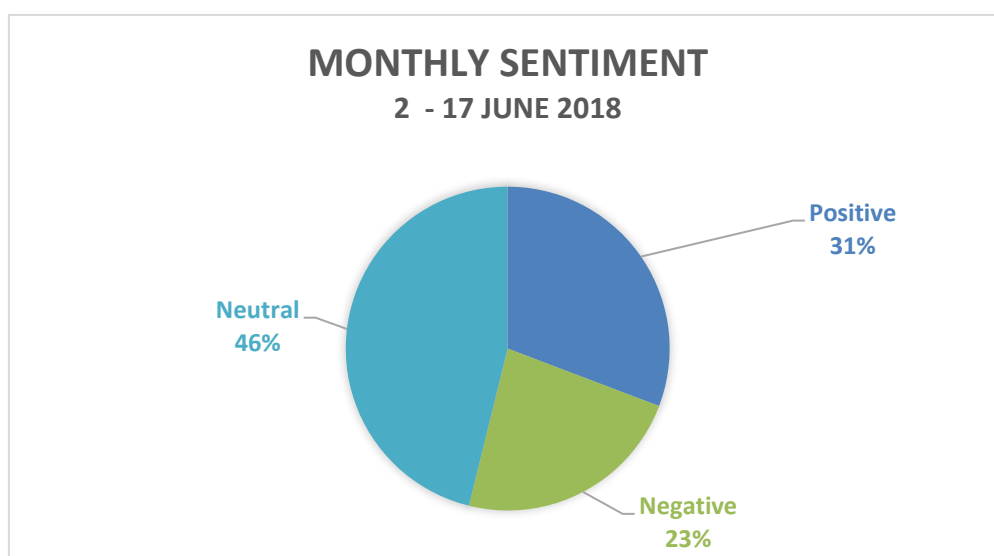
Total NCCP articles published
this month: 13

The below pie chart illustrates the number of articles and the general 'sentiment' for the National Carp Control Plan, for the week and for the month. For more on how to read the chart, see below.

Number of Articles and Sentiment in media – this week



Number of Articles and Sentiment in the media – month (June)



Number of Articles and Sentiment in media – this week

- In the period 11 – 17 June 2018, the National Carp Control Plan received coverage in one print article and seven radio pieces.
- ❓ Three items were positive in sentiment, whilst one item was negative in sentiment and four items were neutral in sentiment.
- The aired radio pieces were in relation to an interview conducted with Matt Barwick or Mid Murray Council's research into potentially using a land fill site to create fertiliser as part of their clean-up efforts. All radio pieces excluding one featured on ABC metro and regional radio.
- ❓ The only print article was negative in sentiment and was a letter to the editor of Murray Valley Standard, a South Australian newspaper. A copy can be found below.

Number of Articles and Sentiment in media – month

- ❓ This month (June), NCCP has received coverage in 13 articles.

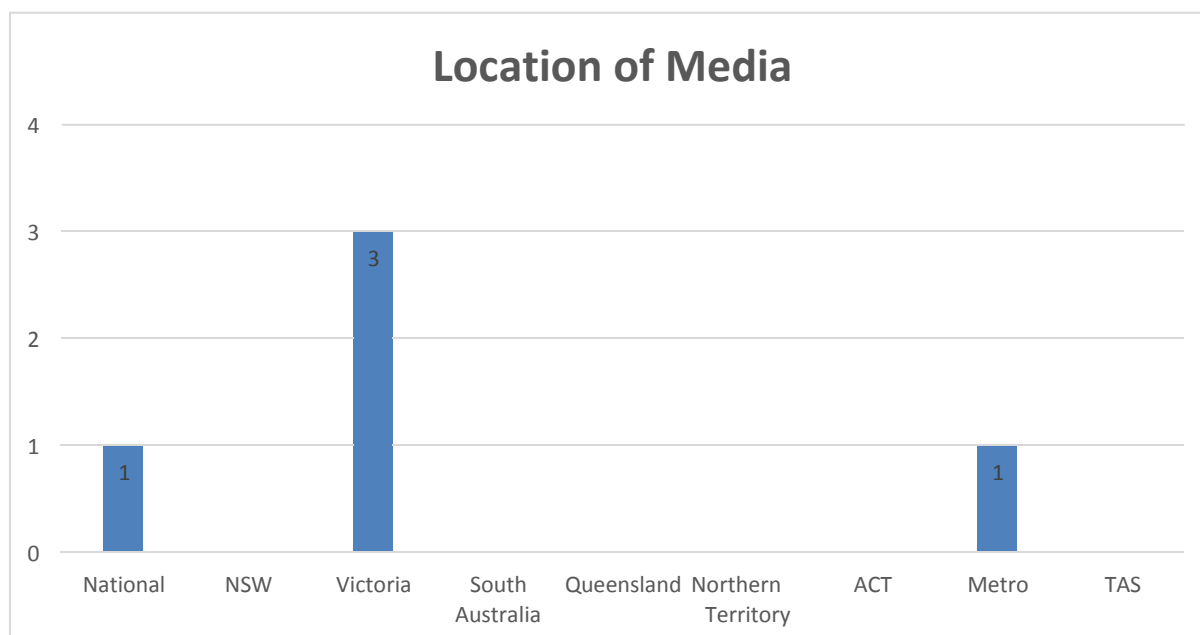
How to read the chart:

The pie chart represents the Neutral, Positive and Negative sentiment of media monitored for the week.

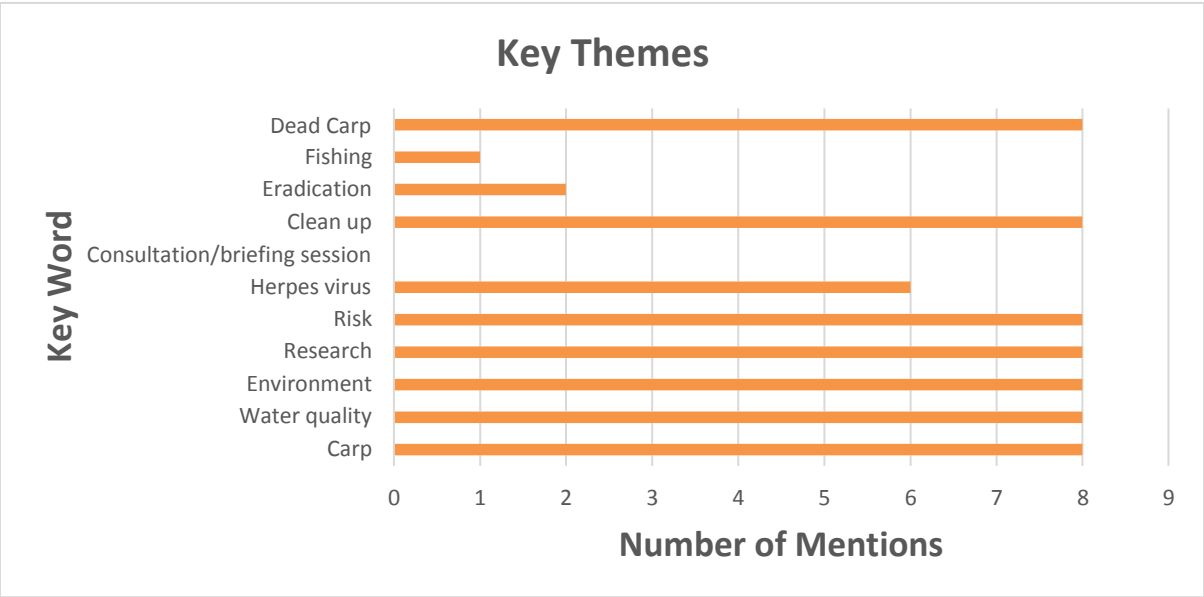
Sentiment is based on a simple points system, where 1 point is given to each article which has been deemed positive, negative or neutral.

Location of Media - week

- The below chart identifies what state the articles appear – they are broken down in to state (individual), national or metro locations.



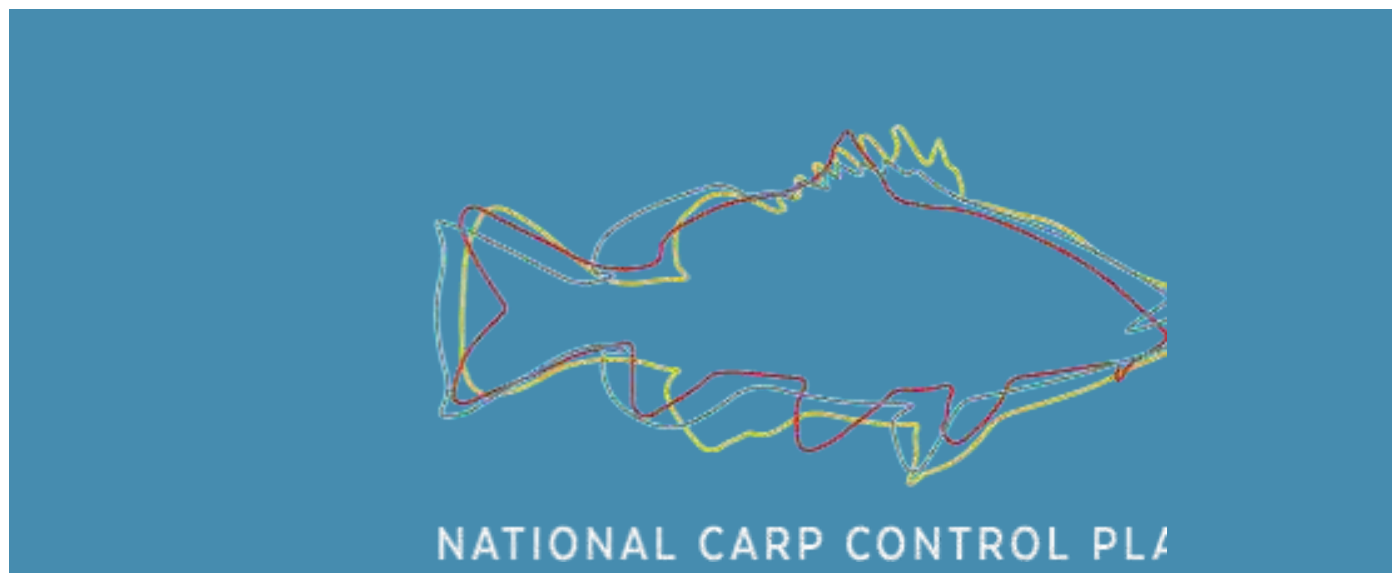
Key themes/messages in media – this week



2 In the various articles monitored this week the key themes were carp, research, risk, water quality, environment, dead carp, and clean up. Although the theme may be mentioned more than once in the article, this is only captured once to show what the key theme in the article was. An article may have more than one key theme.

Mikala Dickie

From: mikala.dickie@mail187-199.suw11.mandrillapp.com on behalf of
mikala.dickie@seftons.com.au
Sent: Monday, 16 July 2018 2:00 PM
To: Mikala Dickie
Subject: MailChimp Template Test - "NCCP E-newsletter template"



Issue 1, 2018



Dear *|FNAME|*,

Welcome to the latest NCCP news. From Beaudesert to Bendigo and Sydney to Swan Hill, our team continues to meet with local communities and stakeholders to inform the National Carp Control Plan (NCCP). Some of the key issues raised at these meetings to date have included virus spread, impact on water quality and logistics of clean up, with more than 80 sessions held and more to come.

A detailed report on the feedback shared at the meetings will be made public next month.

In this issue:

- Find out more about one of our most recent workshops, in Logan, Queensland
- Read NCCP's response to an Opinion Piece published in the Sydney Morning Herald.
- How do you use ten tonnes of dead carp? Find out here!
- Did you know? Test your carp knowledge.

We are committed to engaging and consulting with the public as widely and openly as possible. To ensure that everyone is given the opportunity to share their thoughts and opinions with the NCCP, we have launched yoursay.carp.gov.au – a dedicated site where visitors can learn more about the work of the NCCP and also comment and ask questions. You can also email us at carp@frdc.com.au.

Your input means that government recommendations can take into consideration the attitudes and opinions of all interested stakeholders.

Talking ‘carp’ in Queensland’s Logan-Albert Catchment

The NCCP team met recently with local waterway experts in Queensland’s Logan-Albert Catchment to share science and knowledge that will help inform consideration of whether the carp virus should be released as part of a strategy to reduce carp impacts in Australia.

From mapping local carp hotspots to understanding the Catchment’s hydrology and water scheme, the workshop findings will be used to inform regional planning, and develop release and clean-up strategies at a Catchment level - should the carpvirus be released.

The Logan-Albert region was selected as one of a number of case study areas for the NCCP which together cover a range of geographic areas and habitat types to better understand on-ground considerations associated with possible release of the carp virus.



[Click here to read more >>](#)

Carp are the cane toads - NCCP responds to the Sydney Morning Herald

Earlier this month, the Sydney Morning Herald published an [opinion piece by Professor Simon Chapman](#), raising concerns around the safety and implications of using biocontrol, or the carp virus, as a solution to the carp problem. Our National Coordinator, Matt Barwick provided a response to the article, in order to correct and clarify a number of claims made by the author:

Like cane toads, carp are an introduced species that have flourished at the expense of the Australian environment and its native wildlife.

Their scourge is recognised across the country. Following years of concern amongst the community, the \$15 million National Carp Control Plan (NCCP) was established, tasked by the Australian Government to find a solution.

The NCCP is made up of some of Australia's most recognised universities, institutions and agencies. There are currently 13 research projects underway, which will inform the final recommendations to the Australian Government later this year.

We are investigating a range of solutions, one of which is biocontrol (also known as the carp virus). However, any solution will likely include a multi-pronged approach because there is no silver bullet.

[To view the original SMH piece & NCCP's full response, please click here >>](#)

How do you use ten tonnes of dead carp?

Curtin University researchers are investigating options for the sustainable use of the carp biomass that could result from the potential release of Cyprinid herpesvirus.

The research project, Assessment of options for utilisation of virus-infected carp, involves laboratory-based processing trials, as well as commercial-scale trials of processes that produce usable carp-based products including fertilisers, compost, fishmeal and aquaculture feed ingredients.

Researchers recently completed a commercial-scale trial in partnership with Goulburn Valley Water in Victoria to separate two tonnes of dead carp into solids for local composting trials and liquids for further laboratory based digestion trials looking at biogas production. Another 300kg of whole carp was sent to a nearby worm farm.



This followed a similar trial in Port Lincoln, South Australia using enzyme hydrolysis to break down 10 tonnes of carp biomass into smaller peptides and amino acids, which can be used for organic fertiliser or as an aquaculture or animal feed ingredient. Outcomes for the remaining bones and scales are also being investigated.

We know there are large volumes of carp in our waterways, so working out what to do with the carp biomass if biocontrol proceeds provides us with a measured approach to help inform NCCP recommendations and the subsequent decision-making process.

Image: Carp ready for processing into fish hydrolysate at SAMPI in Port Lincoln, South Australia. Photo courtesy of SAMPI.

[Read more about NCCP's research projects here >>](#)

Did you know?



- Carp were first introduced in the 1800s but populations remained low until the 1960s, when they were introduced into a reservoir at Morwell, Victoria. Rapid spread of these 'Boolarra Strain' carp within Victoria followed, and by 1962 a Victorian state government inquiry had determined that carp should be eradicated.
- Carp spawn earlier than many Australian native species, which means that their juveniles have access to food and other resources before many native fish species.
- Carp can tolerate a wide variety of environmental conditions, have a broad diet, grow rapidly, mature early, can produce large numbers of eggs, are strong swimmers, good jumpers, and do well in ecosystems that are modified by humans.
- Carp thrive in rivers that are already degraded, and tend to intensify the impacts of other environmental pressures.

Did you see?

The proposal to reduce carp numbers in Australia's waterways was the subject of a story on ABC TV's Landline Program on 13 May 2018.

The program spoke with range of individuals and stakeholder groups, some of whom are concerned that the virus is the wrong approach, while others believe it will deliver positive outcomes for our environment. Landline also interviewed South Australia's Glen and Tracy Hill who explained that carp is a great eating fish and cooked up some delicious looking carp bites on the program.



[View the program by clicking here >>](#)

Carp control in North America


North America is watching Australia with interest as it considers the possible use of the carp virus to control common carp in Minnesota. Researchers at Minnesota Aquatic Invasive Species Research Centre discovered KHV is present in Lake Elysian, Minnesota and responsible for thousands of dead common

carp in the Lake last month.


While researchers acknowledge there is much work and risk assessment to be done, the unexpected fish kill confirmed the virus was an effective biocontrol tool that was also species-specific.

[For more information >>>](#)

Have your say...



NATIONAL CARP CONTROL PLAN
RESTORING NATIVE BIODIVERSITY

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NATIONAL CARP CONTROL PLAN

RESTORING NATIVE BIODIVERSITY



Carp need to be controlled in Australia – we're working on how.

Your say carp

This is a site dedicated to sharing the latest information about the National Carp Control Plan (NCCP) with key project stakeholders and the community.

The NCCP has been established to explore ways to improve the quality of Australia's waterways, with one being the possible release of the carp virus Cyprinid herpesvirus 3 (CyHV-3, hereafter 'the carp virus'), through a \$15 million Fisheries Research and Development Corporation (FRDC) planning process, on behalf of the Australian Government.

Please engage with us by reviewing information, reading the latest news, providing feedback. We encourage you to check back regularly and ask questions.



Register to have your say

FAQs

Can't we just eat them all?

Will the virus affect humans?

What work is the NCCP undertaking?

What risk do dead carp pose to water quality - in particular dissolved oxygen and blue-green algae?

When and where might the virus be released?

Key information

The NCCP has launched yoursay.carp.gov.au, a site dedicated to sharing the latest news and research. We encourage you to register and share your thoughts on some of our research projects.

If you were unable to attend one of the NCCP's community events or have any questions and concerns regarding the plan, we want to hear from you. Help us understand what's important about your local waterways. Simply email us at carp@frdc.com.au.

Visit: <https://yoursay.carp.gov.au/>

Email: carp@frdc.com.au

Call: 1800 CARP PLAN (1800 2277 7526)



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You can [update your preferences](#) or [unsubscribe from this list](#).

Mikala Dickie

From: Kerin Heatley
Sent: Thursday, 14 June 2018 11:00 AM
To: e.bradbury@mda.asn.au
Subject: Fw: Clearer Water videos & looping

Hi Emma,

Please find below links to the approved Clearer Waters vision for the ALGA Conference.

Tom's included a link to a simple "how-to" to play the films on loop, hopefully this is helpful.

Pam is organising brochures to be sent to the venue - she has the preferred label with all the necessary info so it should be at the stand when you arrive.

Thanks
Kerin

From: Tom Rayner <tom.rayner@frdc.com.au>
Date: Wednesday, 13 June 2018 at 7:35 pm
To: Matt Barwick <matt.barwick@frdc.com.au>
Subject: Clearer Water videos & looping

Hi Matt,

The fully-approved episodes can be downloaded from the Vimeo account, or via these links, using the password carpinator3

<https://vimeo.com/267734660>

<https://vimeo.com/267659744>

<https://vimeo.com/267652823>

<https://vimeo.com/267629329>

<https://vimeo.com/267616813>

<https://vimeo.com/267594630>

They could be played on a loop using VLC.

Cheers,
TR.

Dr Tom Rayner
National Carp Control Plan, Digital Media Manager
Fisheries Research and Development Corporation (FRDC)

Port Stephens Fisheries Institute
Locked Bag 1, Nelson Bay NSW 2315
☐☐☐☐: 0476 985 155
Email: tom.rayner@frdc.com.au
Web: www.carp.gov.au



On 13 Jun 2018, at 2:58 pm, Matt Barwick <matt.barwick@frdc.com.au> wrote:

<130618_NCCP project team weekly meeting actions.docx>

From: Kerin Heatley
Sent: Thursday, 19 April 2018 2:19 PM
To: Mark Hely
Cc: Jayne Goldring; Katie Paynter
Subject: Re: Panel discussion proposal

Hi Mark,

Thanks for your feedback on the original panel discussion idea, please find below an amended response more focused on water utilities.

Please note speaker ideas are still to be confirmed at this stage, and happy to tweak content based on what you believe are the "hot buttons" for the audience.

Title

European Carp - how are they impacting our local water supplies and what can we do about them?

Aim

Present an in-depth perspective on how carp impacts Australian water supplies at a local level. Hear from a NSW Shire Council managing a serious infestation of carp, and the impact on local waterways and the implications for the community - from the environment through to the local economy. Present potential solutions and a way forward via the National Carp Control Plan (NCCP).

Content

The Panel will be hosted by a moderator and discussion topics will include:

- case study: how one major regional town's water supplies have been impacted by carp, and how this relates to the state of local water resources;
- a look at state government legislation on supporting healthy waterways and its application;
- what are the implications for regional Australian towns (and more broadly) if nothing was done about carp?
- the NCCP's approach to solving Australia's carp problem;
- what stage the NCCP is up to;
- short Q&A session.

Proposed Panel Composition

- Representative from Wagga Wagga Shire Council (TBC)
- Water asset manager (e.g. Stephen Gemmill, GV Water) (TBC)
- Matt Barwick National Coordinator of the NCCP

Look forward to your feedback Mark.

Kind regards
Kerin

From: Mark Hely <Mark.Hely@lgnsw.org.au>
Sent: Friday, 13 April 2018 10:31:18 AM
To: Kerin Heatley
Cc: Jayne Goldring; Katie Paynter; Mikala Dickie
Subject: RE: Panel discussion proposal

Hi Kerin, thanks for your email and your proposal. Just to clarify, we haven't made a final decision about the selection of presentations yet. And I must say this is an interesting one. Some on our panel don't think this issue will be of much relevance to local water utilities, while others think there is an issue, certainly in terms of sediment, that would be relevant to many, and it would also be a bit of a left field topic that may be of general interest.

So I set you this challenge: can you please update the title, aims and content to specifically focus on the impact for local water utilities. Something such as (for the title) – European Carp – how are they impacting our local water supplies and what can we do about them?

Hope this is not too much of a drama.

Many thanks

Mark

From: Kerin Heatley [mailto:kerin.heatley@seftons.com.au]
Sent: Thursday, 12 April 2018 4:18 PM
To: Mark Hely <Mark.Hely@lgnsw.org.au>
Cc: Jayne Goldring <jayne.goldring@seftons.com.au>; Katie Paynter <katie.paynter@seftons.com.au>; Mikala Dickie <Mikala.dickie@seftons.com.au>
Subject: Re: Panel discussion proposal

Hi Mark

Thanks again for the opportunity to present at the upcoming NSWLG Water Conference. In summary, this is what we're thinking:

Title

Australia's carp problem and what can be done about it: panel discussion.

Aim

Present a range of perspectives on Australia's carp issue and methods to address - via relevant subject matter experts - who will aim to articulate the issues (particularly those of highest concern to councils) and discuss solutions.

Content

The Panel will be hosted by a moderator and discussion topics will include:

- impact of carp on the community - cost, environmental and cultural impacts;
- key issues affecting communities that rely on inland waterways;
- the National Carp Control Plan's (NCCP) approach to solving Australia's carp problem;
- what stage the NCCP is up to;
- short Q&A session.

Proposed Panel Composition

- Matt Barwick National Coordinator of the NCCP.
- Water quality expert (e.g. Joe Pera, NSW Water or Prof. Justin Brookes, Adelaide Uni).
- Water treatment expert (e.g. Joe Pera or Ian Overton from WaterSA)
- Clean up expert (e.g. Allan Lugg NSW DPI)
- MDA rep (e.g. Emma Bradbury)

Mark - we could also look at widening the Panel to include an Indigenous rep, rec fisher and an industry rep (such as Auscott).

Let me know your initial feedback and we can start fleshing out the topic and engaging speakers.

Thanks Mark.

Kerin

From: Mark Hely <Mark.Hely@lgnsw.org.au>

Sent: Thursday, 5 April 2018 11:02 AM

To: Kerin Heatley

Subject: RE: Panel discussion proposal

Hi Kerin, this is a bit of a “left field” topic, but one that may be of particular interest. I’m happy to give more time for you to get something more detailed to me. Would end of next week be ok?

Thanks heaps

Mark

MARK HELY
SENIOR POLICY OFFICER
LOCAL GOVERNMENT NSW

T 02 9242 4045 M 0413 113 201

MARK.HEL@LGNSW.ORG.AU

LGNSW.ORG.AU



From: Kerin Heatley [<mailto:kerin.heatley@seftons.com.au>]

Sent: Wednesday, 4 April 2018 8:03 PM

To: Mark Hely <Mark.Hely@lgnsw.org.au>

Subject: Panel discussion proposal

Hi Mark

Thanks for the chat earlier today. As discussed I work with the National Carp Control Plan <http://www.carp.gov.au> and we're keen to put forward a speaking proposal for the upcoming LGNSW Water Conference.

We have only just come across the submission due date so I'd like to ask for an extension if I may.

If we can, we'd like to explore the idea of a panel discussion. We're looking at putting together speakers from the NCCP, other industry that relies heavily on water (e.g. Auscott) and potentially a representative from the MDA. The topics we'd look to cover (and believe conference goers would be interested in) include:

- impact of carp on local communities
- impact of carp on water users, manufacturers, farmers/irrigators and the community
- we'd cover the cost, environmental and social impacts carp have had
- there will also be research underway we can look to tie in, to ensure we share up to date information - so we'd look at preparing a media release off the back of the discussion as well.

Let me know your initial thoughts and if you're keen to pursue, we can start pulling this together.

Many thanks
Kerin

Kerin Heatley
Account Director
E: kerin.heatley@seftons.com.au
M: +61 404 831 253 P: +61 2 6766 5222
21 Bourke Street PO Box 1715 Tamworth NSW 2340
W: seftons.com.au

My work days are Tuesday, Wednesday and Thursday, 9.00am – 5.00pm

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National Carp Control Plan
 STAKEHOLDER ENGAGEMENT SCHEDULE Updated 26th June 2018

DATE	WHO / WHAT	COMMITMENT	WHERE	KEY CONTACTS	STATUS	NCCP REP	NEXT STEPS	JURISDICTION
APRIL								
ON HOLD	Australian Recreational Fishing Foundation	Partner / support for Gone Fishing Day	TBA	Chair - Brett Cleary 0418 121 317. Gone Fishing Day Sub Committee Chair - Steve Morgan	KH followed up B Cleary again 01/05	Matt Barwick	Continue chasing until meeting confirmed. Seftons has also identified opp with Hook, Line & Sinker as a tie-in	National
MAY								
4th May	Border Region Organsation of Councils (BROC)	Brochures delivered and will be distributed to BROC member councils 3/5 and 4/5	N/A	Robyn Philips	Complete	N/A	COMPLETE - brochures only	QLD & NSW
14-May	Region 5 Riverland Meeting 11-12pm	MB to present via videoconference	N/A	Peter Hunter	Peter and Matt to liaise regarding presenation & various	Matt Barwick	COMPLETE	SA
22nd May	NCCP Steering Committee	Presentation and Q&A	Adelaide	Fontella Koleff / Alex Chalupa	Time TBA	Matt Barwick	COMPLETE	SA
	South Australian federal & state ministers and advisors, listed below:	Briefings	Meet while in SA for PI Workshop	Claire Stephenson & Fontella Koleff	CS & FK to facilitate; KH to manage	Matt Barwick		SA
	Tim Whetstone, Minister for Primary Industries							SA
	Jo Podoliakj, Chief Executive Regional Development Australia							SA
	Local Government Association of SA							SA
	DEW – A/Chief Executive - John Schutz and Sandy Caruthers							SA
	Sharyn Starick, SA Murray-Darling Basin NRM Board – Presiding member							SA
	Mike Williams, Regional Director, Natural Resources SA Murray-Darling Basin Region – DEW			NB. Claire's boss				SA
JUNE								
15-Jun	Region 2 Moira Shire Council	Video conference	N/A	Angus Verley	KH following up MB	Matt Barwick	COMPLETE	VIC
17-Jun 20 Jun	Australian Local Government Association Conference (ALGA)	Part-funding stand with MDA	Canberra	Angus Verley & Emma Bradbury (MDA)	Confimed	TBA	COMPLETE - brochures only	National
16-17 May	Environment & Waterways Alliance NW	Agenda for upcoming Bathurst conf is full	N/A	Mick Callan	Mick would like to stay across NCCP activity	Matt Barwick	KH contacted again 25/6 to determine how best NCCP can have input	NSW
TBA	NSW DPI	Quarterly meetings	Canberra	Geoff - Deputy Director General	TBA	Matt Barwick	Matt holds relationship	NSW
JULY								
July TBC	Australian Veterinary Association (AVA)	In-person briefing	Canberra	Dr Melanie Latter	KH contacted again for meetings in July	Matt Barwick	Ensure we reach aquatic vets via this engagement, alternatively enquire how?	National
July	RAMROC	Go-To Meeting Link		Ray Stubbs	KH emailed	Matt Barwick		

	Hon. Tony Burke MP. Shadow Minister for Environment & Water	In person briefing		Tony.Burke.MP@aph.gov.au			Shadow Minister for Environment & Water	
	Hon. Josh Frydenberg MP. Minister for the Environment & Energy	In person briefing		Josh.Frydenberg.MP@aph.gov.au			Minister for the Environment and Energy	
	Hon. Melissa Price MP. Assistant Minister for the Environment			Melissa.Price.MP@aph.gov.au			Assistant Minister for the Environment	
	Hon. Niall Blair MLC. Minister for Primary Industries, Minister for Regional Water, and Minister for Trade and Industry, Deputy Leader of The Nationals Member of The Nationals	In person briefing	Sydney	TBA	To coordinate	Matt Barwick	Determine key messages for this meeting	NSW / National
TBA	Ministerial Council	In person briefing	Canberra	E. Bradbury to advise	Awaiting	Matt Barwick		National
TBA	Native fish breeding groups	In person briefing	TBA	Seftons to identify key contacts	TBA	Matt Barwick		National
TBA	Destination NSW	In person briefing	Sydney	R Sefton to advise	TBA	Matt Barwick	Seftons / J. Schirmer to provide advice on strategy and messages ahead of each tourism engagement.	NSW
TBA	Tourism Victoria	In person briefing	Melbourne	TBA	TBA	Matt Barwick		VIC
TBA	South Australian Tourism Commission	In person briefing	Adelaide	TBA	TBA	Matt Barwick		SA
AUGUST								
29-30 August	Murray Darling Association (MDA) Conference	Speaking opp and/pr stand. \$1.5-2K value	Leeton	Angus Verley & Emma Bradbury (MDA)	Confirmed	TBA	KH to follow-up with AV re requirements	NSW/VIC/SA
TBA	Senate for Select Standing Committee	MB has sent initial follow-up	Mildura - houseboat	Rebecca Hegelby (Assist Dr Water - DAWR)	KH to follow-up once response received	Matt Barwick	Need to consider attendees (e.g. Joel Fitzgibbon MP, Niall Blair, Harold Clapham, Jacki Schirmer, Janet Howieson)	National / VIC
TBA	Koi Association - follow-up meeting	MB / PM to contact	Sydney			Matt Barwick	Need to determine key message/s for this meeting	NSW/National
SEPTEMBER								
TBA	Namoi Group of Councils	date. KH has proposed early Sept	TBA	Officer, Namoi	Rebel closer to the	Matt Barwick	TBA	NSW
3-5 Sept	NSW Water Conference	Put forward speaker panel proposal focused on water utilities	Armidale	Mark Hely	Awaiting feedback	TBA	Once approved, speakers to be locked in	NSW
TBA	NSW DPI	Quarterly meetings	Canberra	Geoff - Deputy Director General	TBA	Matt Barwick	Matt holds relationship	NSW
TBA	NSW Irrigators & Irrigators Council	In person briefing	Sydney	Steve Whan	KH / RS to contact	Matt Barwick		NSW
TBA	MDBA Board Presentations	TBA	Canberra	Vicki Woodburn / Emma Bradbury	KH to follow-up	Matt Barwick		NSW/VIC/SA
OCTOBER								
13-15 Oct	Gone Fishing Day	Events	National	Brett Cleary	See above	Local reps	Seftons will devise separate comms plan	National
TBA	Indigenous engagement	In person meeting/s	TBA	TBA	KH to liaise with MB and PM	Matt Barwick		National
TBA	NRM cross-border alliance groups	In person meeting/s	TBA	TBA	TBA	TBA	TBA	NSW/VIC/SA
NOVEMBER								
	TBA							

DECEMBER								
	TBA							

NCCP Stakeholder Engagement Update

The National Carp Control Plan (NCCP) is currently engaging with a range of stakeholder groups including commercial fishers, fish breeders, tourism operators, Koi breeders and other key groups that may be affected by carp biocontrol.

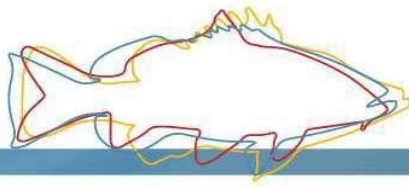
This involves talking directly with key stakeholders to understand their ideas, views on impacts and concerns, and co designing potential solutions to address issues identified. This engagement approach recognises the wide range of interested stakeholders and views about integrated strategy for the control of carp in Australia.

Workshops and interviews are underway, with representatives of the tourism industry and commercial fishers, with more to come involving other stakeholder groups over the coming months. Outputs, when complete will be made public to enable stakeholders to provide input and provide comment.



Commercial Fisher Keith Bell talks to Matt Barwick about controlling carp impacts. Keith is one of Australia's most experienced carp fishers, having fished for carp since 1973 and establishing the international export of carp products in 1998.

Image: Tom Rayner



NATIONAL CARP CONTROL PLAN
RESTORING NATIVE BIODIVERSITY

DRAFT MEDIA RELEASE

XX June 2018

Behind the Scenes with the National Carp Control Plan
– the people, research and findings

- New Clearer Waters video series released today on www.carp.gov.au
- First five episodes focus on carp control research and common concerns
- NCCP encourages community input via www.yoursay.carp.gov.au

The majority of the fish swimming in many of Australia's waterways are carp, leading most people to agree that this introduced fish has reached alarming proportions. Coined the 'rabbit of our rivers', there is large support among communities and stakeholders for a reduction in carp numbers, however, some debate continues around the most appropriate methods to achieve this.

A new video series produced by the National Carp Control Plan (NCCP) brings viewers "behind the scenes" to meet the researchers working to understand the control carp options and potential impacts and outcomes to date.

"To date fifteen separate research projects have been commissioned by the NCCP, involving 19 of Australia's leading universities, research institutions and expert organisations to deliver independent and rigorous science and explore carp control options" says Matt Barwick, National Coordinator of National Carp Control Plan.

"As these projects begin to deliver research findings it is important that we keep people updated on results to date and to address some of the more commonly asked questions and concerns. That's what the Clearer Waters series is all about."

Titled Clearer Waters, the NCCP today released the first five episodes in the series with titles including:

- How many carp are in Australia?
Before any plan is made to control carp, we need to know how many carp are actually in Australia and where they are. The first episode focuses on biomass estimation research to date includes interview with researcher Jarod Lyon from the Arthur Rylah Institute.
- How does the carp virus work?
Explains how the carp virus works and is transmitted and includes details of CSIRO trials to determine the susceptibility of non-target species. Includes interview with the CSIRO's Ken McColl.
- Does the carp virus pose risks to human health?
Explains a review undertaken to investigate if the carp virus could impact human health – both direct and psychosocial. Includes interview with University of Canberra researcher Katrina Roper.

- How many dead carp impact water quality?
Explains experiments to date to monitor impacts of dead carp on water quality using experimental ponds and includes an interview with researcher Joe Pera from Water NSW and the University of Technology Sydney.
- What happens to dead carp in the wild?
Features a large-scale field experiment to examine what happens when dead carp are left to decay in a wetland. Includes an interview with researcher Justin Brookes from University of Adelaide.

In addition to Clearer Waters, a series of simple animations have been developed to provide the community with some simple information about past carp control efforts, the NCCP decision-making process and how the carp biocontrol could work.

Importantly, those working on the NCCP are also asking to hear directly from the public. “We are committed to engaging and consulting with the public as widely and openly as possible. To ensure that everyone is given the opportunity to share their concerns and ideas with the NCCP, we have launched yoursay.carp.gov.au – a dedicated site where visitors can raise questions they have directly with the team.” Mr Barwick adds, “Through this dialogue, we hope communities and stakeholders gain a greater understanding of the process the NCCP is following to determine the safest science-based solutions to Australia’s carp problem.”

The www.yoursay.carp.gov.au page is available now and the videos and animations can be viewed by visiting www.carp.gov.au.

Ends

About the National Carp Control Plan

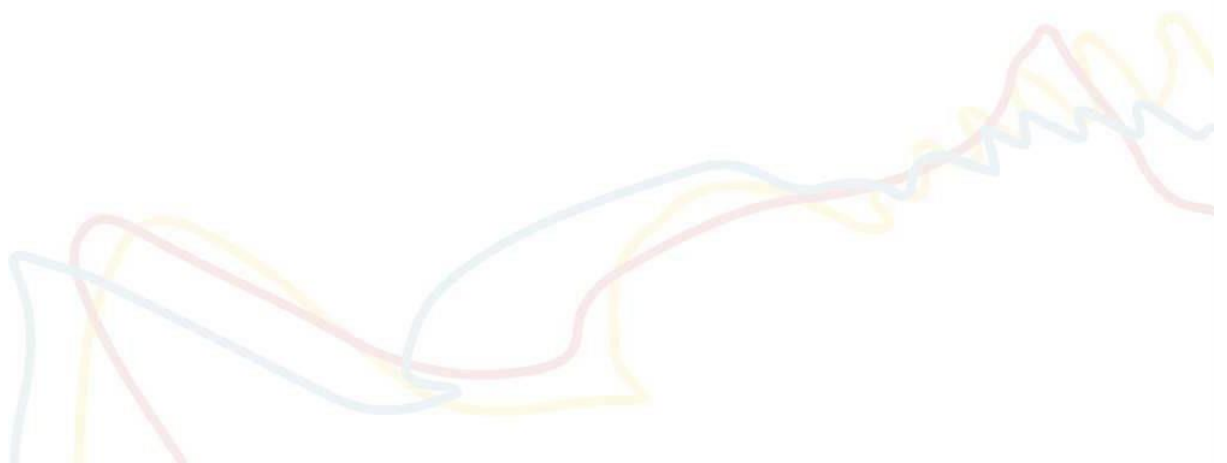
The National Carp Control Plan (NCCP) is being prepared to explore the release of the carp virus Cyprinid herpesvirus-3. The Fisheries Research and Development Corporation (FRDC) is leading the \$15 million planning process on behalf of the Australian Government. Once complete, the FRDC will provide the completed research program and the NCCP to the Australian Government, which will then decide whether to release the virus or not. For more information visit www.carp.gov.au

Media inquiries

Katie Paynter

0417 057 243

katie.paynter@seftons.com.au



TACKLING AUSTRALIA'S CARP PROBLEM (word count: 77250)

Matt Barwick, National Co-ordinator, National Carp Control Plan

Carp are unlikely to win many friends among fishos. Their poor table quality is a contributing factor, but the havoc they wreak upon our waterways and native species is a big factor too.

Carp grow rapidly, mature early, can tolerate extremes of both temperature and water quality and are able to travel long distances... all the hallmarks of a perfect invader. And this gives them an unfair advantage over our native fish species - some of which are now listed as rare or threatened.

Despite the beleaguered state of many of our native species, ~~the~~ recreational fishing in the Murray-Darling Basin is worth approximately \$1.3B. Imagine what it could be worth if native populations were thriving?

Whilst carp aren't the entire problem facing our waterways, they do pose a major threat, and our recreational fishing opportunities suffer as a result. There are some places that fishos just don't frequent anymore because all they are likely to catch is carp.

Over the last 30 years, researchers and managers have been exploring how to protect our waterways from the "rabbit of the river" and support the recovery of native fish numbers.

Various methods have been tried and tested – including trapping, netting, poisoning, screening, unfortunately without any real long-term or widespread success. With carp biomass estimates as high as 80 per cent in some areas, new techniques to reduce carp numbers and support the recovery of our aquatic habitats are now being investigated.

The National Carp Control Plan (NCCP) is being prepared to identify carp control methods that are useful in tackling this problem at a continental scale, including the possible release of the species-specific Cyprinid herpesvirus-3 (CyHV-3). ~~The aim isn't really. In reality, it's not about carp at all: it's about helping restore the balance for native species on a national scale.~~

The Fisheries Research and Development Corporation (FRDC) is leading the \$15 million planning process on behalf of the Australian Government. At the end of process, the FRDC will provide the completed Plan to governments, which will then decide whether to release the virus, or not.

Tackling Australia's carp problem is a big task. It involves all levels of government, Australia's leading scientists and institutions, international researchers and communities working together to interrogate scenarios, challenge assumptions, and ask the difficult questions.....

Could biocontrol be used at the continental scale? Would the virus really control carp impacts and help native communities recover long-term? What are the risks if it works well? How can virus infected carp be utilised? What factors could limit its effectiveness? Are there

Commented [KP1]: This wording is not quite there yet... maybe something like "But is this about more than carp: it's about...."

human health risks? Can we be confident that other species are not susceptible to the carp virus?

To help answer these questions, the NCCP has brought together world-class social scientists, economists, biologists, water-quality experts, veterinarians and risk assessment specialists to investigate the challenges, risks, costs, opportunities and potential benefits of carp biocontrol.

We have also been speaking with stakeholders around Australia, and listening to their thoughts, questions and ideas. Though it is clear there is a lot of support for controlling carp, the main concern that recreational fishers have expressed is a need to be sure that the virus is species-specific, and that the species we love to catch are not susceptible.

Fortunately this question is very central to the research program underpinning the NCCP National Carp Control Plan. CSIRO researchers have spent several years testing Australian native fish species including Murray Cod, Silver Perch, Golden Perch, eels and catfish, as well as Rainbow Trout (they may be introduced, but we all love catching them and recognise they are economically important). Researchers also tested lampreys, freshwater yabbies, two frog species, one lizard species, a freshwater turtle species, as well as chicken and mice.

These species were exposed to 100 to 1000 times the amount of virus to cause disease in carp, with no evidence of replication in any of the species tested. These results demonstrate that all tested species other than carp are not infected or affected by the carp virus. The CSIRO's research has now been published in the peer-reviewed Journal of Fish Diseases.

An independent review is now underway to consider whether additional species testing is required, and if so, whether modified methods might add value, to ensure the highest level of confidence possible in the species-specific nature of the carp virus.

Few would debate that reduced carp numbers will help recover the health of our waterways and aquatic biodiversity. To this end, the NCCP is committed to ensuring that the Plan presented to governments is based on thorough and measured approaches, ensuring the benefits and risks of carp biocontrol are understood and the right recommendations are made to ensure optimum outcomes for Australia.

Visit www.carp.gov.au for the latest news from the NCCP. To have your say visit www.yoursay.carp.gov.au.

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NOTE: Depending on timing, the cover of the Progress Report should be used to update readers about any changes to project timing and scope - and what that means for the project moving forward. The “Utilising carp biomass” article would then start on page 2.

[Cover Story] + page 2 | Utilising carp biomass

In-depth update on Janet Howieson’s research: Assessment of options for utilisation of virus-infected carp. Curtin University researchers are investigating options for the sustainable use of the carp biomass that could result from the potential release of the carp virus.

The research project involves laboratory-based processing trials, as well as commercial-scale trials of processes that produce usable carp-based products including fertilisers, compost, fishmeal and aquaculture feed ingredients. Research will provide the NCCP with a range of efficient, effective and appropriate uses for carp biomass, and that all methods are being carefully explored. Identifying local solutions and a community based approach to using carp biomass is a key component of the project.

Article could focus on recent commercial scale trials including:

- Commercial-scale trial in partnership with Goulburn Valley Water in Victoria to separate two tonnes of dead carp into solids for local composting trials and liquids for further laboratory-based digestion trials looking at biogas production.
- Worm farm trial using 300g whole carp near Shepparton.
- Trial with Sampi in Port Lincoln, South Australia using enzyme hydrolysis to break down 10 tonnes of carp biomass into smaller peptides and amino acids, which can be used for organic fertiliser or as an aquaculture or animal feed ingredient. Outcomes for the remaining bones and scales are also being investigated.
- Large-scale composting trial (Camperdown) undertaken with different composting methods and substrates being tested. Monitoring and evaluation is being conducted throughout the trial.
- Other interesting utilisation options being explored – including insect feed, specifically for the Black Soldier Fly, which produces larvae that can be used as high quality aquaculture feed. Products from the insect larvae feeding trials will then be tested in fish feeding trials to evaluate market opportunity.

Key contact: Janet Howieson, Curtin University.

Source material: Media release, milestone report (Jen Marshall), media coverage (Seftons), images (NCCP/Seftons).

Page 3 | Research Update - Principal Investigators Share Progress

Overview of PI workshop – how many attended, objectives, and high level agenda, updates on key research projects (paragraph or two on each):

- Carp biomass research within affected areas: Jarod Lyon
- How carp mortality events may affect water quality: Justin Brookes
- Predictive modelling to inform virus release strategy: Peter Durr
- Social, economic and ecological risk assessment: Brent Henderson

Outcomes from the meeting, subsequent meetings on Advisory Groups, where to from here/next steps.....

Key contacts: Jen Marshall (NCCP).

Source material: Selected slides from PI Workshop.

Page 4 | Community Consultation: What Australia is thinking...

Learnings from community consultation sessions. Breakdown of locations/attendance, sentiment by state/region. How attitudes of some regions differ. Could include some charts to demonstrate findings. What NCCP is going to do with learnings from community consultation and how it will be used to inform the Plan.

Breakout box re BTT – opportunity for the community to share concerns and ideas with NCCP. Launched yoursay.carp.gov.au – a dedicated site where visitors can raise questions directly with the team.

Key contacts: Seftons/NCCP participants in workshops

Source material: Community Consultation Report.

Behind the scenes with the NCCP

A new video series produced by the NCCP brings viewers “behind the scenes” to meet the researchers working to understand carp control options. First five episodes in the series have been released:

- How many carp are in Australia?
- How does the carp virus work?
- Will the virus pose a risk to human health?
- How many dead carp impact water quality?
- What happens to dead carp in the wild?

In addition to Clearer Waters, a series of simple animations have been developed to provide the community with some simple information about past carp control efforts, the NCCP decision-making process and how the carp biocontrol could work.

Key contacts: Tom Rayner.

Source material: CW videos and animations, media release.

Alternative story ideas:

- Logan Albert Catchment Worksop
- Engineering Solutions Workshop (to be held on 27 June).
- Houseboat (to be held on 24 July)
- Stakeholder Workshops (Commercial Fishers | Jamie and Jacki S)

PT-04 - MILESTONE PROGRESS REPORT

FRDC PROJECT NUMBER: 2017-164

Title: NCCP Communications Program 2018

MILESTONE NUMBER: 8

DATE DUE: 31 July 2018

PRINCIPAL INVESTIGATOR: Seftons

OVERALL PROJECT PROGRESS:

Milestone Status

Has this milestone been achieved (Yes/No)	Yes
Will the project be completed according to the current milestone schedule (Yes/No)	Yes

PROJECT PROGRESS AGAINST PROJECT OBJECTIVES

Despite pending confirmation on the broader NCCP program timelines and funding, the communications and engagement program continued to progress positively, with a focus on the immediate needs of the program.

The NCCP was the focus of a recent RRAT Senate Committee Public Hearing and as such, Seftons developed a detailed response strategy to mitigate negative commentary and address the themes raised as part of this hearing.

As part of this strategy, a detailed update was distributed via a media release called '*What the Research is Telling Us*' to stakeholders, media and the broader public around the status of the program and research under the NCCP.

Media interest in this update was extremely positive with extensive coverage across ABC and regional and rural media print and radio outlets where carp are most prevalent.

Further engagement with stakeholders is underway through preparation work for NCCP's involvement in the NSW Local Government Water Conference, Murray Darling Association Conference and Australian Recreational Fishing Foundation's Gone Fishing Day – as outlined in our 2018 strategy.

Close communication continues with members of NCCP's Communications Working Group – with members engaged for feedback via www.yoursay.carp.gov.au on a range of communications and engagement tactics including the social media campaign to underpin the launch of NCCP's Clearer Waters videos, as well feedback sought to our Senate Response strategy – which comprised of the abovementioned media release 'What the Research is Telling Us', as well as a briefing pack for individual senators, FAQs addressing key themes, briefing meetings at a state government level as well as identifying where possible the use of independent community / NCCP champions.

Seftons also finalised the design of the NCCP newsletter via FRDC's software and included updated messages from NCCP's Matt Barwick to address program status and timelines.

Program milestones and outputs were all met. Specific content produced included:

- Hosted telemeeting with CWG to provide update on program
- Produced NCCP social media kits for CWG members
- Drafted and distributed 'What the research is telling us' media release
- Produced Senate Response Strategy to RRAT Senate Committee Public Hearing

- Attended meeting with Australian Veterinarian Association
- Secured NCCP involvement at NSW Local Government Water Conference
- Secured NCCP involvement at Murray Darling Association Conference
- Assessed opportunity for involvement at Cotton Conference
- Met with J. Schirmer to discuss stakeholder engagement recommendations
- Developed media alert for Ecology Expert Workshop and distributed to Canberra media
- Delivered first draft of NCCP Community Consultation Report
- Management of Bang the Table (www.yoursay.carp.gov.au) including new registrations and enquiries
- Produced NCCP newsletter in FRDC template
- Assessed Australian Recreational Fishing Foundation's Gone Fishing Day opportunities for NCCP
- Communication Working Group management and liaison
- Media monitoring and weekly reporting

Repeat the following three sections for each milestone in the period being reported on:

1. ORIGINAL MILESTONE DATE AND TITLE:

31/072018 – Milestone 8

2. REVISED MILESTONE DATE AND TITLE:

n/a

3. PROGRESS AGAINST MILESTONE (Achieved/Not Achieved):

ACHIEVED

- Liaison with key stakeholder groups to ensure they are informed of program status:
 - NSW Local Government Water Conference – confirmed involvement with event organisers and assembled panel of speakers
 - Murray Darling Association Nation Conference – secured involvement at conference and provided recommendations to NCCP on key speakers
 - Australian Recreational Fishing Foundation 'Gone Fishing Day' – reviewed proposal from ARFF and recommended meeting to explore further opportunities
 - Australian Veterinarian Association – Met with M. Latter in Canberra to brief on NCCP and identify opportunities for alignment
 - J. Schirmer – shared Seftons stakeholder engagement recommendations to ensure it is in line with University of Canberra work.
 - RRAT – developed a communication and engagement response strategy following RRAT Committee Public Hearing.
 - NCCP Stakeholder Plan – provided recommendations to J. Allnut on proposed NCCP stakeholder engagement approach re discussion papers.
 - Cotton Conference – identified opportunities for NCCP and decided not to proceed based on timings and lack of reach to targeted stakeholders
 - Updated and refined stakeholder engagement plan outlining priority meetings for government engagement during August – December 2018
- Production of media relations materials in line with contract deliverables
 - Drafted and distributed 'What the Research Is Telling Us' national release – resulted in widespread media coverage
 - Coordinated interviews for M. Barwick following distribution of media release
 - Drafted and distributed Ecology Experts Workshop alert to target Canberra radio programs.
 - Coordinated media interviews for M.Barwick following workshop media alert distribution
- Management of the Communications Working Group, in conjunction with NCCP
 - Held meeting with CWG on 5 July via teleconference to discuss RRAT Committee response
 - Distributed meeting invitations and managed RSVPs
 - Briefed CWG Chair Ian McDonald prior to meeting
 - Developed meeting minutes following telemeeting on 5 July
 - Postponed the CWG face to face meeting for August due to program uncertainty

- Postponed the CWG telemeeting to be held prior to face to face due to program uncertainty
- Liaised with CWG members on particular jurisdictional media coverage including SA re Adelaide Advertiser and regional coverage.
- Development of supporting communications collateral
 - Developed NCCP newsletter in FRDC software, updated opening message from M. Barwick
 - Murray Darling Association May Newsletter Update
 - Coordinated approvals of Clearer Waters videos
 - Development and delivery of CWG Social Media Pack to support the launch of Clearer Waters
- Preparation of reactive responses to all relevant media within 24 hours
 - Counsel re Adelaide Advertiser
 - Liaison with Murray Valley Standard
 - Liaison with Craig Ingram re Gippsland Farmer/Latrobe Valley Express
 - Monitoring of coverage following RRA Public Hearing
 - Daily media monitoring on issues/challenges to the NCCP and relevant information is forwarded on to NCCP team.
 - Weekly media analysis report provided with sentiment and key themes listed. Each story picked up on Isentia and BuzzWords is analysed, with about 10 questions answered for each, with data kept in a spreadsheet which is updated daily and forms the basis for the report.
 - Key themes are noted and issues management response is developed.
- Ongoing liaison with FRDC to identify and respond to threats
 - Daily phone calls and emails to FRDC/NCCP to discuss next steps and to identify issues. Focus on timing and budget messaging.
 - Provided counsel to NCCP re RRAT Senate Response
 - Weekly media analysis report developed and provided
- Bang the Table content management
 - Management of questions received via Bang the Table and updates on new registrations
 - Investigation of upcoming webinar options – provided recommendations to NCCP
- Carp Inbox Support
 - Provided draft responses as required
 -

NOT ACHIEVED

n/a

PUBLICATIONS/PRODUCTS

- NCCP CWG Social Media Packs
- NCCP 'What the Research is Telling Us' media release
- NCCP Ecology Expert Workshop media alert
- NCCP Updated Stakeholder Engagement Approach
- NCCP Newsletter –July (pending approval)
- Weekly media analysis report 2.7.2018
- Weekly media analysis report 9.7.2018
- Weekly media analysis report 16.7.2018
- Weekly media analysis report 23.7.2018
- Weekly media analysis report 30.7.2018

SPECIAL CONDITIONS

N/A

INTELLECTUAL PROPERTY ISSUES ARISING:

N/A

CONTACT WITH BENEFICIARIES:

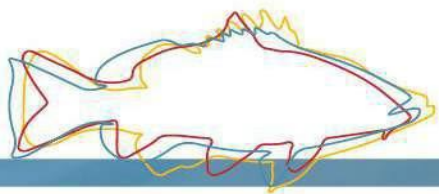
- Members of the Communications Working Group
- Australian Veterinarians Association
- Murray Darling Association and member councils
- Water NSW
- University of Canberra's Jacki Schirmer
- Cotton Info re Cotton Conference
- Centre for Invasive Species Solutions
- Australian Recreational Fishing Foundation (ARFF)

PROGRESS AGAINST COMMUNICATION & EXTENSION PLAN:

The communications program is progressing positively with all agreed outputs met. The communications activities have so far aligned with the objectives of this project. The objectives are to inform and engage communities and stakeholders about the NCCP; widely communicate the NCCP process; provide opportunities for community input into the NCCP; support and enhance FRDCs reputation through developing high quality materials and managing and delivering the project with high professionalism.

VARIATIONS TO PROJECT:

N/A



NATIONAL CARP CONTROL PLAN
RESTORING NATIVE BIODIVERSITY

MEDIA ALERT

A future with fewer carp – what might the freshwater ecosystem look like in 5 or 10 years?

Interview Opportunity at Canberra Workshop:

- ☐ Matt Barwick (National Co-ordinator, National Carp Control Plan)
- ☐ Ben Gawne (University of Canberra)

A workshop among experts in freshwater ecology will be held in Canberra today to help inform predictions for medium to long-term ecological responses to potential carp biocontrol. Predictions will include effects on water quality, aquatic plants, invertebrates, fish, birds, and amphibians.

This workshop forms part of an expert elicitation process led by University of Canberra, under the National Carp Control Research Program, and builds on a similar session held in Albury last week.

Workshop participants will collaboratively develop data-informed conceptual maps to describe key system processes and relationships relevant to carp control, enabling consideration of the likely direction and magnitude of responses over medium and long-term timescales.

Results of the process will help the NCCP to inform analysis of benefits associated with carp control, as well as risk assessment research and stakeholder engagement activities.

Media enquiries

Katie Paynter

0417 057 243

katie.paynter@seftons.com.au



NCCP Social Media Content Packs **To promote Clearer Waters and NCCP Animations**

The NCCP is committed to ensuring stakeholders and the public are kept informed of the work underway by the NCCP to investigate carp control options, as well as the benefits and impacts a possible release of the carp virus could have.

A series of videos have been produced by NCCP's Dr Tom Rayner, called *Clearer Waters*, which provide an insight into some of the cornerstone research projects underway.

Supporting these videos are a series of five animations which aim to answer some of the common questions: *What is the NCCP?*, *Why are we trying to control carp?*; and *What is the carp virus?*

To ensure maximum reach for this content, NCCP would like to invite Communications Working Group members to share some, or all of its content, via your respective digital platforms.

The NCCP appreciates this content may generate interest, questions, comments or complaints from some audiences and we do not wish to add to your workload by managing potential online discussions. As such, we have developed some generic responses which you may like to use to redirect the conversation back to the NCCP. These generic responses are designed to address possible questions by providing links to our comprehensive FAQs - where many of the questions will already be answered, as well as redirecting feedback to our yoursay.carp.gov.au page.

Included in this document are:

NCCP Animations

Animation 1	https://vimeo.com/album/5100837/video/263252776	What is the NCCP?	1 x Facebook Post	2 x Tweets
Animation 2	https://vimeo.com/album/5100837/video/263252746	Trying to control carp, what's been done already	1 x Facebook Post	2 x Tweets
Animation 3	https://vimeo.com/album/5100837/video/263252717	About the carp virus	1 x Facebook Post	2 x Tweets
Animation 4	https://vimeo.com/album/5100837/video/263252664	Muddying the waters – the problem of carp	1 x Facebook Post	2 x Tweets
Animation 5	https://vimeo.com/album/5100837/video/263252636	Let's talk carp	1 x Facebook Post	2 x Tweets



NCCP Clearer Waters Videos

Clearer Waters Video 1	https://vimeo.com/auscarpplan/clearerwaters	The Science Behind The National Carp Control Plan	1 x Facebook Post	2 x Tweets
Clearer Waters Video 2	https://vimeo.com/auscarpplan/clearerwatersbiomass	How many carp are in Australia?	1 x Facebook Post	2 x Tweets
Clearer Waters Video 3	https://vimeo.com/auscarpplan/clearerwatersthecarpvirus	How does the virus actually work?	1 x Facebook Post	2 x Tweets
Clearer Waters Video 4	https://vimeo.com/auscarpplan/clearerwatershumanhealth	Will the virus affect humans?	1 x Facebook Post	2 x Tweets
Clearer Waters Video 5	https://vimeo.com/auscarpplan/clearerwatersmesocosms	How dead carp cause problems?	1 x Facebook Post	2 x Tweets
Clearer Waters Video 6	https://vimeo.com/auscarpplan/clearerwaterswetlandtrial	What happens to dead carp in the real world.	1 x Facebook Post	2 x Tweets

NCCP has also included some general facts and figures about carp in Australia at the conclusion of this document.

NCCP Standard Responses

To direct people to 'have their say' on carp control	<ul style="list-style-type: none"> We appreciate your concerns / support and feedback. Please register at www.yoursay.carp.gov.au to share these thoughts with the NCCP and to receive regular NCCP updates.
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To direct people to information about NCCP research	<ul style="list-style-type: none"> Thank you for your concerns /questions/ feedback. Please visit www.carp.gov.au to read about the research projects underway as part of the NCCP.
To direct people to NCCP's FAQs	<ul style="list-style-type: none"> Thank you for your question. Please visit www.carp.gov.au/faq where many of these questions are answered. You can also submit new questions via www.yoursay.carp.gov.au or carp@frdc.com.au

NCCP Social Media Posts regarding Animations & Content

Content Type	Facebook Post	Twitter Tweets
Animation - What is the NCCP?	Are you aware of the impact carp are having on Australia's waterways? The National Carp Control Plan (NCCP) is looking at effective ways to reduce carp impacts.	<ul style="list-style-type: none"> The National Carp Control Plan is researching potential solutions to the 'rabbits of our rivers'
		<ul style="list-style-type: none"> The National Carp Control Plan is exploring how best to reduce carp impacts in Australia
Animation - Trying to control carp	Various attempts have been made to reduce carp numbers, however none have been overly effective. We need a new approach....	<ul style="list-style-type: none"> We need a new approach to reduce the number of carp in our waterways. The National Carp Control Plan is currently looking at the best way, which may involve biocontrol.
		<ul style="list-style-type: none"> So far, attempts to reduce carp from Australia's waterways have not been effective. The carp virus could be one solution.
Animation - The Carp Virus	The National Carp Control Plan is focussed on reducing the impacts of destructive carp in our environment. An option being considered is the release of the carp virus.	<ul style="list-style-type: none"> The carp virus is one potential solution being explored to address our carp problem. Find out more about the National Carp Control Plan's work (insert link)
		<ul style="list-style-type: none"> The pest species carp has obvious impacts on our rivers - the National Carp Control Plan is looking for



		ways to reduce these impacts and rejuvenate our waterways & native fish species.
Animation - Mudding the waters	Carp grow fast, breed early, produce lots of eggs, tolerate varying water temperatures and travel long distances...they are the perfect invader which dominate native fish species.	<ul style="list-style-type: none"> • Carp make up to 80% of the total weight or biomass of fish in some waterways! Carp are taking away resources from Australia's native fish species.
		<ul style="list-style-type: none"> • Carp grow fast, breed early, produce lots of eggs, tolerate varying water temps and travel long distances...they are the perfect invader which dominate native fish. They also impact on waterbirds, frogs, and other native species.
Animation - Let's talk carp	Anyone that uses carp affected waterways for drinking, swimming, fishing, irrigation or recreational activities are impacted by carp – directly or indirectly.	<ul style="list-style-type: none"> • Understand the impacts carp can have on people that rely on our waterways for drinking, swimming, fishing, irrigation or recreational activities.
		<ul style="list-style-type: none"> • The National Carp Control Plan is not only undertaking research, they're speaking with communities, industries, organisations and people affected by carp. We want to hear from you. www.yoursay.carp.gov.au
Video 1 - Clearer Waters: The Science Behind The National Carp Control Plan	Did you know that carp not only dominate native fish communities, they impact water quality and prevent aquatic plant growth? Learn more about carp impacts.	<ul style="list-style-type: none"> • Understand the science behind the National Carp Control Plan...
		<ul style="list-style-type: none"> • The National Carp Control Plan is responsible for developing a plan to reduce carp impacts at a national scale.



Video 2 - How many carp are in Australia?	How many carp in Australia? Carp have quickly become the dominant freshwater fish in south-eastern Australia. Research being conducted under the National Carp Control Plan will provide more accurate and comprehensive estimates which are vital to informing a possible virus release and subsequent clean up.	<ul style="list-style-type: none"> The National Carp Control Plan is working to achieve an accurate and comprehensive estimate of carp biomass to inform release scenarios, clean up strategies and costings.
		<ul style="list-style-type: none"> Carp are an introduced species and have become the dominant freshwater fish in south-eastern Australia, comprising up to 80% of the fish biomass in some waterways. Exactly how many tonnes of carp we have is currently being investigated under the National Carp Control Plan.
Video 3 - How does the virus actually work?	The National Carp Control Plan explains how the virus works with testing underway to understand and mitigate potential risks.	<ul style="list-style-type: none"> What is the carp virus, how does it work and will it affect our native fish species? CSIRO has been studying the virus for the past ten years, hear from lead researcher Ken McColl.
		<ul style="list-style-type: none"> Hear how the carp virus infects and affects the pest species and how it might be a solution to reducing carp impacts on our waterways.
Video 4 - Will the virus affect humans?	The National Carp Control Plan enlisted Australian National University's Dr Katrina Roper to investigate if there are any potential risks to human health if the carp virus is released. Find out about her work to date here.	<ul style="list-style-type: none"> Does the carp virus pose a risk to human health? Australian National University has been investigating on behalf of the National Carp Control Plan.
		<ul style="list-style-type: none"> The carp virus is present in 33 different countries and to date there is not one single documented case of cross infection. Find out about the research being done here in Australia to further explore this.



Video 5 - How dead carp cause problems?	National Carp Control Plan - Water quality expert, Joe Pera, takes us through his research on the impact dead carp could have on water quality if the carp virus was released. The results are helping formulate a plan of attack to mitigate risks associated with a possible carp virus release.	<ul style="list-style-type: none"> Information collected by the National Carp Control Plan and Water NSW will help minimise the risk of dead carp on our waters, should the carp virus be released. Find out more here.
		<ul style="list-style-type: none"> What impact could dead carp have on our water quality? Hear from Water NSW's Joe Pera about the research trials he's undertaking to learn more.
Video 6 - What happens to dead carp in the real world?	The National Carp Control Plan recognises the importance of understanding the risks from dead carp in our waterways. Justin Brookes, from the University of Adelaide, has been examining the risk in a large-scale, high-density, real wetland trial.	<ul style="list-style-type: none"> More than 15 different research projects are underway to investigate possible carp control methods. University of Adelaide has explored the potential impact of dead carp on water quality, should the carp virus be released. University of Adelaide's Justin Brookes, together with the NCCP, has been examining the risk of dead carp in a full-scale, high-density wetland trial.

Fast Facts / Did You Knows

Topic	Social media Fast Facts
Carp Origin	Carp were first introduced in the 1800's but it wasn't until the 1960s when their numbers really exploded. Many now want carp numbers reduced – join the discussion on how best we can achieve this at www.yoursay.carp.gov.au
Carp prevalence	Carp have been in Australia for over 100 years and are now established in all states and territories, except the Northern Territory. Read more about the plans to reduce carp numbers and their impacts to our environment www.carp.gov.au
Carp behaviour	Carp spawn earlier than many Australian native species, which means their juveniles have access to food and other resources before many native fish species, giving them the upper hand. Visit www.carp.gov.au for more information on research underway to reduce carp numbers and their impacts.



Optimal carp conditions	Carp thrive in rivers that are already degraded, and tend to intensify the impacts of other environmental pressures. Register at www.yoursay.carp.gov.au to keep informed with work underway by the National Carp Control Plan team.
Rabbits of our rivers	Carp can tolerate a wide variety of environmental conditions, have a broad diet, grow rapidly, mature early, can produce large numbers of eggs, are strong swimmers, good jumpers, and do well in ecosystems that are modified by humans. They are the 'rabbits of our rivers'. Visit www.carp.gov.au for more information.
Carp biomass	In many parts of Australia, carp comprise over 80% of fish biomass, exceeding 350 kilograms per hectare in some parts of the Murray-Darling Basin. Research is underway looking at ways to effectively reduce carp numbers. Find out more at www.carp.gov.au
Carp impacts	Carp impacts are felt environmentally, economically and socially. They affect water quality, native fish, fishing and irrigation. Read more about the work underway by the National Carp Control Plan to reduce carp numbers and carp impacts. www.carp.gov.au
Carp Before & After Image	This image clearly depicts the impacts carp have on our waterways. http://carp.gov.au/-/media/Fish-NCCP/Images/before_after_carp_iain_ellis-01.ashx?h=911&w=1920&la=en&hash=AA3D461E267B134C1223E5F02C8D1B11C80A4733 Find out more about proposed carp control methods at www.carp.gov.au . Have your say at www.yoursay.carp.gov.au

National Carp Control Plan

Stakeholder engagement recommendations

Updated 16th July 2018

OVERVIEW

Seftons has prepared the following stakeholder engagement strategy update to reflect the outcomes of the work underway by Dr Jacki Schirmer as well as the recent Senate Standing Committee on Regional, Rural Affairs and Transport (RRAT) special hearing on the National Carp Control Plan (NCCP).

In particular, the Senate hearing and resulting media coverage has raised concerns about the program from some sections of the community, and Seftons believes it is imperative to engage with key stakeholder groups to stem any further negative sentiment.

Seftons recommends engaging with key government stakeholders and influential bodies over the next few weeks and months to support a robust and transparent planning process, understand stakeholder concerns, with the Plan designed to reduce and mitigate negative impacts, where potential for those to occur is identified.

Stakeholders outlined below include federal, state and local government contacts, as well as industry groups such as vets, recreational fishers and Environmental Non-Government Organisations (ENGOS). Note these groups are also reflective of the stakeholders prioritised by Dr Jacki Schirmer at the recent CWG meeting in Adelaide.

STAKEHOLDER ENGAGEMENT PLAN JULY - SEPT

Below is a list of recommended federal and state government contacts. State government contacts include decision makers in carp-impacted areas including South Australia, Victoria, New South Wales and Queensland. In Victoria, Craig Ingram undertakes engagement with state government leads, however Seftons recommends additional/joint input from the NCCP at this time.

While the recommended channel for government engagement is face-to-face, Seftons is happy to discuss in more detail what is achievable in the allocated timeframe. Where possible, Seftons will coordinate one-hour meeting blocks on the same days, to maximise efficiencies in Matt Barwick's diary.

It should be noted that an update on the program's timeline and scope is imminent, however Seftons proposes proceeding with the coordination of meetings now – as it will take several

weeks / months to secure time in the relevant contact's diary. Where a Minister is not available for briefings, NCCP should approach their key policy advisors.

Federal and State Government Contacts

WHO	MESSAGE/S	CHANNEL	TIMING
Federal government			
Senate Standing Committee on Regional, Rural Affairs and Transport (RRAT)	<ul style="list-style-type: none"> • Scope of work • Raise and address concerns at hearing • One-on-ones with researchers 	Preparatory briefing kits ahead of face-to-face meeting Houseboat event	Briefing kits: July Face to face: possibly October
Hon. David Littleproud, Minister for Agriculture and Water Resources Also consider: <ul style="list-style-type: none"> -- Alison Penfold -- Sen. The Hon. Ann Ruston (approach re electorate (SA), not portfolio – liaise with FK for advice) 	<ul style="list-style-type: none"> • Continued liaison on outcomes of discussion with DAWR • Considered involvement in program extension announcement 	Direct communication via NCCP / FRDC	Ongoing
Hon. Josh Frydenberg MP, Minister for the Environment and Energy Member for Kooyong, Victoria	<ul style="list-style-type: none"> • Update on program status and timelines • Communication on research status • Information to address Senate hearing concerns 	Face-to-face	Early Aug
Hon Melissa Price MP, Assistant Minister for the Environment Member for Durack, Western Australia <i>*If Minister Frydenberg is unavailable</i>	<ul style="list-style-type: none"> • Update on program status and timelines • Communication on research status • Information to address Senate hearing concerns 	Face-to-face	Early Aug
Hon. Joel Fitzgibbon, Shadow Minister for Agriculture, Fisheries and Forestry. Shadow Minister for Regional & Rural Affairs	<ul style="list-style-type: none"> • Program status and update • Stakeholder engagement & findings to date 	Face-to-face	Late July/early Aug

WHO	MESSAGE/S	CHANNEL	TIMING
Hon. Tony Burke, Shadow Minister for Environment and Water	<ul style="list-style-type: none"> Program status and update Stakeholder engagement & findings to date 	Face-to-face	Late July/early Aug
Nick Champion MP, Shadow Assistant Minister for Manufacturing and Science	<i>Coordinate meeting if Minister Fitzgibbon and Burke are unavailable</i>		
Lisa Chesters MP, Shadow Assistant Minister for Rural and Regional Australia	<i>Coordinate meeting if Minister Fitzgibbon and Burke are unavailable</i>		
Hon. Michael McCormack MP, Leader of the Nationals, Deputy Prime Minister	<ul style="list-style-type: none"> Program scope and overview, status update 	Face-to-face	Aug
Senator Richard Di Natale, Leader of the Australian Greens	<ul style="list-style-type: none"> Program scope and overview, status update. Preparedness on issues relating to clean-up and virus transmissibility and safety questions 	Face-to-face	Sept
SA State Government			
Hon. David Speirs MP, Minister for Environment and Water	<ul style="list-style-type: none"> Program overview, insights from SA consultation 	Face-to-face	Aug
Hon. Tim Whetstone, Minister for Primary Industries and Regional Development	<i>Discuss with FK if meeting required</i>		TBA
Tammy Franks MLC and Mark Parnell MLC, South Australian Greens	<ul style="list-style-type: none"> Update on program status, how key SA issues are being explored 	Face-to-face	Aug
Connie Banaros MLC and Frank Pangallo MLC, SA Best	<ul style="list-style-type: none"> Update on program status, how key SA issues are being explored 	Face-to-face	Aug
Vic State Government			
Hon. Jaala Pulford MP, Minister for Agriculture	<ul style="list-style-type: none"> Update on program status, funding and timeline 	Joint meeting with C. Ingram	Aug
Hon. Lily D'Ambrosio MP, Minister for Energy, Environment and Climate Change.	<ul style="list-style-type: none"> Update on program status, funding and timeline 	Joint meeting with C. Ingram	Aug/Sept
NSW State Government			

WHO	MESSAGE/S	CHANNEL	TIMING
Hon. Niall Blair MLC, Minister for Primary Industries	<ul style="list-style-type: none"> Program update, research milestones, stakeholder engagement update 	Face-to-face	Sept
Hon. Gabrielle Upton MP, Minister for the Environment	<ul style="list-style-type: none"> Program update, research milestones, stakeholder engagement update 	Face-to-face	Sept
QLD State Government			
Hon. Leanne Enoch MP, Minister for Environment & the Great Barrier Reef, Minister for Science	<ul style="list-style-type: none"> Program update, research milestones, stakeholder engagement update 	Face-to-face	Sept
Hon. Mark Furner MP, Minister for Agricultural Industry Development & Fisheries	<ul style="list-style-type: none"> Program update, research milestones, stakeholder engagement update 	Face-to-face	Sept

Local government

Seftons recently coordinated a teleconference with the NCCP and Emma Bradbury from the Murray Darling Association (MDA) to understand recent feedback from local government in regards to planning for a possible virus release, including clean up. The following actions were agreed:

- ? Matt will update his council presentation to include more detail about the work that is going into planning for a potential virus release and demonstrate how this aligns with Local Government Emergency Response Plans (EMPs). Seftons will continue to coordinate ROC update meetings for Matt via teleconference.
- A letter will be drafted and issued to council executives, providing an overall update on the NCCP, and feature more detail about what planning is in place to support a possible virus release and the associated clean-up. The NCCP may be able to seek input into this letter from emergency response expert Kevin Cooper, which is recommended. Seftons will work with Emma from the MDA to determine how best to distribute the letter widely and effectively. Seftons will remain in contact with MDA's Emma Bradbury to discuss timing for this letter, during our conversation it was agreed it would follow clarification of program timings from Federal Government.

Conferences

Below is a list of additional opportunities currently in discussion with the NCCP.

NSW Local Government Water Conference – September 2018

Speaker panel discussion recently approved by conference organisers – purpose is to listen to and acknowledge concerns, and update on work being undertaken to address any questions or issues. NCCP currently reviewing speaker suggestions.

Australian Local Government Conference (complete – June 2018)

NCCP supported the MDA stand at the recent ALGA Conference. Matt Barwick attended the stand and brochures were made available.

Other Priority Stakeholder Groups

On the basis of existing insights with regards to the program, and ongoing work undertaken by Dr Jacki Schirmer, Seftons recommends the following stakeholder groups and individuals are targeted. Note, this list is not exhaustive and only includes the “priority” stakeholder groups, in order of importance, as identified by Dr Jacki Schirmer. This can be expanded following engagement with priority targets.

Note, Seftons does not wish to duplicate the work already underway by Dr Jacki Schirmer and NCCP’s Jamie Allnut, rather work seamlessly to ensure stakeholders have the information and tools needed to ensure their members are abreast of the program status.

WHO	MESSAGE/S	CHANNEL	TIMING
Vets + Koi and native fish breeders (Jacki and Jamie managing this group)	<ul style="list-style-type: none">Engagement with the science- i.e. virus transmissibility, water quality impactsAllow for input into recommendations – query if AVA has someone in welfare or biosecurity who would like to be involved in developing the plan	Face-to-face	AVA Meeting- 19/07
Freshwater scientists (Jacki, Jamie & Matt)	<ul style="list-style-type: none">Deep engagement with science – evidence analysis, debatePresent all sides of the storyContribution of expert knowledge	BTT -- Input to discussion papers being prepared by NCCP Content for newsletter updates where appropriate – JS to advise	TBA
ENGOS (ACF and Invasive Species Council first – Jacki, Jamie & Matt): -- ACF – JS will meet with James Tresize -- Invasive Species Council – Andrew Cox (Matt and Seftons)	<ul style="list-style-type: none">Engagement with the science- i.e. virus transmissibility, water quality impactsDevelopment of biosecurity planningInput into recommendations	Face-to-face – JS will meet with James Tresize from ACF Inclusion in biosecurity planning – discussion paper	Sept

WHO	MESSAGE/S	CHANNEL	TIMING
		Comms to members	
Farmers / irrigators – National Farmers Federation & National Irrigators Council -- Warwick Ragg (NFF – Matt and Seftons)	<ul style="list-style-type: none"> Transparency around potential impacts – clean up and water quality How can farmers play a role 	Comms to members Events/conferences NFF Weekly Update + state bodies' member comms Weekly Times, The Land, Country Hour	July -- Sept
Politicians and advisors (as above)	N/A	N/A	N/A
Animal welfare groups (RSPCA and Animals Australia)	<ul style="list-style-type: none"> Don't engage until findings of animal welfare assessment are complete 	Face-to-face	Matt/Jen to advise feasible timings
Recreational fishers (Vic, NSW, SA Rec fishing bodies)	<ul style="list-style-type: none"> Care about science and water quality How carp-affected fishing areas will be maintained 	Face-to-face – inc Craig Ingram BTT Comms to member networks Websites, online forums Carp Musters – plan for Easter 2019	From July onwards

ADDITIONAL OPPORTUNITIES

Below is a list of additional opportunities currently in discussion with the NCCP.

Cotton Conference – August 2018

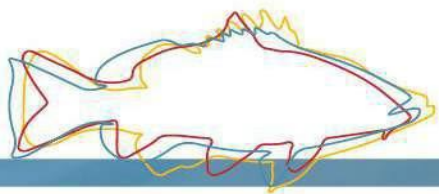
Meet the Researcher session – Seftons is currently working with the organisers to determine reach, engagement opportunity and audience attendance. Recommendations will be put forward to the NCCP.

Clean Up Australia Day Committee

NCCP met with Clean Up in May and held initial discussions regarding a partnership opportunity. Seftons recommends communication remains open with the Clean Up and an update on program status is provided following feedback from DAWR. Updated can be via email from NCCP's Matt Barwick.

Gone Fishing Day Oct 2018

Seftons and the NCCP have been liaising with the organisers to explore joint promotional opportunities for Gone Fishing Day in October, to engage with recreational fishers. Seftons recommends we pick-up conversations again once NCCP timeline and funding arrangements have been confirmed.



NATIONAL CARP CONTROL PLAN
RESTORING NATIVE BIODIVERSITY

MEDIA RELEASE

17 July 2018

National Carp Control Plan research delivering some interesting (and unexpected) findings...

With the National Carp Control Plan's (NCCP) research program now over half way through, some interesting, and at times unexpected, findings are beginning to emerge. Over the past 18 months, Australia's leading universities, research institutions and expert organisations have been working to deliver independent and rigorous science to inform development of a plan for the control of carp in Australia, including the possible release of the carp virus (CyHV-3).

NCCP National Coordinator Matt Barwick says that the issue of carp control in Australia has prompted widespread discussion and debate, with many valid points raised by stakeholders and the wider community, and that sharing some of the early lessons from the research will contribute to this important discussion.

"While all research will go through an extensive independent peer review process before being included in the final plan and made public, the NCCP is able to start sharing some of the insights emerging from the program which will help to address gaps in knowledge and future decision making," says Mr Barwick.

Here are a few examples of what the science telling us?

2 Larger than expected carp biomass variations

[Project: A carp biomass estimate for eastern Australia]

With on-ground fieldwork to estimate carp biomass in different habitats using electrofishing, mark-recapture, fyke netting, and surveying of environmental DNA now complete, summary statistics indicate that carp density varied considerably between sample locations - with carp biomass in some sites sampled revealing carp biomass below, and some well above, the threshold at which ecological impacts occur as a result of carp.

What this means: Identifying where carp density influence ecology is important for informing where priority areas lie. This work will also critically inform water quality modelling and clean up strategies in different habitat types, if the carp virus is approved for release.

2 Decomposition no impact on fertiliser quality

[Project: Assessment of options for utilisation of virus-infected carp]

A recent commercial scale trial into alternate uses for carp biomass found that highly decomposed carp were still usable for producing high quality fertiliser. Further, opportunities exist for processing carp waste on-site, limiting need for transport or storage, thereby helping to keep costs low.

What this means: Carp biomass can be processed into fertiliser regardless of the state of decomposition. Other appropriate utilisation methods continue to be explored including composting and insect feed.

2 Investigations continue into virus spread

[Project: Development of hydrological, ecological, and epidemiological modelling to inform a CyHV-3 release strategy for the biological control of carp in the Murray Darling Basin]

With mortality rates from the carp virus understood to be strongly influenced by multiple factors including water temperature, virus concentration and carp schooling behavior, computer modelling points to few highly specific scenarios in which biocontrol may result in high levels of carp knock-down. These investigations have highlighted a need to further understand exactly how the carp virus is likely to spread from one fish to another.

What this means: Additional lab trials are required to investigate factors that may influence effectiveness of the virus as a biocontrol method in more detail.

2 Research into dead carp impacts on water quality ongoing

[Project: Investigation of nutrient interception pathways to enable circumvention of cyanobacterial blooms following carp mortality events]

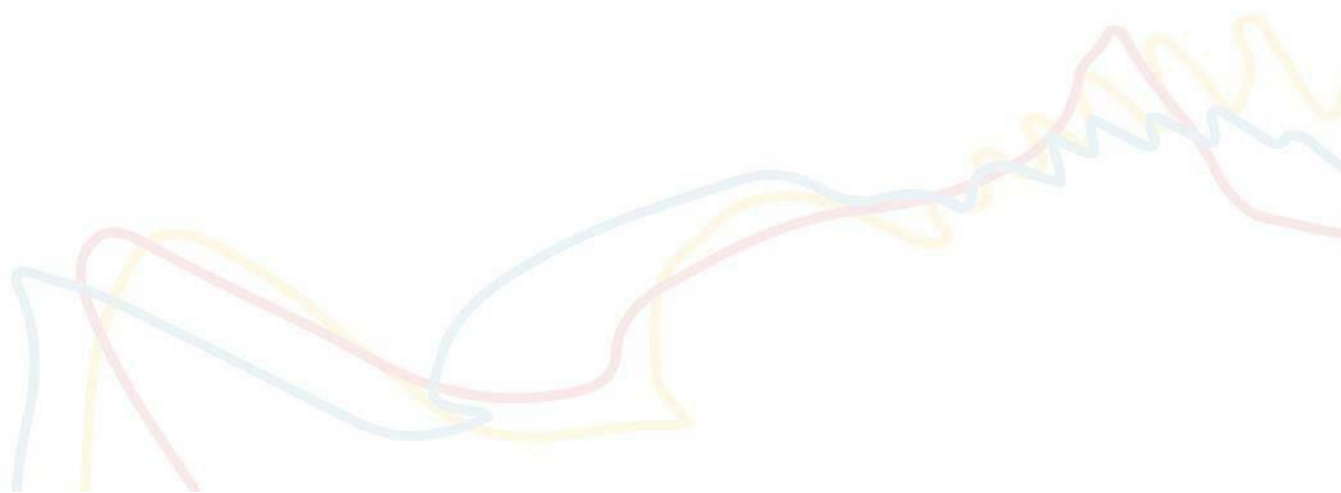
While research by Australian National University scientists has confirmed that the carp virus cannot infect humans *[Project: Cyprinid herpesvirus 3 and its relevance to humans]*, several separate and additional investigations are underway to understand how dead carp might impact on different aspects of water quality. A systematic and quantitative risk assessment project is also exploring different areas of ecological and social risk.

What this means: While factors such as water movement and areas of high carp biomass can be used to identify potential clean-up hot spots, the NCCP acknowledges community concerns about water quality and is committed to providing greater understanding around water quality, and risk of bacteria and microorganisms causing secondary issues.

“The NCCP welcomes robust discussion as it ensures a thorough investigation of concerns can be undertaken. Insights into our learnings will not only inform this debate, but help direct our ongoing research efforts,” Mr Barwick says, “In terms of progress, it’s exciting to receive incoming data to help us learn more about the prospects for potentially controlling carp in Australia safely and effectively.”

“One of the common concerns raised by stakeholders is that more time is needed to review the research findings and ensure the right recommendations are made in relation to carp control. This is an important consideration for our nation, and one that must deliver long term improvements to our waterways. If an extension is needed, as we’re discovering, then we will seek to secure more time.”

“It is important to remember no decision has been made in relation to carp control, or the possible release of the carp virus. The NCCP is designed to enable risks to be identified and explore ways to manage them. This information will then inform the decision-making process. The Fisheries Research and Development Corporation (FRDC) is not involved in the actual decision-making itself – this will be made by governments. Our role is to deliver a comprehensive program of research and stakeholder engagement to inform the development of a plan to control carp in Australia.”



To ensure that everyone is given the opportunity to share their thoughts and opinions about carp control, the NCCP has launched <http://www.yoursay.carp.gov.au/> – a dedicated site where visitors can learn more about the work of the NCCP, leave comments or ask questions.

Ends

About the National Carp Control Plan

The National Carp Control Plan (NCCP) is being prepared to explore the release of the carp virus Cyprinid herpesvirus-3. The Fisheries Research and Development Corporation (FRDC) is leading the planning process on behalf of the Australian Government.

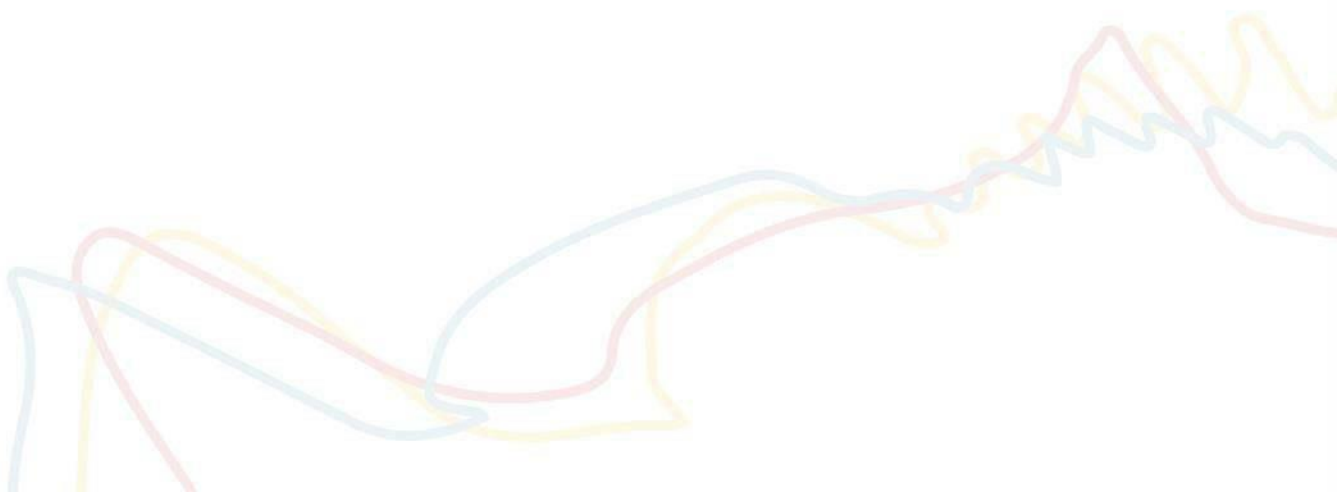
For more information visit www.carp.gov.au

Media enquiries

Katie Paynter

0417 057 243

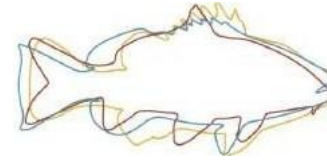
katie.paynter@seftons.com.au



Click [here](#) if you are having trouble viewing this message.

Right click to save

!National Carp Control ! Plan (NCCP) Update.



NATIONAL CARP CONTROL PLAN
RESTORING NATIVE BIODIVERSITY

: There is no question that the NCCP has prompted
: discussion and debate about Australia's carp control
: options - with many valid points raised by stakeholders
: and the wider community.

: The NCCP welcomes this robust discussion as it ensures a thorough investigation of options and
: review of concerns can be undertaken. It is important to remember no decision has been made in
: relation to carp control, or the possible release of the carp virus (CyHV-3). The NCCP is designed to
: enable risks to be identified and managed, and for this information to inform the decision making
: process. It is not involved in the actual decision-making itself.

The role of the NCCP is to deliver a comprehensive program of research and stakeholder engagement
to inform the development of a plan to control carp in Australia. The final decision will be made by
governments. So with this in mind, this newsletter aims to share with you some of the work underway
by the NCCP to better understand the benefits and risks associated with carp control.

From Beaudesert to Bendigo and Sydney to Swan Hill, our team continues to meet with local
communities and stakeholders to inform our National Carp Control Plan. Some of the key issues
raised at these meetings to date have included virus spread, impact on water quality and logistics of
clean up, with more than 80 sessions held and more to come.



National Carp Control Plan – Weekly Media Report

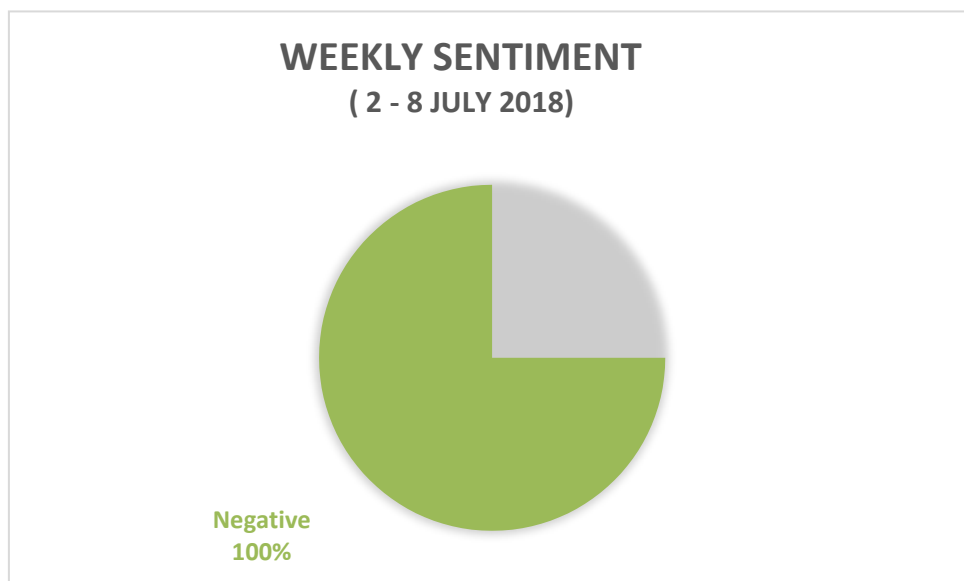
2 - 8 July 2018

Total NCCP articles published
this week: 13

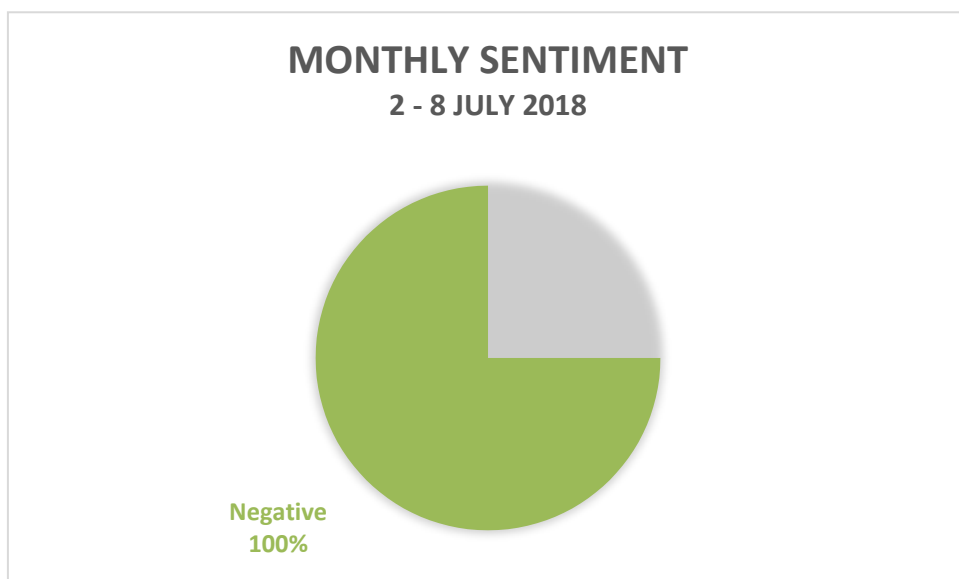
Total NCCP articles published
this month: 13

The below pie chart illustrates the number of articles and the general 'sentiment' for the National Carp Control Plan, for the week and for the month. For more on how to read the chart, see below.

Number of Articles and Sentiment in media – this week



Number of Articles and Sentiment in the media – month (July)



Number of Articles and Sentiment in media – this week

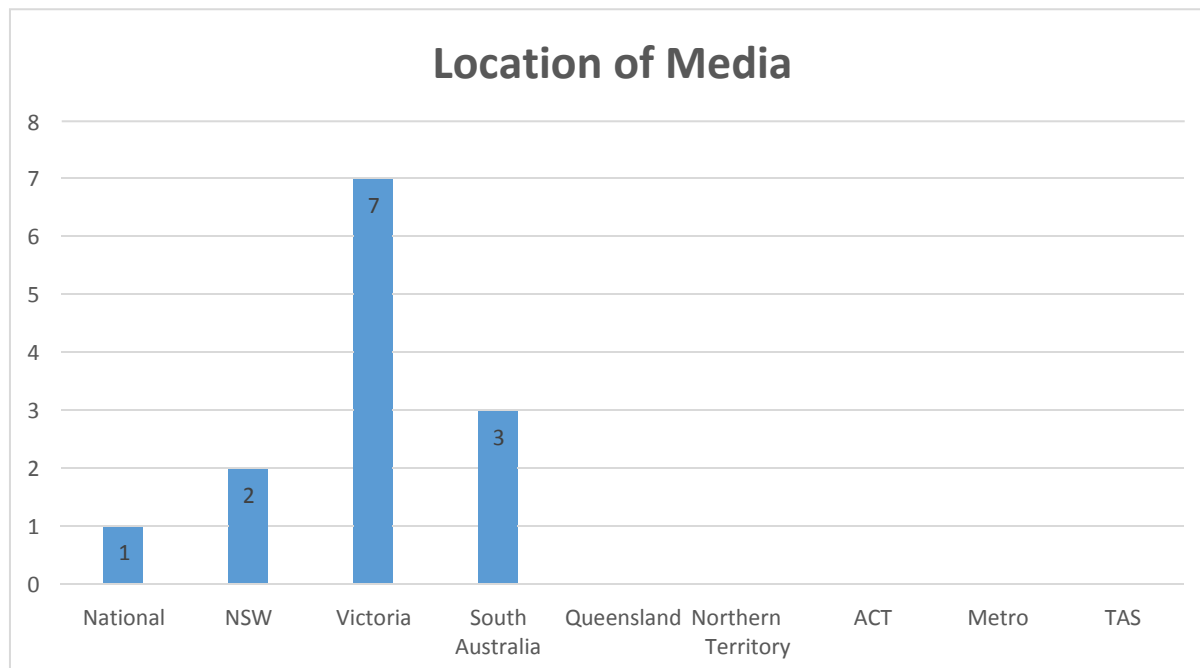
- In the period 2 - 8 July, the National Carp Control Plan received coverage in one print article and 12 radio pieces.
- All items were mostly negative in sentiment. As the majority of these items were radio pieces and we don't have access to the audio from the radio pieces, sentiment was judged on on Mediaportal media briefings that are sent via email.
- The majority of radio pieces that aired related to Isabella Pittway's ABC stakeholder and research feature. See below:
 - 06 Jul 2018 6:16AM • ABC Gippsland, Sale (Rural Report) – 4mins, 14 secs
 - 06 Jul 2018 6:22AM • ABC Ballarat, Ballarat (Breakfast) – 4 mins, 10 secs
 - 06 Jul 2018 12:38PM • ABC Ballarat, Ballarat (Vic Country Hour) – 7 mins, 15 secs
 - 06 Jul 2018 6:16AM • ABC South East NSW, Bega (Rural Report) - 4 mins, 7 secs
 - 06 Jul 2018 3:22PM • ABC Radio Australia (Asia Pacific), Sydney (Pacific Beat) - 3 mins, 48 secs
 - 06 Jul 2018 6:12PM • ABC Ballarat, Ballarat - 4 mins, 49 secs
- One print article featured in The Weekly Times and was written by Natalie Kotsios.

Number of Articles and Sentiment in media – month

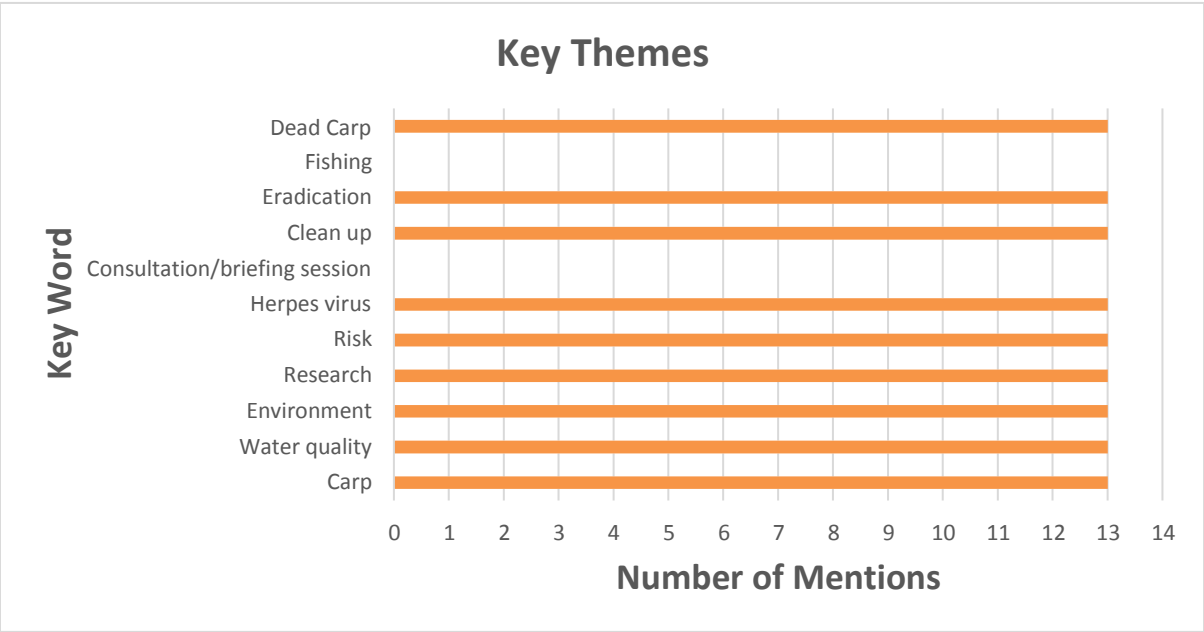
- This month (July), NCCP has received coverage in 13 articles.

Location of Media - week

- The below chart identifies in what state the articles appear – they are broken down in to state (individual), national or metro locations.



Key themes/messages in media – this week



2 In the various articles monitored this week the key themes were dead carp, research, water quality, environment, eradication, research, risk, carp and clean up. Although the theme may be mentioned more than once in the article, this is only captured once to show what the key theme in the article was. An article may have more than one key theme.



04 Jul 2018

Weekly Times, Melbourne

Author: Natalie Kotsios • Section: General News • Article Type: News Item

Audience : 50,808 • Page: 4 • Printed size: 124.00cm² • Market: VIC • Country: Australia

ASR: A110 1 419 • Words: 784 • Item ID: 977493185

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Control on carp called out

By NATALIE KOTSIOS

A BRITISH scientist has accused researchers at the National Carp Control Plan of disrespecting the wider scientific community and misleading the public.

In an extraordinary attack, University of East Anglia's Jackie Lighten — who last year first raised concerns with Australia's plans to use a virus to wipe out carp — told a Senate hearing the NCCP regularly “drag through the mud” any scientist that disagrees with them.

“They’ve consistently told the media and the Senate that I personally have an ulterior motive, that somehow I’m biased, I have a vendetta against them, so all the scientific points that have been published or made against them should be ignored,” Dr Lighten said.

Dr Lighten volunteered the comments unprompted; Senator Barry O’Sullivan has asked him to provide evidence of his statements to the Senate committee.

A letter available online — which appears to have been uploaded by Dr Lighten — from Fisheries Research and Development Corporation director Patrick Hone to the Senate states Dr Lighten wrote to CSIRO in 2016 asking to collaborate on research into the virus, but was declined. Dr Lighten later wrote to advise senators he wanted to take part to offer a counterinterview.

NCCP co-ordinator Matt Barwick would not comment on Dr Lighten’s personal remarks, but said it was critical that focus remained on “the issues, the science, the evidence” and that they encouraged experts from different disciplines to bring their concerns forward. “This hasn’t been done in the world before, that means we need to take a careful considered approach,” he said.

“In the process of research you identify things you didn’t know you didn’t know — we’ve identified a few knowledge gaps and we’re in the process of looking at that now.”



National Carp Control Plan – Weekly Media Report

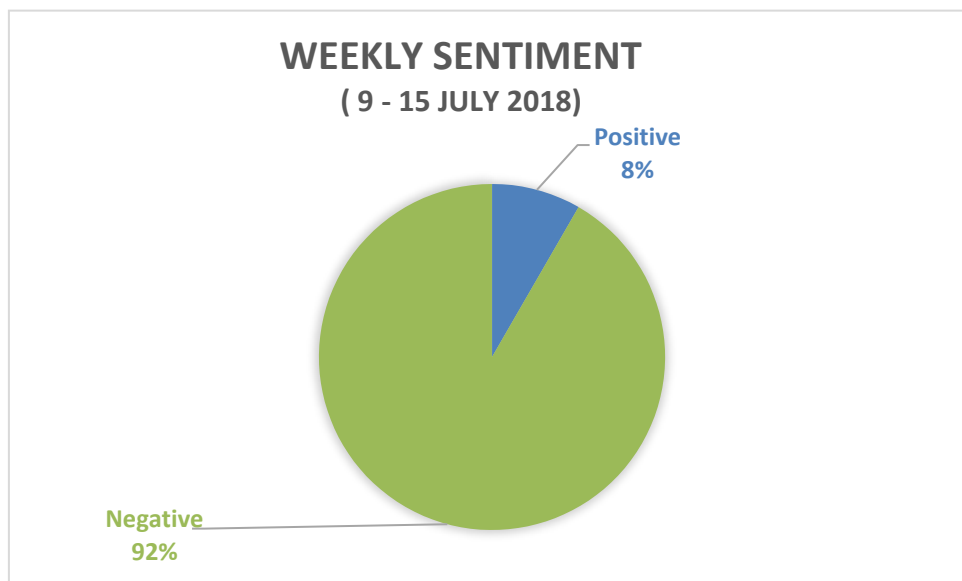
9 - 15 July 2018

Total NCCP articles published
this week: 11

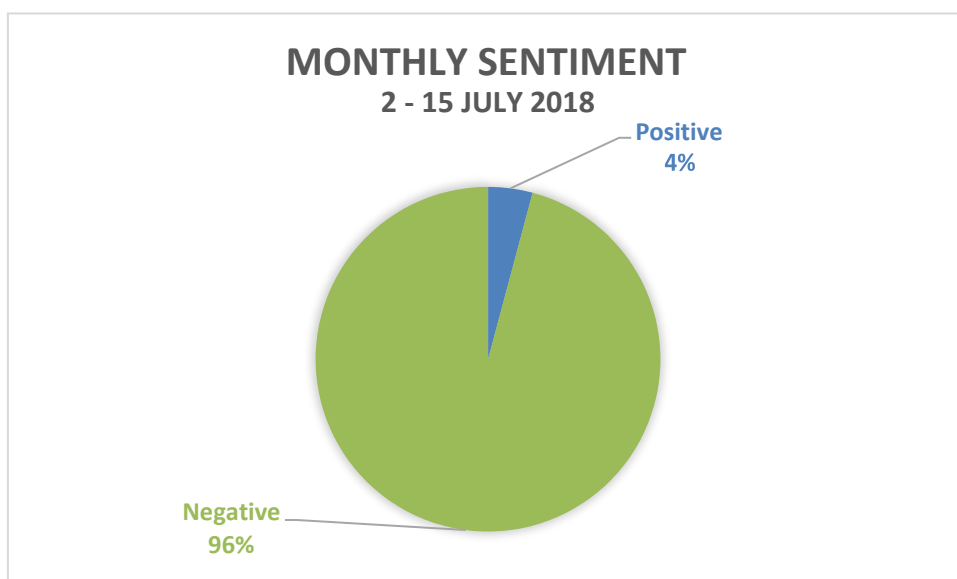
Total NCCP articles published
this month: 24

The below pie chart illustrates the number of articles and the general 'sentiment' for the National Carp Control Plan, for the week and for the month. For more on how to read the chart, see below.

Number of Articles and Sentiment in media – this week



Number of Articles and Sentiment in the media – month (July)



Number of Articles and Sentiment in media – this week

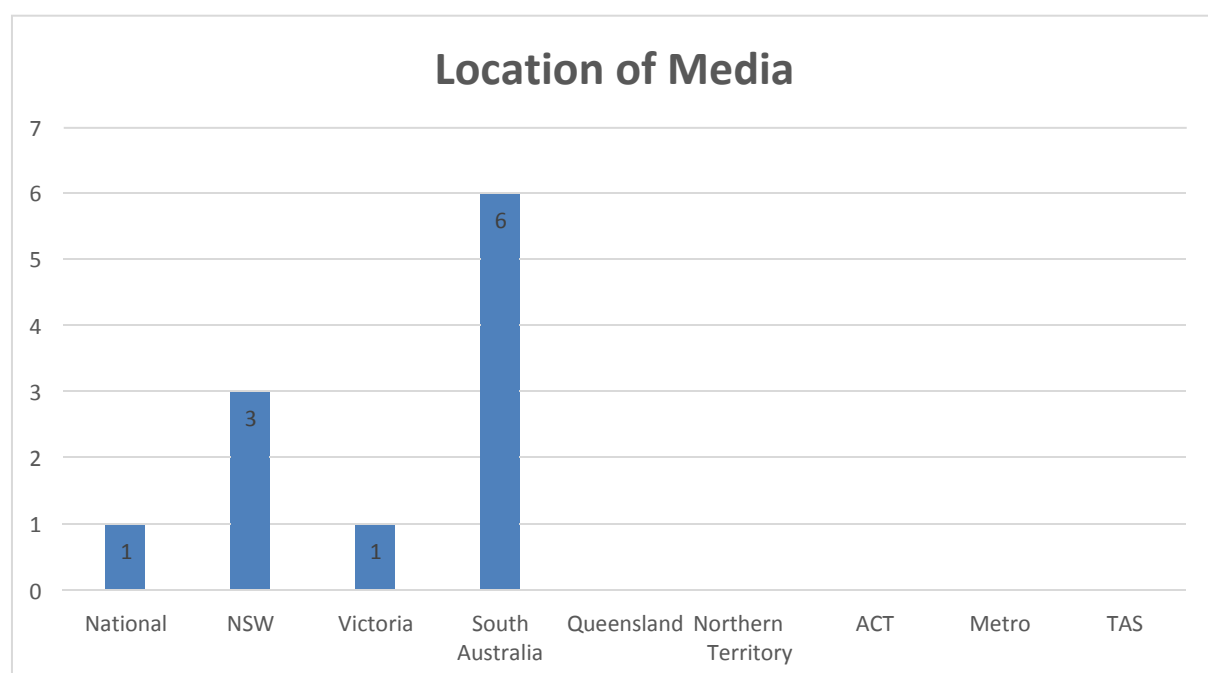
- ☐ In the period 9 - 15 July, the National Carp Control Plan received coverage in one print article and 10 radio pieces.
- All items were mostly negative in sentiment. As majority of these items were radio pieces and we don't have access to the radio pieces, sentiment was judged based on Mediaportal media briefings that are sent via email.
- Majority of radio pieces aired related to an ABC news piece concerning Jonathan Marshall's recent comments on the plan requiring more funding and a deadline extension.
- ☐ One print article featured in the Adelaide Advertiser and was written by Tory Shepherd.

Number of Articles and Sentiment in media – month

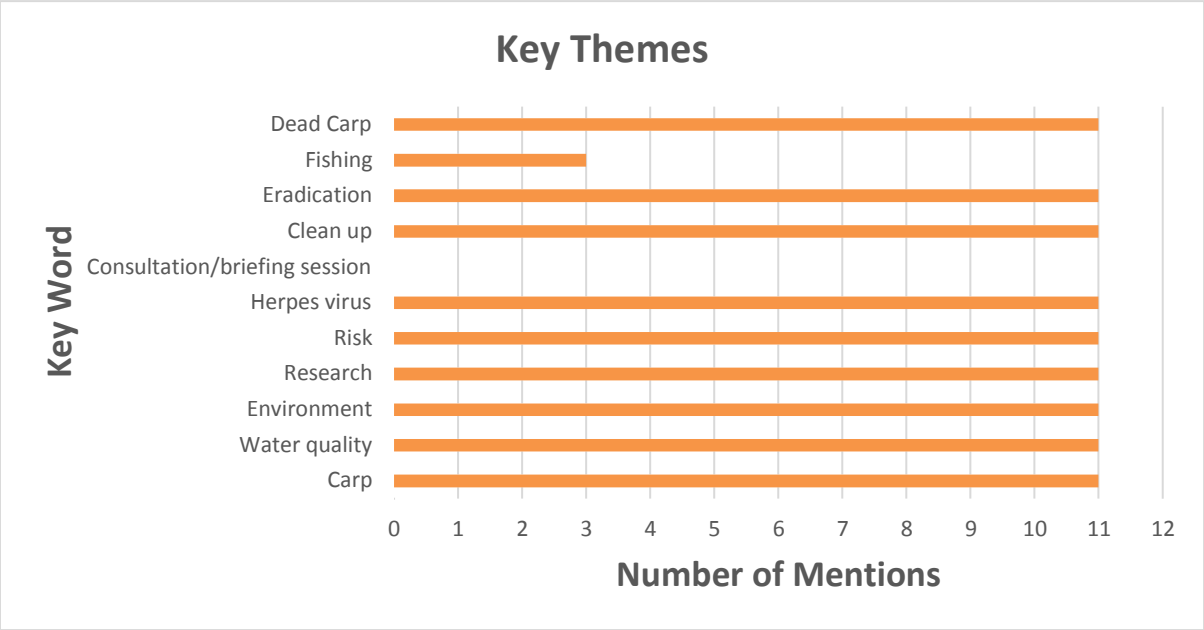
- ☐ This month (July), NCCP has received coverage in 24 articles.

Location of Media - week

- The below chart identifies what state the articles appear – they are broken down in to state (individual), national or metro locations.



Key themes/messages in media – this week



2 In the various articles monitored this week the key themes were dead carp, research, water quality, environment, eradication, research, risk, carp and clean up. Although the theme may be mentioned more than once in the article, this is only captured once to show what the key theme in the article was. An article may have more than one key theme.



12 Jul 2018
Adelaide Advertiser: Adelaide

Author: Tory Shepherd • Section: General News • Article Type: News Item
Audience : 112,097 • Page: 15 • Printed size: 384.00cm² • Market: SA
Country : Australia • ACP: AUD 5.740 • number: 888 • Item ID: 888788740

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Scientists condemn carp-killer herpes plan

TORY SHEPHERD
STATE EDITOR

KILLING tonnes of carp in the Murray will turn the water into a sewage-like sludge as they bleed profusely, die and rot, scientists have told Parliament.

A range of experts have spoken out against the audacious plan to give the pest herpes, a mass culling that could result in hundreds of thousands of tonnes of rotting fish.

The invasive species is wrecking water quality in the Murray and threatening native fish. Former Water Minister Barnaby Joyce announced the National Carp Control Plan would consider giving them a deadly herpes virus and those working on the plan are researching how to remove and make use of the corpses.

Federal senators have heard from a range of experts in Canberra who think there will be unintended consequences.

Queensland scientist Dr Jonathan Marshall – appearing in a private capacity – said some dead fish would float,

some would sink, but they'd all decompose and that was a pro-

cess that would strip the water of oxygen.

UK biological scientist Dr Jackie Lighten said they would “profusely leak blood” and referred to research that shows the quality of the water “would be comparable to sewage in terms of the levels of different nutrients in the water”.

Dr Richmond Loh, a veterinary pathologist and past president of World Aquatic Veterinary Medical Association, said the process would produce botulism that could spread through the water, and that cattle were highly susceptible to botulism through the food chain. Coorong ecologist Faith Coleman said haemorrhagic E. coli would pose a danger to humans.

The NCCP has previously responded to similar claims, saying they are aware of the concerns and are shaping the ongoing research around those sorts of questions.

The program managers said they welcome robust discussion about the plan's processes and progress.

The Advertiser asked the NCCP for further comment.



12 Jul 2018
Adelaide Advertiser: Adelaide

Author: Tory Shepherd • Section: General News • Article Type: News Item
Audience : 112,097 • Page: 15 • Printed size: 384.00cm² • Market: SA
Country : Australia • ACP: AUD 5.740 • words: 220 • Item ID: 200700710

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ROTTING THREAT: European carp like these, if killed en masse, would become a huge threat to River Murray water quality and a danger to humans and livestock

National Carp Control Plan – Weekly Media Report

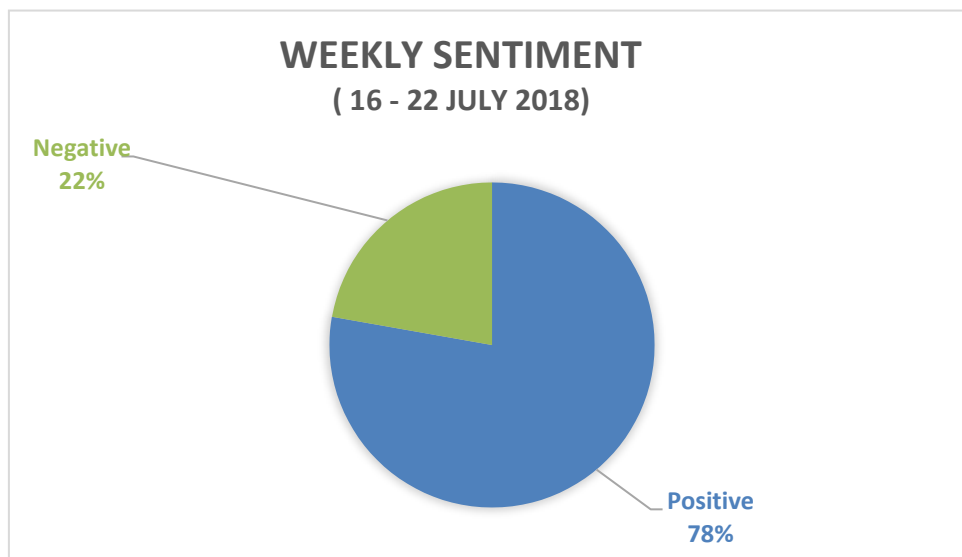
16 - 22 July 2018

Total NCCP articles published
this week: 18

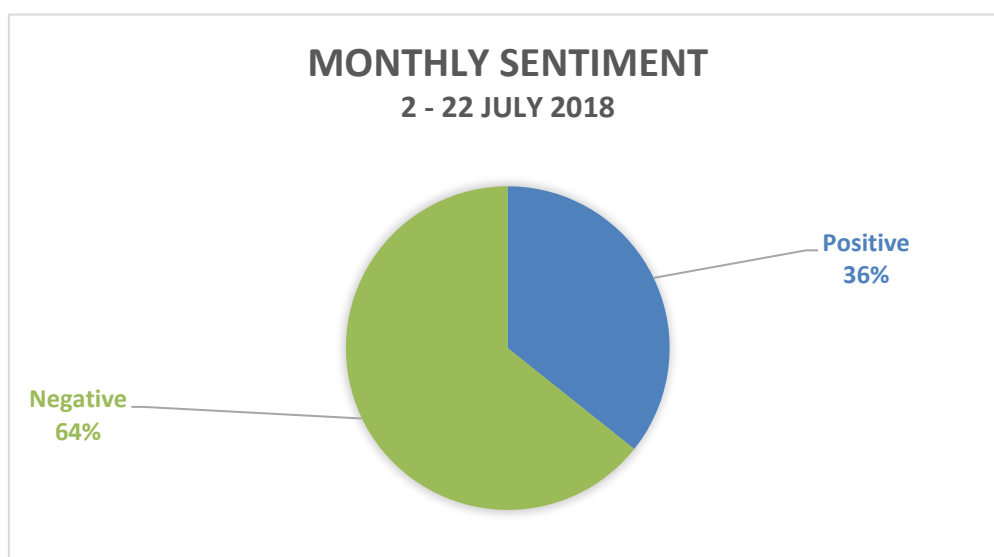
Total NCCP articles published
this month: 42

The below pie chart illustrates the number of articles and the general 'sentiment' for the National Carp Control Plan, for the week and for the month. For more on how to read the chart, see below.

Number of Articles and Sentiment in media – this week



Number of Articles and Sentiment in the media – month (July)



Number of Articles and Sentiment in media – this week

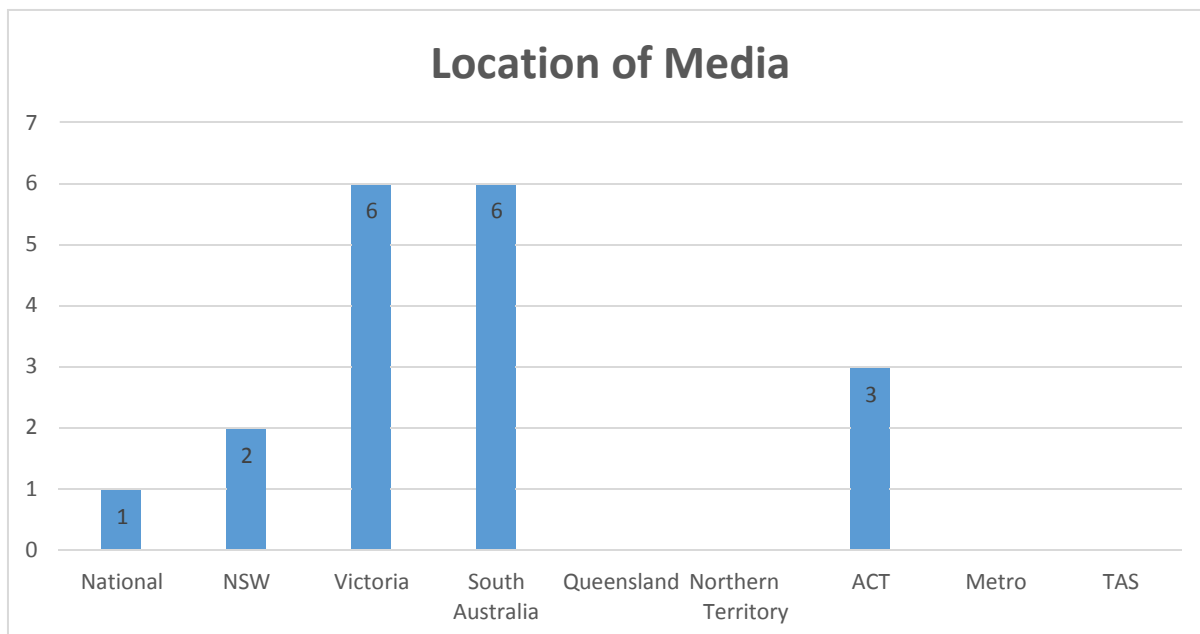
- ☐ In the period 16 - 22 July, the National Carp Control Plan received coverage in nine radio pieces, eight print articles and one online feature.
- All items were mostly positive in sentiment. As majority of these items were radio pieces and we don't have access to the radio pieces, sentiment was judged based on Mediaportal media briefings that are sent via email.
- ☐ Majority of radio pieces aired on ABC and were in line the recently shared media release sent mid last week.
- Majority of print newspaper articles monitored this week were also in line with last week's media release. Print articles can be referenced following the report.
- ☐ Media release related radio, print and online pieces and mentions:
 - 17 Jul 2018 5:41PM - Interview with Matt Barwick - ABC Mid North Coast - Fiona Wyllie - FM Radio NSW
 - 18 Jul 2018 - Carp control findings surprise -Bendigo Advertiser-Newspaper VIC
 - 18 Jul 2018 – Fetid fish make fine fertiliser, says River Murray's 'Carpinator' – Adelaide Advertiser – Tory Shepherd – Newspaper SA
 - 18 Jul 2018 - Carp hold surprises - Sunraysia Daily - Newspaper NSW
 - 18 Jul 2018 5:11PM - Interview with Matt Barwick - 2CC, Canberra - AM Radio ACT
 - 18 Jul 2018 2:45PM - Interview with National Carp Control Plan coordinator ABC Radio Canberra - Anna Vidot - AM Radio ACT
 - 18 Jul 2018 12:44PM - Pre-recorded Interview with Matt Barwick - ABC Eyre Peninsula and West Coast - AM Radio SA
 - 18 Jul 2018 8:50AM - Interview with Matt Barwick, National Coordinator ABC Goulburn Murray, Wodonga - AM Radio VIC
 - 18 Jul 2018 6:15AM - Report by Tom Nancarrow - ABC South East SA - Tom Nancarrow - AM Radio SA
 - 18 Jul 2018 - Research delivers interesting (and unexpected) findings - Dimboola Banner – Newspaper VIC
 - 19 Jul 2018 8:11AM - National Carp Control Plan research delivering interesting result fishingworld.com.au
 - 19 Jul 2018 - Carp control plan contains a few surprises- Corryong Courier – Newspaper VIC
- ☐ Majority of media pieces monitored were located in Victoria and South Australia.

Number of Articles and Sentiment in media – month

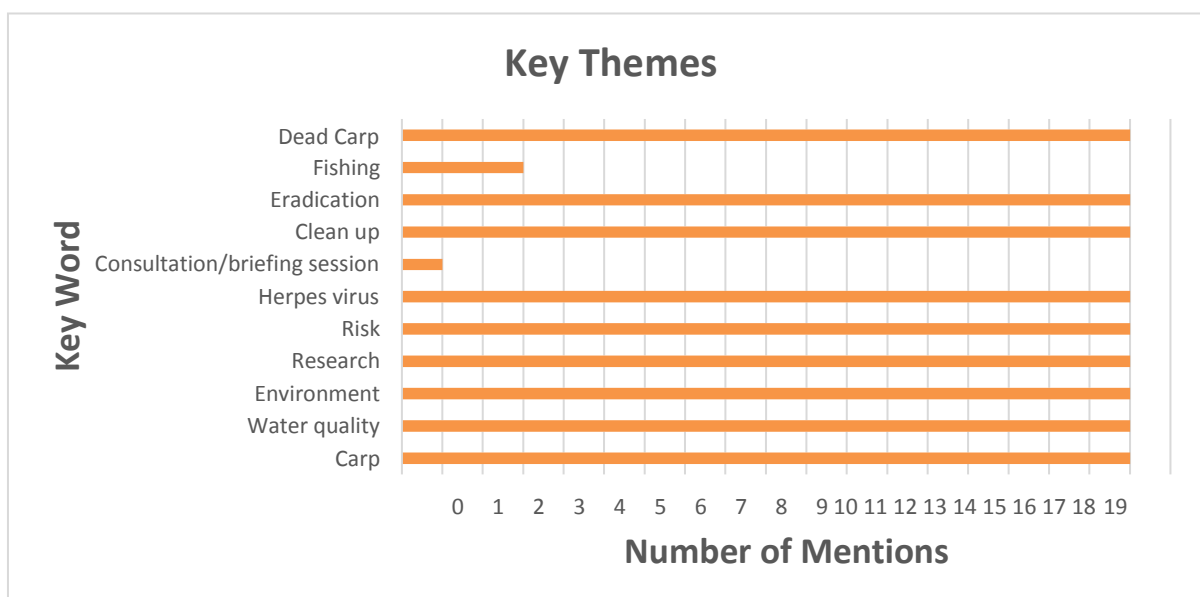
- ☐ This month (July), NCCP has received coverage in 42 articles.

Location of Media - week

- The below chart identifies what state the articles appear – they are broken down in to state (individual), national or metro locations.



Key themes/messages in media – this week



- 2 In the various articles monitored this week the key themes were dead carp, herpes virus, research, water quality, environment, eradication, research, risk, carp and clean up. Although the theme may be mentioned more than once in the article, this is only captured once to show what the key theme in the article was. An article may have more than one key theme.



18 Jul 2018

Bendigo Advertiser, Bendigo VIC

Section: General News • Article Type: News Item • Audience : 7,509 • Page: 12
Printed size: 81.00cm² • Market: VIC • Country: Australia • ASR: AUD 10 • words: 144
Item ID: 000000000

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Carp control findings surprise

AT ITS halfway point, findings are beginning to come to light from the National Carp Control Plan's research program.

Researchers have been particularly interested to find the amount of carp varies significantly throughout Australia.

Scientists found this out while trying to determine the total tonnage, or 'biomass,' of carp throughout Australia.

Wetland habitats, floodplains, and areas downstream of dams and weirs are areas where researchers have seen particularly high density of carp.

The research to date has been a critical part of developing a potential strategy for releasing herpesvirus as a bio-control method.

The NCCP's national coordinator Matt Barwick says the research is critical in creating an effective management plan for carp.

"What that means is that this as a virus, as a bio-control agent, might be able to be used in a far more targeted manner than we first thought," he said.



18 Jul 2018
Sunraysia Daily, Mildura VIC

Section: General News • Article Type: News Item • Audience : 5,535 • Page: 8
Printed size: 540.00mm • Market: VIC • Country: Australia • ASR: AUD 1,666
Metadata ID: 000000717

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Carp hold surprises

WITH the National Carp Control Plan (NCCP) research program now more than halfway through, some interesting, and at times unexpected, findings are beginning to emerge.

Over the past 18 months, Australia's leading universities, research institutions and expert organisations have been working to deliver independent and rigorous science to inform development of a plan for the control of carp in Australia, including the possible release of the carp virus CyHV-3.

NCCP national co-ordinator Matt Barwick said the issue of carp control in Australia had prompted widespread discussion and debate, with many valid points raised by stakeholders and the wider community, and sharing some of the early lessons from the research would contribute to the discussion.

"While all research will go through an extensive independent peer-review process before being included in the final plan and made public, the NCCP is able to start sharing some of the insights emerging from the program, which will help to address gaps in knowledge and future decision-making," Mr Barwick said.

"The NCCP welcomes robust discussion as it ensures a thorough investigation of concerns can be undertaken.

"Insights into our learnings will not only inform this debate, but help direct our ongoing research efforts.

"In terms of progress, it's exciting to receive incoming data to help us learn

more about the prospects for potentially controlling carp in Australia safely and effectively."

Mr Barwick said one of the common concerns raised by stakeholders was that more time was needed to review the research findings and ensure the right recommendations were made in relation to carp control.

"This is an important consideration for our nation, and one that must deliver long term improvements to our waterways," he said.

"If an extension is needed, as we're discovering, then we will seek to secure more time.

"It is important to remember no decision has been made in relation to carp control, or the possible release of the carp virus."



18 Jul 2018
Sunraysia Daily, Mildura VIC

Section: General News • Article Type: News Item • Audience : 5,535 • Page: 8
Printed size: 540.00mm • Market: VIC • Country: Australia • ASR: AUD 1,666
Product ID: 000000717

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WHAT THE SCIENCE IS DOING

- **There are larger than expected carp biomass variations:** With on-ground fieldwork to estimate carp biomass in different habitats using electrofishing, mark-recapture, fyke netting and surveying of environmental DNA now complete, summary statistics indicate that carp density varied considerably between sample locations. Carp biomass in some sites sampled revealed carp biomass below, and some well above, the threshold at which ecological impacts occur as a result of carp.
- **Investigations continue into virus spread:** With mortality rates from the carp virus understood to be strongly influenced by multiple factors including water temperature, virus concentration and carp schooling behaviour, computer modelling points to few highly specific scenarios in which biocontrol may result in high levels of carp knock-down. These investigations have highlighted a need to further understand exactly how the

carp virus is likely to spread from one fish to another.

- **Decomposition has no impact on fertiliser quality:** A recent commercial-scale trial into alternative uses for carp biomass found that highly decomposed carp were still usable for producing high-quality fertiliser. Further, opportunities exist for processing carp waste on-site, limiting need for transport or storage, thereby helping keep costs low.
- **Research into dead carp impacts on water quality is ongoing:** While research by Australian National University scientists has confirmed that the carp virus cannot infect humans, several separate and additional investigations are under way to understand how dead carp might affect different aspects of water quality. A systematic and quantitative risk assessment project is also exploring different areas of ecological and social risk.



National Carp Control Plan co-ordinator Matt Barwick says research findings on the plan so far have sometimes been unexpected.



18 Jul 2018
Adelaide Advertiser, Adelaide

Author: Tory Shepherd • Section: General News • Article Type: News Item
Audience : 112,097 • Page: 14 • Printed size: 117.00cm² • Market: SA
Country: Australia • MDD: AUD 1 740 • number: 225 • Item ID: 222122711

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Fetid fish make fine fertiliser, says River Murray's 'Carpinator'

TORY SHEPHERD
STATE EDITOR

nes of dead fish being able to be used commercially.

While a range of scientists have been highly critical of the herpes proposition, Mr Barwick's perspective is that "robust discussion" is welcome and ongoing research should help to answer some concerns.

Additional trials are needed to better predict how the disease will spread and there are several investigations underway to work out how the dead fish might affect water quality. "It is important to remember no decision has been made in relation to carp control or

the possible release of the carp virus," Mr Barwick said.

"The NCCP is designed to enable risks to be identified and explore ways to manage them."

Meanwhile an independent review of salinity in the Murray-Darling has found that the

Murray-Darling Basin Plan is working to reduce salt in the water, hitting key targets at Morgan in SA for the eighth year in a row.

The report said high rainfall in 2016 had helped reduce salinity, while there are still ongoing challenges.

EVEN highly decomposed

carp can still make excellent fertiliser, the man dubbed the "Carpinator" has found.

Matt Barwick, the co-ordinator of the National Carp

Control Plan, has released his initial findings on the plan to infect the invasive carp in the Murray-Darling with a deadly herpes virus.

The research has found decomposition has no impact on fertiliser quality, which increases the chances of the ton-



17 Jul 2018

Murray Valley Standard • Murray Bridge SA

Author: Peri Strathearn • Section: General News • Article Type: News Item

Audience: 2,153 • Page: 3 • Printed size: 225.00cm² • Market: SA • Country: Australia

ASR: A11D 500 • words: 383 • Item ID: 982808923

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Page 1 of 1

Experts worried about virus

BY PERI STRATHEARN

River Murray

THE Lower Murray could become a bloody mess filled with as many nutrients as sewage if the National Carp Control Plan (NCCP) goes ahead, scientists have told a parliamentary hearing in Canberra.

Six experts, including Coorong district ecologist Faith Coleman, expressed numerous concerns to the Senate committee responsible for overseeing the NCCP on June 25.

University of Exeter researcher Jackie Lighten said infected carp would "profusely" leak blood into the water under a plan to control the pest species' population using a herpes virus.

"There will be lots and lots of blood in the river," he said.

"The quality of the water of the Murray-Darling Basin, if this goes to plan, would be comparable to sewage in terms of the levels of different nutrients in the river."

Biologist Adrian Falconer said politics appeared to have influenced the NCCP's direction, to the detriment of the Lower Murray.

"While the impacts will be felt throughout Australia, the majority of any potential benefits will be delivered to upstream water users, while the majority of risks fall to those living in downstream communities: people al-

ready heavily impacted by disruption to our rivers, lakes and Coorong," he said.

If there were two million tonnes of carp in the river system and the virus killed 80 per cent of them, Mr Falconer said, there would be "very real dangers for total ecosystem loss".

"The rotting fish would consume more than four times the available dissolved oxygen in the water, with lethal impacts for other organisms sharing the water body," he said.

"Fifty per cent to 90pc of carp biomass would need to be removed within 48 hours

of death.

"Logistics render that prospect all but impossible."

The six experts also flagged flaws in some of the science underpinning the

NCCP, including work around the impact of dead carp on water quality and the likelihood of other species being infected. Ms Coleman said the NC-CP had to be delayed until more data became available, a point seconded by Queensland ecologist Jonathan Marshall.

"The problem isn't worsening ... likewise, I believe the potential of the herpes virus to act as a bio-control solution would not diminish if the decision timeframes were extended," Dr Marshall said. "There's no rush."

A draft plan is due to be released this month.



20 Jul 2018
Northern Star, Lismore NSW

Author: Barry Cooder • Section: General News • Article Type: News
Audience : 6,950 • Page: 30 • Printed size: 471.00cm² • Market: NSW

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It's time to address the crux of the carp problem

SNAGGED

with Barry Cooder

IT'S taken a long while for me to get to grips with the koi carp herpes virus, so to speak.

I've never been one to jump on bandwagons or take statements at face value.

I try to find out as much as I can about an issue as serious as this one.

I first encountered European carp in the late 1970s on the Murrumbidgee River below Burrinjuck Dam.

We approached the river at Chindolah with high hopes of our usual brown and rainbow trout, Murray cod, golden perch and redfin.

We met uncountable carp in every muddy pool and caught other species only in the runs and rapids between pools.

A later cod expedition through the Murray's redgum forests around Gunbower Island showed just how severe the carp plague could be.

In the mid-1980s, I heard about some dickheads releasing Euro carp into Horseshoe Lagoon at Casino for "sport" and, about the same time, we had an unregulated runoff from a koi breeding pond at Knockrow that spewed fingerlings into the Emigrant Creek system.

Together with the "liberation" of pet goldfish into the local waterways over the years, this triple whammy of carp species on the Richmond flood-plain took off in river water compromised by low pH, high turbidity and ever more regular crashes in dissolved oxygen.

News eight or nine years ago that a koi herpes virus had the potential to wipe out carp looked like the silver bullet that our waterways needed.

CSIRO led the charge, headed by the same people who handled the rabbit calicivirus.

Koi herpes tests on 13 species of native fish, reptiles, mice and chickens produced no ill-effects, leading the CSIRO to conclude that this family of herpes was species-specific.

Things gradually gained momentum until Barnaby Joyce's weird "Caaarp!" speech in the House of Rep-

resentatives in 2016 and his appointment of "The Carpinator", Matt Barwick, an environmental science graduate from the University of Canberra and Federal and State fisheries bureaucrat and consultant.

Earlier this year, before they'd tied up Barnaby underneath the tank-stand after he'd slipped the leash and gone mad, everything was meant to be good to go in the "caarp" world by this December.

The plan was to release the virus into the Lachlan River, from where it was to spread via water and birds throughout the Murray-Darling Basin within months.

After an incubation period of up to a week, it takes around a day for a fish to suffocate and die due to gill damage.

But in his May update, Carpinator Barwick wrote: "The NCCP was set an initial deadline of December 2018 to deliver recommendations to governments. While we still have six months remaining, I want to assure you that deadlines will not shape outcomes."

More time was needed to review research, people were telling him.

So it may well be that the plan will not run headlong to a release date next year – let's hope not, anyway.

This is way too irreversible to let politicians decide.

CSIRO has made soothing noises when questions arise concerning the almost overnight appearance of an estimated 55,000 tonnes of dead carp in NSW rivers and drinking-water reservoirs but there have been widespread doubts about these issues.

Once the virus is released it can't be removed – but not every carp will die.

Estimates are that within 10 years the virus-resistant fish will breed back up to 60% of the current population and the CSIRO is already planning for more virulent virus strains.

Barwick says getting rid of carp will create a window, before they breed back up, to improve river health and native fish stocks to prevent carp re-establishing domination of the system.

The project in its present form is

costed at \$15 million.

What do we get for that?

The water is still likely to be muddy.

Studies show no links of carp with changes in turbidity, which are mainly associated with water level changes, local runoff and surrounding land use practices.

The CSIRO says: "The release of the carp herpes virus will also provide an opportunity to simultaneously restore native fish habitats, improve water quality and restore migratory pathways for native fish, to help ensure that native fish thrive once carp are removed. This, in turn, will help ensure that carp numbers don't recover."

But that's not part of the \$15 million and doesn't address the crux of the problem.

Two of the foremost aquatic veterinarians in the country have separately suggested that we're putting the cart before the horse.

West Australian aquatic vet and veterinary pathologist Dr Richmond Loh, and Northern Rivers fish vet Dr Matt Landos, both pose the question: are carp and goldfish a cause – or the effect – of environmental degradation?

They suggest carp are proliferating and native species are declining because of pollution and habitat alteration (eutrophication, salinisation, acidification, land clearing, draining), in-stream barriers, and water abstraction (surface and ground water, legal and illegal).

Locally, the effect of the koi herpes virus on the koi/goldfish/euro carp hybrids that proliferate here is an unknown quantity.

It kills euros and koi but not goldfish, and when Barwick held the Lismore meeting of his national carp roadshow earlier this year, he was noncommittal on its local effectiveness.



20 Jul 2018
Northern Star, Lismore NSW

Author: Barry Cooder • Section: General News • Article Type: News
Audience : 6,950 • Page: 30 • Printed size: 471.00cm² • Market: NSW
Country: Australia • ISSN: 1441-1008 • AID: 424 • Number: 225 • Item ID: 224416774

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Page 2 of 2



VEXED QUESTION: European carp are a huge problem in many Australian waterways.

Photo: File



19 Jul 2018

Corryong Courier, Corryong VIC

Section: General News • Article Type: News Item • Audience : 1,200 • Page: 7

Printed size: 125.00cm² • Market: VIC • Country: Australia • ASR: AUD 57 • words: 308

Item ID: 984010097

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Page 1 of 1

Carp control plan contains a few surprises

The National Carp Control Plan (NCCP) research has been delivering some interesting and unexpected findings.

With the Control Plan's (NCCP) research program now over half way through firm findings are beginning to emerge.

Over the past 18 months, Australia's leading universities, research institutions and expert organisations have been working to deliver independent and rigorous science to inform development of a plan for the control of carp in Australia, including the possible release of the carp virus (CyHV-3).

NCCP National Coordinator Matt Barwick says that the issue of carp control in Australia has prompted widespread discussion and debate, with many valid points raised by stakeholders and the wider community, and that sharing some of the early lessons from the research will contribute to this important discussion.

"While all research will go through an extensive independent peer review process before being included in the final plan and made public, the NCCP is able

to start sharing some of the insights emerging from the program which will help to address gaps in knowledge and future decision making," says Mr Barwick.

Major findings include larger than expected carp biomass variations between sample locations and decomposition has no impact on fertiliser quality.

Investigations are also continuing into the development of a release strategy for the biological control of carp in the Murray Darling Basin.

With mortality rates from the carp virus understood to be strongly influenced by multiple factors including water temperature, virus concentration and carp schooling behaviour, computer modelling points to few highly specific scenarios in which biocontrol may result in high levels of carp knock-down.

These investigations have highlighted a need to further understand exactly how the carp virus is likely to spread from one fish to another.

Research into dead carp impacts on water quality is also ongoing. For more information go to <http://www.yoursay.carp.gov.au/>.



20 Jul 2018

Warracknabeal Herald, Warracknabeal VIC

Section: General News • Article Type: News Item • Audience : 1,964 • Page: 9

Printed size: 356.00cm² • Market: VIC • Country: Australia • ASR: AUD 119 • words: 913

Item ID: 984562314

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Page 1 of 1

Carp research delivering some LQWHUHVWLQJ (DQG XQH[SHFWHG) ÀQGLQJV

WITH the National Carp Control Plan's (NCCP) research program now over half way through, and some interesting, and at times XQH[SHFWHG, ÀQGLQJV DUH beginning to emerge.

Over the past 18 months, Australia's leading universities, research institutions and expert organisations have been working to deliver independent and rigorous science to inform development of a plan for the control of carp in Australia, including the possible release of the carp virus (CyHV-3).

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"While all research will go through an extensive independent peer review process before being included LQ WKH ÀQDO SODQ DQG PDGH

public, the NCCP is able to start sharing some of the insights emerging from the program which will help to address gaps in knowledge and future decision making," Mr Barwick said.

Here are a few examples of what the science is telling people

• Larger than expected carp biomass variations

[Project: A carp biomass estimate for eastern Australia] = LWK RQ-JURXQG ÀHOGZRUN to estimate carp biomass in different habitats using HOHFWRURÀVKLQI, PDUN-UHFDSDWXUH, fyke netting, and surveying of environmental DNA now complete, summary statistics indicate that carp density varied considerably between sample

locations, with carp biomass in some sites sampled revealing carp biomass below, and some well above, the threshold at which ecological impacts occur as a result of carp.

What this means: Identifying ZKHUH FDUS GHQVLW\ LQÀXHQFHV ecology is important for informing where priority areas lie.

This work will also critically inform water quality modelling and clean up strategies in different habitat types, if the carp virus is approved for release.

• Decomposition no impact on fertiliser quality

[Project: Assessment of options for utilisation of virus-infected carp]

A recent commercial scale trial into alternate uses for carp biomass found that highly decomposed carp were still usable for producing high quality fertiliser.

Further, opportunities exist for processing carp waste on-site, limiting need for transport or storage, thereby helping to keep costs low.

What this means: Carp biomass can be processed into fertiliser regardless of the state of decomposition. Other appropriate utilisation methods continue to be explored including composting and insect feed.

• Investigations continue into virus spread

[Project: Development of hydrological, ecological, and epidemiological modelling to inform a CyHV-3 release strategy for the biological control of carp in the Murray Darling Basin]

With mortality rates from the carp virus understood to EH VWURQJO\ LQÀXHQFHV E\ multiple factors including water temperature, virus concentration and carp

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These investigations have highlighted a need to further understand exactly how the carp virus is likely to spread IURPRQH ÀVK WR DQRWKHU.

What this means: Additional lab trials are required to investigate factors that may LQÀXHQFHV HIIHFWLYHQHV RI WKH virus as a biocontrol method in more detail.

• Research into dead carp impacts on water quality ongoing

[Project: Investigation of nutrient interception pathways to enable circumvention of cyanobacterial blooms following carp mortality events]

While research by Australian National University scientists KDV FRQÀPHG WKDW WKH FDUS virus cannot infect humans [Project: Cyprinid herpesvirus 3 and its relevance to humans], several separate and additional investigations are underway to understand how dead carp might impact on different aspects of water quality.

A systematic and quantitative risk assessment project is also exploring different areas of ecological and social risk.

What this means: While factors such as water movement and areas of high carp biomass can be used to identify potential clean-up hot spots, the NCCP acknowledges community concerns about water quality and is committed to providing greater understanding around water quality, and risk of bacteria and microorganisms causing secondary issues.

"The NCCP welcomes robust discussion as it ensures a thorough investigation of concerns can be undertaken. Insights into our learnings will

not only inform this debate, but help direct our ongoing research efforts," Mr Barwick said.

"In terms of progress, it's exciting to receive incoming data to help us learn more about the prospects for potentially controlling carp in Australia safely and effectively," he said. "One of the common concerns raised by stakeholders is that more time is needed to review the research ÀQGLQJV DQG HQVXUH WKH ULJKW recommendations are made in relation to carp control."

"This is an important consideration for our nation, and one that must deliver long term improvements to our waterways. If an extension is needed, as we're discovering, then we will seek to secure more time."

"It is important to remember no decision has been made in relation to carp control, or the possible release of the carp virus."

"The NCCP is designed to HQDEOH ULVNV WR EH LGHQWLÀHG DQG explore ways to manage them. This information will then inform the decision-making process."

"The Fisheries Research and Development Corporation (FRDC) is not involved in the actual decision-making itself, this will be made by governments."

"Our role is to deliver a comprehensive program of research and stakeholder engagement to inform the development of a plan to control carp in Australia."

To ensure that everyone is given the opportunity to share their thoughts and opinions about carp control, the NCCP has launched <http://www.yoursay.carp.gov.au/> which is a dedicated site where visitors can learn more about the work of the NCCP, leave comments or ask questions.



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FISHING WORLD

(/)

National Carp Control Plan research delivering interesting results

18 July 2018

☐ 0 Comments

WITH the National Carp Control Plan's (NCCP) research program now over half way through, some interesting, and at times unexpected, findings are beginning to emerge. Over the past 18 months, Australia's leading universities, research institutions and expert organisations have been working to deliver independent and rigorous science to inform development of a plan for the control of carp in Australia, including the possible release of the carp virus (CyHV-3).



The National Carp Control Plan is designed to enable risks to be identified and explore ways to manage them (image: Martin Auldlist).

NCCP National Coordinator Matt Barwick

says that the issue of carp control in Australia has prompted widespread discussion and debate, with many valid points raised by stakeholders and the wider community, and that sharing some of the early lessons from the research will contribute to this important discussion.

"While all research will go through an extensive independent peer review process before being included in the final plan and made public, the NCCP is able to start sharing some of the insights emerging from the program which will help to address gaps in knowledge and future decision making," says Mr Barwick.

Here are a few examples of what the science is telling us?

- **Larger than expected carp biomass variations**

[Project: A carp biomass estimate for eastern Australia]

With on-ground fieldwork to estimate carp biomass in different habitats using electrofishing, mark-recapture, fyke netting, and surveying of environmental DNA now complete, summary statistics indicate that carp density varied considerably between sample locations - with carp biomass in some sites sampled revealing carp biomass below, and some well above, the threshold at which ecological impacts occur as a result of carp.

What this means: Identifying where carp density influences ecology is important for informing where priority areas lie. This work will also critically inform water quality modelling and clean up strategies in different habitat types, if the carp virus is approved for release.

- **Decomposition no impact on fertiliser quality**

[Project: Assessment of options for utilisation of virus-infected carp]

A recent commercial scale trial into alternate uses for carp biomass found that highly decomposed carp were still usable for producing high quality fertiliser. Further, opportunities exist for processing carp waste on-site, limiting need for transport or storage, thereby helping to keep costs low.



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adlink/5422.1/3599556/594234/170/AdId=10507047;Bn78e5-11e8-8934-40a8f0267e74;itime=319460732;gdpr=0;)

What this means: Carp biomass can be processed into fertiliser regardless of the state of



(<http://adserver.adtechus.com/?adlink/5422.1/3599564/594234/170/AdId=10507048;Bn78e5-11e8-8934-40a8f0267e74;itime=319460093;gdpr=0;>);

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decomposition. Other appropriate utilisation methods continue to be explored including composting and insect feed.

- **Investigations continue into virus spread**

[Project: Development of hydrological, ecological, and epidemiological modelling to inform a CyHV-3 release strategy for the biological control of carp in the Murray Darling Basin]
With mortality rates from the carp virus understood to be strongly influenced by multiple factors including water temperature, virus concentration and carp schooling behaviour, computer modelling points to few highly specific scenarios in which biocontrol may result in high levels of carp knock-down. These investigations have highlighted a need to further understand exactly how the carp virus is likely to spread from one fish to another. *What this means: Additional lab trials are required to investigate factors that may influence effectiveness of the virus as a biocontrol method in more detail.*

- **Research into dead carp impacts on water quality ongoing**

[Project: Investigation of nutrient interception pathways to enable circumvention of cyanobacterial blooms following carp mortality events]
While research by Australian National University scientists has confirmed that the carp virus cannot infect humans *[Project: Cyprinid herpesvirus 3 and its relevance to humans]*, several separate and additional investigations are underway to understand how dead carp might impact on different aspects of water quality. A systematic and quantitative risk assessment project is also exploring different areas of ecological and social risk.
What this means: While factors such as water movement and areas of high carp biomass can be used to identify potential clean-up hot spots, the NCCP acknowledges community concerns about water quality and is committed to providing greater understanding around water quality, and risk of bacteria and microorganisms causing secondary issues.

"The NCCP welcomes robust discussion as it ensures a thorough investigation of concerns can be undertaken. Insights into our learnings will not only inform this debate, but help direct our ongoing research efforts," Mr Barwick says, "In terms of progress, it's exciting to receive incoming data to help us learn more about the prospects for potentially controlling carp in Australia safely and effectively."

"One of the common concerns raised by stakeholders is that more time is needed to review the research findings and ensure the right recommendations are made in relation to carp control. This is an important consideration for our nation, and one that must deliver long term improvements to our waterways. If an extension is needed, as we're discovering, then we will seek to secure more time."

"It is important to remember no decision has been made in relation to carp control, or the possible release of the carp virus. The NCCP is designed to enable risks to be identified and explore ways to manage them. This information will then inform the decision-making process. The Fisheries Research and Development Corporation (FRDC) is not involved in the actual decision-making itself – this will be made by governments. Our role is to deliver a comprehensive program of research and stakeholder engagement to inform the

development of a plan to control carp in Australia."



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(<http://adserver.adtechus.com/?adlink/5422.1/3599559/594234/170/AdId=10520034;Bn78e5-11e8-8934-40a8f0267e74;itime=319461490;gdpr=0;>)

(<http://adserver.adtechus.com/?adlink/5422.1/3599558/594234/0/AdId=-3;BnId=0;guid=78e5-11e8-8934-40a8f0267e74;itime=319461855;gdpr=0;>)

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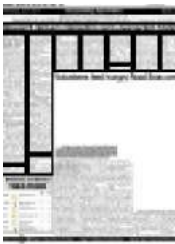
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18 Jul 2018

Dimboola Banner, Dimboola VIC

Section: General News • Article Type: News Item • Audience : 800 • Page: 1

Printed size: 344.00cm² • Market: VIC • Country: Australia • ASR: AUD 92 • words: 924

Item ID: 983619172

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5HVHDFK GHOLYHUV LQWHUHVWLQJ (DQG XQH[SHFWHG) ÀQGLQJV

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NCCP National Coordinator Matt Barwick says that the issue of carp control in Australia has prompted widespread discussion and debate, with many valid points raised by stakeholders and the wider community, and that sharing some of the early lessons from the research will contribute to this important discussion.

"While all research will go through an extensive independent peer review process before being included LQ WKH ÀQDO SODQ DQG PDGH public, the NCCP is able to start sharing some of the insights emerging from the program which will help to address gaps in knowledge and future decision making," says Mr Barwick.

Here are a few examples of what the science shows

-Larger than expected carp biomass variations

[Project: A carp biomass estimate for eastern Australia] ÌLWK RQ-JURXQG ÀHOGZRUN to estimate carp biomass in different habitats using HOHFWURÁVKLQJ, PDUN-UHFDVXUH, fyke netting, and surveying of environmental DNA now complete, summary statistics indicate that carp density varied considerably between sample locations - with carp biomass in some sites sampled revealing carp biomass below, and some well above, the threshold at which ecological impacts occur as a result of

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To ensure that everyone is given the opportunity to share their thoughts and opinions about carp control, the NCCP has launched <http://www.yoursay.carp.gov.au/> – a dedicated site where visitors can learn more about the work of the NCCP, leave comments or ask questions.

National Carp Control Plan – Weekly Media Report

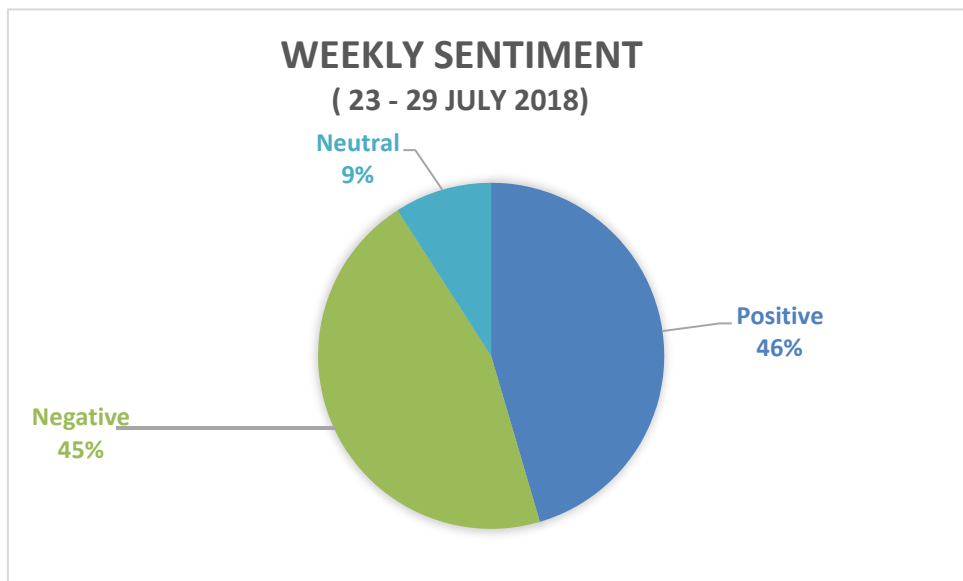
23 - 29 July 2018

Total NCCP articles published
this week: 11

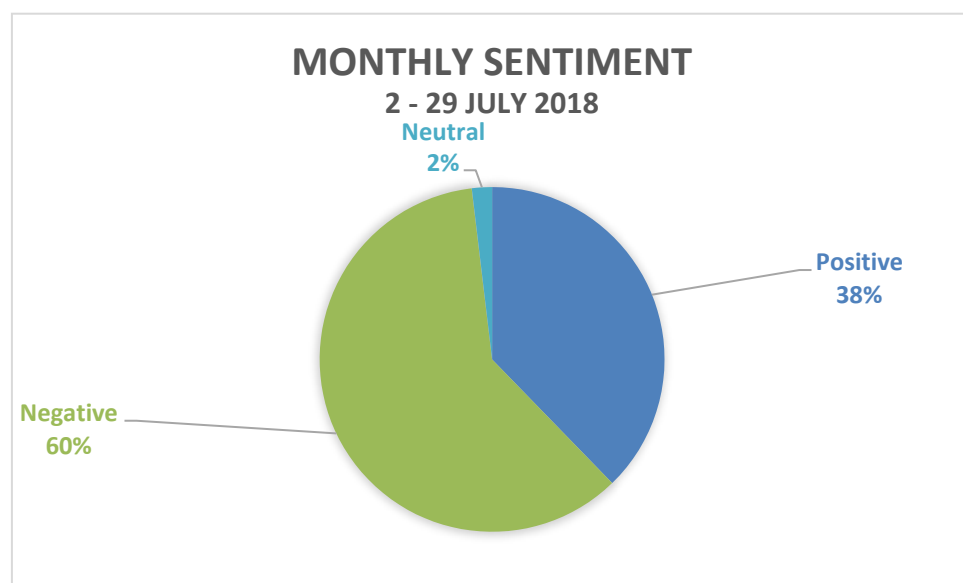
Total NCCP articles published
this month: 53

The below pie chart illustrates the number of articles and the general 'sentiment' for the National Carp Control Plan, for the week and for the month. For more on how to read the chart, see below.

Number of Articles and Sentiment in media – this week



Number of Articles and Sentiment in the media – month (July)



Number of Articles and Sentiment in media – this week

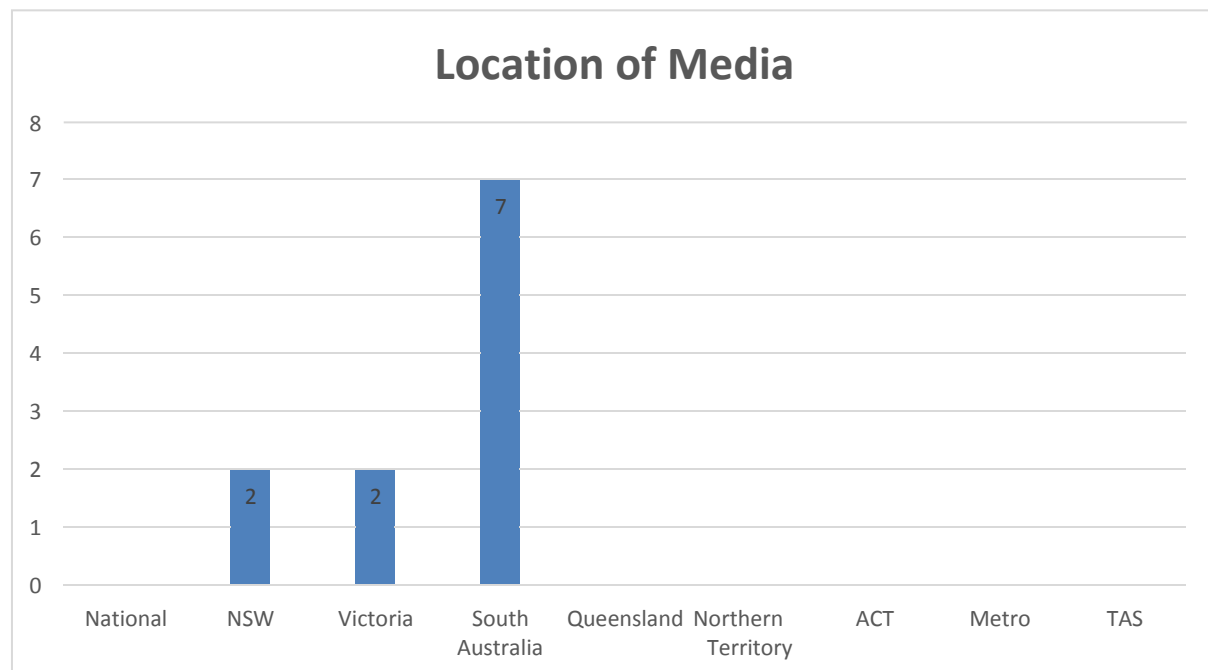
- ☐ In the period 23 - 29 July, the National Carp Control Plan received coverage in two AM radio pieces and nine print articles.
- Five items were positive in sentiment, five items were negative and one item was neutral. As we don't have access to the radio pieces, sentiment was judged based on Mediaportal media briefings that are sent via email.
- ☐ Both radio pieces aired on ABC Riverland as news pieces.
- ☐ Six print newspaper articles this week were in line with the recent media release. Print articles can be referenced following the report.
- ☐ Majority of media pieces monitored were from South Australia and were negative in sentiment.

Number of Articles and Sentiment in media – month

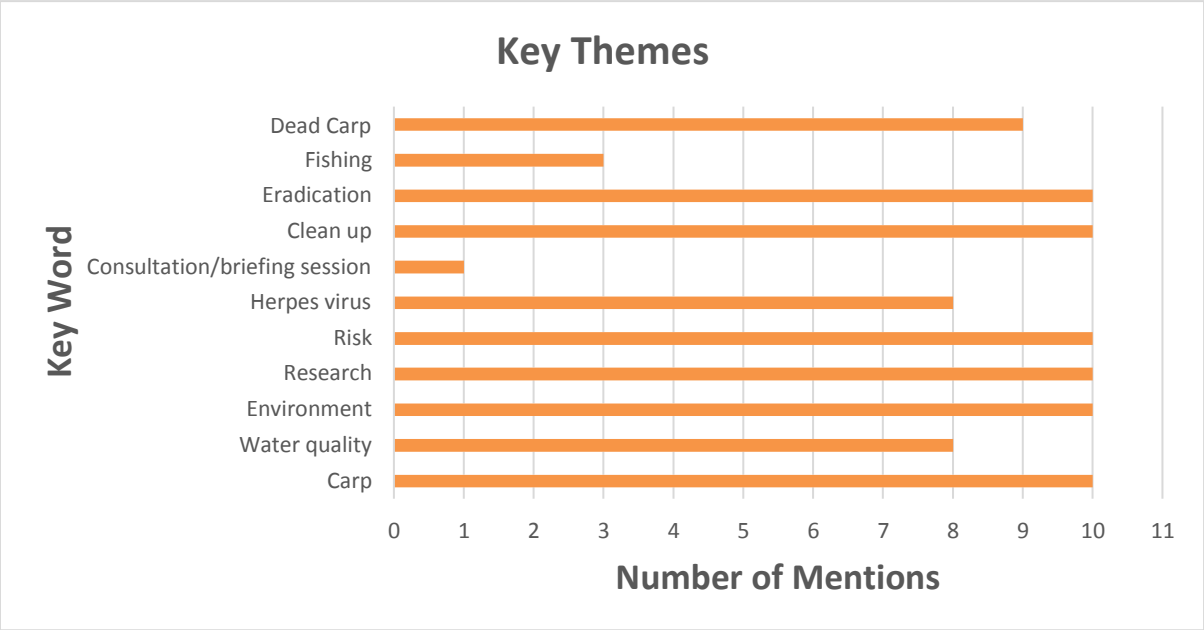
- ☐ This month (July), NCCP has received coverage in 53 articles.

Location of Media - week

- The below chart identifies what state the articles appear – they are broken down in to state (individual), national or metro locations.



Key themes/messages in media – this week



2 In the various articles monitored this week the key themes were dead carp, research, water quality, environment, eradication, research, risk, carp and clean up. Although the theme may be mentioned more than once in the article, this is only captured once to show what the key theme in the article was. An article may have more than one key theme.



25 Jul 2018

River News, Walkerville SA

Section: General News • Article Type: News Item • Audience : 2,450 • Page: 12

Printed size: 269.00cm² • Market: SA • Country: Australia • ASR: AUD 375 • words: 399

Item ID: 986431800

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Page 1 of 2

Unexpected carp control findings released

WHILE the carp-killing virus that could be released into Australian waterways – including the Riverland stretch of the River Murray – will not affect humans, new research has shown it may impact areas of water quality.

Over the past 18 months, leading universities, research institutions and expert organisations have been working to deliver a developed plan for the control of carp in Australia's water systems as part of the National Carp Control Program (NCCP).

NCCP co-ordinator Matt Barwick said the issue of carp control in Australia has prompted widespread discussion and

debate, with many valid points raised by stakeholders and the wider community.

"While all research will go through an extensive independent peer review process before being included in the final plan and made public, the NCCP is able to start sharing some of the insights emerging from the program," he said.

"This will help address gaps

in knowledge and future decision-making."

Research has shown:

D Larger than expected carp biomass variations. Identifying where carp density influences ecology informs where priority areas lie, which will also critically inform water quality modelling and clean-up strategies in different habitat types.

D Decomposition has no impact on fertiliser quality. Carp biomass can be processed into fertiliser regardless of the state of decomposition. Other appropriate utilisation methods continue to be explored, including composting and insect feed.

D Investigations continue into virus spread. Additional lab trials are required to investigate factors that may influence effectiveness of the virus as a biocontrol method in more detail. Past investigations have highlighted a need to further understand exactly how the carp virus is likely to spread from one fish to another.

D Research into dead carp impacts on water quality ongoing. Research has confirmed the carp virus cannot infect

humans, but several separate

and additional investigations are under way to understand how dead carp might impact on different aspects of water quality.

Mr Barwick said it is important to remember no decision has been made about carp control, or the possible release of the carp virus.

"The NCCP is designed to enable risks to be identified and explore ways to manage them, and that information will then inform the decision-making progress," he said.

The NCCP has launched www.yoursay.carp.gov.au/ to ensure everyone is given the opportunity to share their thoughts and opinions about carp control.



25 Jul 2018
River News, Waikerie SA
Section: General News • Article Type: News Item • Audience : 2,450 • Page: 12
Printed size: 269.00cm² • Market: SA • Country: Australia • ASR: AUD 375 • words: 399
Item ID: 986431800

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CARP in our river systems have been impacting water quality. PHOTO: Supplied



25 Jul 2018

Loxton News, Loxton SA

Section: General News • Article Type: News Item • Audience : 2,400 • Page: 8

Printed size: 205.00cm² • Market: SA • Country: Australia • ASR: AUD 314 • words: 445

Item ID: 986434818

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Page 1 of 1

More time needed for carp virus plan

Incoming data from research on the development of a national carp control plan has revealed an extension may be needed before the possible release of the carp virus (CyHV-3).

Over the past 18 months, Australia's leading universities, research institutions and expert organisations have been working to deliver independent and rigorous science to inform development of the National Carp Control Plan (NCCP).

NCCP national co-ordinator Matt Barwick said the research program was over half way through and that "interesting" findings were beginning to emerge, however he said more time may be needed to assess the results.

He said the issue of carp control in Australia had prompted widespread discussion and debate and that sharing some of the early lessons from the research would contribute to the discussion.

"While all research will go through an extensive independent peer review process before being included in the final plan and made public, the NCCP is able to start sharing some of the insights emerging from the program, which will help to address gaps in knowledge and future decision-making," Mr Barwick said.

"One of the common concerns raised by stakeholders is that more time is needed to review the research findings and ensure the right recommendations are made in relation to carp control.

"This is an important consideration for our nation, and one

that must deliver long-term improvements to our waterways.

"If an extension is needed, as we're discovering, then we will seek to secure more time."

Research has so far revealed that:

Further understanding is needed to understand how the carp virus, if released, is likely to spread from one fish to another. Therefore, additional lab trials are required to investigate factors that may influence the effectiveness of the virus as a biocontrol method in more detail.

Larger-than-expected carp biomass variations exist, with carp biomass in some sites sampled revealing carp biomass below and some well above the threshold at which ecological impacts occur as a result of carp.

A recent commercial scale trial into alternate uses for carp biomass found that highly decomposed carp were still usable for producing high quality fertiliser.

Research into dead carp impacts on water quality is still ongoing.

"The NCCP welcomes robust discussion as it ensures a thorough investigation of concerns can be undertaken," Mr Barwick said.

"It is important to remember no decision has been made in relation to carp control, or the possible release of the carp virus.

"The NCCP is designed to enable risks to be identified and explore ways to manage them. This information will then inform the decision-making process."

To have your say on the National Carp Control Plan visit the website (yoursay.carp.gov.au/).



26 Jul 2018

Murray Valley Standard, Murray Bridge SA

Section: General News • Article Type: News Item • Audience : 2,153 • Page: 7

Printed size: 219.00cm² • Market: SA • Country: Australia • ASR: AUD 487 • words: 265

Item ID: 986771454

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FACEBOOK COMMENTS

Greyhound facility approval, carp virus delay

GREYHOUND BREEDING FACILITY APPROVED AT MONARTO SOUTH

More animal cruelty on the horizon.

Jenny Schutz

Should be totally banned as they have tried to do in both NSW and ACT this sport is not necessary and serves no purpose what so ever.

Sally Ann Gray

The greyhound association has strict rules and regulations that they have to follow it's not a backyard puppy farm.

Cassandra Clark

I find it fascinating that the council have drafted a community engagement policy asking for community input, but when they get it they don't listen anyway? I assumed the council were there to represent the community, but it seems that many of them are pro racing and have personal interests in the industry. Representing the community or themselves? This decision is as dodgy as the industry itself.

Emily Foster

So many greyhounds are destroyed already. Do we need to breed that many?

Cindy Sharrock

CARP VIRUS MAY BE DELAYED

There is a lot they DO know but are ignoring as it does not fit their plan.

It's not the National Carp Control Plan its the National Virus Release Plan. They have spent \$4million on research but \$6million on advertising and promoting this virus.

The money could of been much better

spent trying to create industry to reduce the numbers in a much safer way. They are only calling for more time now because people are standing up and saying something such as local scientists and international experts on the virus who know exactly how it acts and what it does in the wild. #NoKoiHerpes-Virus.

Michael Graham



[illegible]



25 Jul 2018

Quirindi Advocate, Quirindi

Section: General News • Article Type: News Item • Audience : 1,832 • Page: 10

Printed size: 293.00cm • Market: NSW • Country: Australia • ASR: AUD 635

media: 635 • Issue: 15 • 00171101

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Page 1 of 1

National Carp Control

With the National Carp Control Plan's (NCCP) research program now over half way through, some interesting and at times unexpected, findings are beginning to emerge.

Over the past 18 months, Australia's leading universities, research institutions and expert organisations have been working to deliver independent and rigorous science to inform development of a plan for the control of carp in Australia, including the possible release of the carp virus (CyHV-3).

NCCP National Coordinator Matt Barwick says that the issue of carp control in Australia has prompted widespread discussion and debate, with many valid points raised by stakeholders and the wider community and that sharing some of the early lessons from the research will contribute to this important discussion.

"While all research will go through an extensive independent peer review process before being included in the final plan and made public, the NCCP is able to start sharing some of the insights emerging from the program which will help to address gaps in knowledge and future decision making," says Mr Barwick.

Here are a few examples of what the

science is telling us.

Larger than expected carp biomass variations

With on-ground fieldwork to estimate carp biomass in different habitats using electrofishing, mark-recapture, fyke netting and surveying of environmental DNA now complete, summary statistics indicate that carp density varied considerably between sample locations - with carp biomass in some sites sampled revealing carp biomass below and some well above, the threshold at which ecological impacts occur as a result of carp.

Decomposition no impact on fertiliser quality

A recent commercial scale trial into alternate uses for carp biomass found that highly decomposed carp were still usable for producing high quality fertiliser. Further, opportunities exist for processing carp waste on-site, limiting need for transport or storage, thereby helping to keep costs low.

Investigations continue into virus spread

With mortality rates from the carp virus understood to be strongly influenced by multiple factors including water temperature, virus concentration and carp schooling behaviour, computer modelling

points to a few highly specific scenarios in which biocontrol may result in high levels of carp knock-down. These investigations have highlighted a need to further understand exactly how the carp virus is likely to spread from one fish to another.

Research into dead carp impacts on water quality ongoing

While research by Australian National University scientists has confirmed that the carp virus cannot infect humans [Project: Cyprinid herpesvirus three and its relevance to humans], several separate and additional investigations are underway to understand how dead carp might impact on different aspects of water quality. A systematic and quantitative risk assessment project is also exploring different areas of ecological and social risk.

"The NCCP welcomes robust discussion as it ensures a

thorough investigation of concerns can be undertaken. Insights into our learnings will not only inform this debate, but help direct our ongoing research efforts," Mr Barwick says, "In terms of progress, it's exciting to receive incoming data to help us learn more about the prospects for potentially controlling

carp in Australia safely and effectively."

"One of the common concerns raised by stakeholders is that more time is needed to review the research findings and ensure the right recommendations are made in relation to carp control. This is an important consideration for our nation and one that must deliver long term improvements to our waterways. If an extension is needed, as we're discovering, then we will seek to secure more time."

"It is important to remember no decision has been made in relation to carp control, or the possible release of the carp virus. The NCCP is designed to enable risks to be identified and explore ways to manage them. This information will then inform the decision-making process. The actual decision-making will be made by governments. Our role is to deliver a comprehensive program of research and stakeholder engagement to inform the development of a plan to control carp in Australia."

To ensure that everyone is given the opportunity to share their thoughts and opinions about carp control, the NCCP has launched <http://www.yoursay.carp.gov.au>

/ - a dedicated site where visitors can learn more about the work of the NCCP, leave comments or ask questions.



More time needed for carp control

INCOMING data from research on the development of a national carp control plan has revealed an extension may be needed before the possible release of the carp virus (CyHV-3).

Over the past 18 months, Australia's leading universities, research institutions and expert organisations have been working to deliver independent and rigorous science to inform development of the National Carp Control Plan (NCCP).

NCCP national co-ordinator Matt Barwick said the research program was over half way through and that "interesting" findings were beginning to emerge, however he said more time may be needed to assess the results.

He said the issue of carp control in Australia had prompted widespread discussion and debate and that sharing some of the early lessons from the research would contribute to the discussion.

"While all research will go through an extensive independent peer review process before being included in the final plan and made public, the NCCP is able to start sharing some of the insights emerging from the program, which will help to address gaps in knowledge and future decision-making," Mr Barwick said.

"One of the common concerns raised by stakeholders is that more time is needed to review the research findings and ensure the right recommendations are made in relation to carp control.

"This is an important consideration for our nation, and one that must deliver long-term improvements to our waterways.

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Research has so far revealed that

Further understanding is needed to understand how the carp virus, if released, is likely to spread from one fish to another. Therefore, additional lab trials are required to investigate factors that may influence the effectiveness of the virus as a biocontrol method in more detail.

Larger-than-expected carp biomass variations exist, with carp biomass in some sites sampled revealing carp biomass below

and some well above the threshold at which ecological impacts occur as a result of carp.

A recent commercial scale trial into alternate uses for carp biomass found that highly decomposed carp were still usable for producing high quality fertiliser.

Research into dead carp impacts on water quality is still ongoing.

"The NCCP welcomes robust discussion as it ensures a thorough investigation of concerns can be undertaken," Mr Barwick said.

"It is important to remember no decision has been made in relation to carp control, or the possible release of the carp virus.

"The NCCP is designed to enable risks to be identified and explore ways to manage them. This information will then inform the decision-making process."

To have your say on the National Carp Control Plan visit: www.yoursay.carp.gov.au/

Plans to introduce virus to wipe out scourge of the Murray...

HOLY CARP

A CARP-KILLING virus is being developed by scientists in the United States. The virus is expected to be released in the Murray River in 2016. The virus is expected to be released in the Murray River in 2016. The virus is expected to be released in the Murray River in 2016.

Dreaming of owning your own home?

Murray Pioneer, 15/01/16



24 Jul 2018

Murray Valley Standard, Murray Bridge SA

Author: Peri Strathearn • Section: General News • Article Type: News Item

Audience : 2 153 • Page: 3 • Printed size: 226.00cm² • Market: SA • Country: Australia

ASR: AIID 502 • words: 374 • Item ID: 985740361

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Virus release may be delayed

BY PERI STRATHEARN

River Murray

AS RESEARCHERS begin to feed their results into the National Carp Control Plan (NCCP), one thing is becoming clear – there is plenty more research still to do.

Coordinator Matt Barwick has confirmed he will ask for the NCCP to be given more time "if an extension is needed, as we're discovering".

A draft control plan for carp in the Murray-Darling Basin is due to be released this month, and a final version produced by December, in order for Australia's governments to make a decision about whether to release a carp-killing virus into the waterway.

But more questions than answers remain around the topics the NCCP opened up about in a statement published last week.

For example, scientists at the Australian National University have confirmed that the carp virus cannot

directly infect humans, but several more research projects are still looking into the effects thousands of dead carp would have on water quality, including the possibility of bacteria causing health issues.

The CSIRO has identified the conditions in which a carp virus would be most effective, but wants to conduct more lab trials.

Carp population densities vary "considerably" across the river system, researchers at the Arthur Rylah Institute and La Trobe University have found; but they have not yet named the stretches where dense populations would make clean-up difficult or sparse populations would limit the virus' effectiveness.

On the bright side, Curtin University's Janet Howieson has found dead carp could be processed into fertiliser on-site, along the banks of the river, rather than having to be transported elsewhere. They could be processed

even if they had begun to decay, she found.

Mr Barwick said all research would be peer-reviewed before being included in the final plan and published.

He said the NCCP welcomed "robust discussion" about the work being done, as it would inform the political and social debate about whether to release the carp herpes virus and guide future research efforts.

"It is important to remember no decision has been made in relation to carp control, or the possible release of the carp virus," he said.

"The Fisheries Research and Development Corporation (overseeing the NCCP) is not involved in the actual decision-making itself – this will be made by governments."

National Carp Control Planresearch delivering some interesting (and unexpected) findings...

With the National Carp Control Plan's (NCCP) research program now over half way through, some interesting, and at times unexpected, findings are beginning to emerge.

Over the past 18 months, Australia's leading universities, research institutions and expert organisations have been working to deliver independent and rigorous science to inform development of a plan for the control of carp in Australia, including the possible release of the carp virus (CyHV-3).

NCCP National Coordinator Matt Barwick says that the issue of carp control in Australia has prompted widespread discussion and debate, with many valid points raised by stakeholders and the wider community, and that sharing some of the early lessons from the research will contribute to this important discussion.

"While all research will go through an extensive independent peer review process before being included in the final plan and made public, the NCCP is able to start sharing some of the insights emerging from the program which will help to address gaps in knowledge and future decision making," says Mr Barwick.

Here are a few examples of what the science telling us?

Larger than expected carp biomass variations With on-ground fieldwork to estimate carp biomass in different habitats using electrofishing, mark-recapture, fyke netting, and surveying of environmental DNA now complete, summary statistics indicate that carp density varied considerably between sample locations - with carp biomass in some sites sampled revealing carp biomass below, and some well above, the threshold at which ecological impacts occur as a result of carp.

What this means: Identifying where carp density influences ecology is important for informing where priority areas lie. This work will also critically inform water quality modelling and clean up strategies in different habitat types, if the carp virus is approved for release.

Decomposition no impact on fertiliser quality

(Project: Assessment of options for utilisation of virus-infected carp)

A recent commercial scale trial into alternate uses for carp biomass found that highly decomposed carp were still usable for producing high quality fertiliser. Further, opportunities exist for processing carp waste on-site, limiting need for transport or storage, thereby helping to keep costs low.

What this means: Carp biomass can be processed into fertiliser regardless of the state of decomposition. Other appropriate utilisation methods continue to be explored including composting and insect feed.

Investigations continue into virus spread

(Project: Development of hydrological, ecological, and epidemiological modelling to inform a CyHV-3 release strategy for the biological control of carp in the Murray Darling Basin)

With mortality rates from the carp virus understood to be strongly influenced by multiple factors including water temperature, virus concentration and carp schooling behaviour, computer modelling points to few highly specific scenarios in which biocontrol may result in high levels of carp knock-down. These investigations have highlighted a need to further understand exactly how the carp virus is likely to spread from one fish to

another.

What this means: Additional lab trials are required to investigate factors that may influence effectiveness of the virus as a biocontrol method in more detail.

Research into dead carp impacts on water quality ongoing

(Project: Investigation of nutrient interception pathways to enable circumvention of cyanobacterial blooms following carp mortality events)

While research by Australian National University scientists has confirmed that the carp virus cannot infect humans [Project: Cyprinid herpesvirus 3 and its relevance to humans], several separate and additional investigations are underway to understand how dead carp might impact on different aspects of water quality. A systematic and quantitative risk assessment project is also exploring different areas of ecological and social risk.

What this means: While factors such as water movement and areas of high carp biomass can be used to identify potential clean-up hot spots, the NCCP acknowledges community concerns about water quality and is committed to providing greater understanding around water quality, and risk of bacteria and microorganisms causing secondary issues.

"The NCCP welcomes robust discussion as it ensures a thorough investigation of concerns can be undertaken. Insights into our learnings will not only inform this debate, but help direct our ongoing research efforts," Mr Barwick says, "In terms of progress, it's exciting to receive incoming data to help us learn more about the prospects for potentially controlling carp in Australia safely and effectively."

"One of the common concerns raised by stakeholders is that more time is needed to review the research findings and ensure the right recommendations are made in relation to carp control. This is an important consideration for our nation, and one that must deliver long term improvements to our waterways. If an extension is needed, as we're discovering, then we will seek to secure more time."

"It is important to remember no decision has been made in relation to carp control, or the possible release of the carp virus. The NCCP is designed to enable risks to be identified and explore ways to manage them. This information will then inform the decision-making process. The Fisheries Research and Development Corporation (FRDC) is not involved in the actual decision-making itself – this will be made by governments. Our role is to deliver a comprehensive program of research and stakeholder engagement to inform the development of a plan to control carp in Australia."

To ensure that everyone is given the opportunity to share their thoughts and opinions about carp control, the NCCP has launched <http://www.yoursay.carp.gov.au/> – a dedicated site where visitors can learn more about the work of the NCCP, leave comments or ask questions.



25 Jul 2018

Euroa Gazette, Euroa VIC

Section: General News • Article Type: News Item • Audience : 1,603 • Page: 4

Printed size: 60.00cm² • Market: VIC • Country: Australia • ASR: AUD 429 • words: 112

Item ID: 985958427

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Have your say on carp control

WITH the National Carp Control Plan's (NCCP) research program now over half way through, some interesting, and at times unexpected, findings are beginning to emerge.

Over the past 18 months, Australia's leading universities, research institutions and expert organisations have been working to deliver independent and rigorous science to inform development of a plan for the control of carp in Australia, including the possible release of the carp virus (CyHV-3).

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PT-04 - MILESTONE PROGRESS REPORT

FRDC PROJECT NUMBER: 2017-164

Title: NCCP Communications Program 2018

MILESTONE NUMBER: 9

DATE DUE: 31 August 2018

PRINCIPAL INVESTIGATOR: Seftons

OVERALL PROJECT PROGRESS:

Milestone Status

Has this milestone been achieved (Yes/No)	No
Will the project be completed according to the current milestone schedule (Yes/No)	No

PROJECT PROGRESS AGAINST PROJECT OBJECTIVES

The following report reflects outputs delivered by Seftons as part of the NCCP Program for the period 1 August – 24 August 2018.

Seftons advised NCCP on the 16 August 2018 that it wished to cease its current contract for the delivery of communications and stakeholder engagement services – effective 24 August 2018.

The NCCP is currently negotiating with the Australian Government's Department of Agriculture and Water Resources (DAWR) for a program extension and funding increase, to deliver the original program outputs and additional research needs. We understand these negotiations remain ongoing.

Seftons does not believe it is able to continue to deliver the outputs agreed to moving forward, under our existing contract, in light of the abovementioned program challenges, and as such requested an end to our contract. Seftons has advised the NCCP a new communications and stakeholder brief is required so that appropriate communication and engagement recommendations can be made, in line with DAWR, FRDC and NCCP recommendations.

However in light of this decision, there were a number of deliverables completed by Seftons for the period 1 August – 24 August 2018.

These largely were focused on stakeholder engagement, strategic partnerships, the NCCP Consultation Report and the e-newsletter.

Seftons continued to engage, as requested, with Federal Government Ministers to secure briefing meetings for the NCCP. Seftons worked closely with the CWG members for each state / territory to develop targeted list of Chiefs of Staff to approach and coordinate briefing meetings. As part of this work, Seftons confirmed a briefing for NCCP with Deputy Prime Minister Michael McCormack.

Further to this engagement, Seftons worked closely with the Murray Darling Association to coordinate NCCP's presence at the Murray Darling Association National Conference – where Matt Barwick and Kevin Cooper gave

keynote addresses. Seftons also worked closely with WaterNSW's Joe Pera to confirm his involvement in the NSW Local Government Water Conference, in collaboration with the NCCP.

Seftons also pursued NCCP's request to explore a strategic partnership with Australian Recreational Fishing Foundation's Gone Fishing Day.

Despite pending confirmation on the broader NCCP program timelines and funding, the communications and engagement program continued to progress positively, with a focus on the immediate needs of the program.

The NCCP was the focus of a recent RRAT Senate Committee Public Hearing and as such, Seftons developed a detailed response strategy to mitigate negative commentary and address the themes raised as part of this hearing.

As part of this strategy, a detailed update was distributed via a media release called '*What the Research is Telling Us*' to stakeholders, media and the broader public around the status of the program and research under the NCCP.

Media interest in this update was extremely positive with extensive coverage across ABC and regional and rural media print and radio outlets where carp are most prevalent.

Further engagement with stakeholders is underway through preparation work for NCCP's involvement in the NSW Local Government Water Conference, Murray Darling Association Conference and Australian Recreational Fishing Foundation's Gone Fishing Day – as outlined in our 2018 strategy.

Close communication continues with members of NCCP's Communications Working Group – with members engaged for feedback via www.yoursay.carp.gov.au on a range of communications and engagement tactics including the social media campaign to underpin the launch of NCCP's Clearer Waters videos, as well feedback sought to our Senate Response strategy – which comprised of the abovementioned media release '*What the Research is Telling Us*', as well as a briefing pack for individual senators, FAQs addressing key themes, briefing meetings at a state government level as well as identifying where possible the use of independent community / NCCP champions.

Seftons also finalised the design of the NCCP newsletter via FRDC's software and included updated messages from NCCP's Matt Barwick to address program status and timelines.

Program milestones and outputs were all met. Specific content produced included:

- Hosted telemeeting with CWG to provide update on program
- Produced NCCP social media kits for CWG members
- Drafted and distributed '*What the research is telling us*' media release
- Produced Senate Response Strategy to RRAT Senate Committee Public Hearing
- Attended meeting with Australian Veterinarian Association
- Secured NCCP involvement at NSW Local Government Water Conference
- Secured NCCP involvement at Murray Darling Association Conference
- Assessed opportunity for involvement at Cotton Conference
- Met with J. Schirmer to discuss stakeholder engagement recommendations
- Developed media alert for Ecology Expert Workshop and distributed to Canberra media
- Delivered first draft of NCCP Community Consultation Report
- Management of Bang the Table (www.yoursay.carp.gov.au) including new registrations and enquiries
- Produced NCCP newsletter in FRDC template
- Assessed Australian Recreational Fishing Foundation's Gone Fishing Day opportunities for NCCP
- Communication Working Group management and liaison
- Media monitoring and weekly reporting

Repeat the following three sections for each milestone in the period being reported on:

1. ORIGINAL MILESTONE DATE AND TITLE:

31/082018 – Milestone 8

2. REVISED MILESTONE DATE AND TITLE:

n/a

3. PROGRESS AGAINST MILESTONE (Achieved/Not Achieved):

ACHIEVED

- ☐ Liaison with key stakeholder groups to ensure they are informed of program status:
 - NSW Local Government Water Conference – confirmed involvement with event organisers and assembled panel of speakers
 - Murray Darling Association Nation Conference – secured involvement at conference and provided recommendations to NCCP on key speakers
 - Australian Recreational Fishing Foundation 'Gone Fishing Day' – reviewed proposal from ARFF and recommended meeting to explore further opportunities
 - Australian Veterinarian Association – Met with M. Latter in Canberra to brief on NCCP and identify opportunities for alignment
 - J. Schirmer – shared Seftons stakeholder engagement recommendations to ensure it is in line with University of Canberra work.
 - RRAT – developed a communication and engagement response strategy following RRAT Committee Public Hearing.
 - NCCP Stakeholder Plan – provided recommendations to J. Allnut on proposed NCCP stakeholder engagement approach re discussion papers.
 - Cotton Conference – identified opportunities for NCCP and decided not to proceed based on timings and lack of reach to targeted stakeholders
 - Updated and refined stakeholder engagement plan outlining priority meetings for government engagement during August – December 2018
- ☐ Production of media relations materials in line with contract deliverables
 - Drafted and distributed 'What the Research Is Telling Us' national release – resulted in widespread media coverage
 - Coordinated interviews for M. Barwick following distribution of media release
 - Drafted and distributed Ecology Experts Workshop alert to target Canberra radio programs.
 - Coordinated media interviews for M. Barwick following workshop media alert distribution
- ☐ Management of the Communications Working Group, in conjunction with NCCP
 - Held meeting with CWG on 5 July via teleconference to discuss RRAT Committee response
 - Distributed meeting invitations and managed RSVPs
 - Briefed CWG Chair Ian McDonald prior to meeting
 - Developed meeting minutes following telemeeting on 5 July
 - Postponed the CWG face to face meeting for August due to program uncertainty
 - Postponed the CWG telemeeting to be held prior to face to face due to program uncertainty
 - Liaised with CWG members on particular jurisdictional media coverage including SA re Adelaide Advertiser and regional coverage.
- ☐ Development of supporting communications collateral
 - Developed NCCP newsletter in FRDC software, updated opening message from M. Barwick
 - Murray Darling Association May Newsletter Update
 - Coordinated approvals of Clearer Waters videos
 - Development and delivery of CWG Social Media Pack to support the launch of Clearer Waters
- ☐ Preparation of reactive responses to all relevant media within 24 hours
 - Counsel re Adelaide Advertiser
 - Liaison with Murray Valley Standard
 - Liaison with Craig Ingram re Gippsland Farmer/Latrobe Valley Express
 - Monitoring of coverage following RRA Public Hearing
 - Daily media monitoring on issues/challenges to the NCCP and relevant information is forwarded on to NCCP team.
 - Weekly media analysis report provided with sentiment and key themes listed. Each story picked up on Isentia and BuzzWords is analysed, with about 10 questions answered for each, with data kept in a spreadsheet which is updated daily and forms the basis for the report.
 - Key themes are noted and issues management response is developed.
- ☐ Ongoing liaison with FRDC to identify and respond to threats

- Daily phone calls and emails to FRDC/NCCP to discuss next steps and to identify issues. Focus on timing and budget messaging.
- Provided counsel to NCCP re RRAT Senate Response
- Weekly media analysis report developed and provided
- Bang the Table content management
 - Management of questions received via Bang the Table and updates on new registrations
 - Investigation of upcoming webinar options – provided recommendations to NCCP
- Carp Inbox Support
 - Provided draft responses as required
 -

NOT ACHIEVED

n/a

PUBLICATIONS/PRODUCTS

- NCCP CWG Social Media Packs
- NCCP 'What the Research is Telling Us' media release
- NCCP Ecology Expert Workshop media alert
- NCCP Updated Stakeholder Engagement Approach
- NCCP Newsletter –July (pending approval)
- Weekly media analysis report 2.7.2018
- Weekly media analysis report 9.7.2018
- Weekly media analysis report 16.7.2018
- Weekly media analysis report 23.7.2018
- Weekly media analysis report 30.7.2018

SPECIAL CONDITIONS

N/A

INTELLECTUAL PROPERTY ISSUES ARISING:

N/A

CONTACT WITH BENEFICIARIES:

- Members of the Communications Working Group
- Australian Veterinarians Association
- Murray Darling Association and member councils
- Water NSW
- University of Canberra's Jacki Schirmer
- Cotton Info re Cotton Conference
- Centre for Invasive Species Solutions
- Australian Recreational Fishing Foundation (ARFF)

PROGRESS AGAINST COMMUNICATION & EXTENSION PLAN:

Despite NCCP program delays, the communications and stakeholder activity has progressed, under the guidance of NCCP. Proactive engagement has continued with media and stakeholders aligning with the objectives of this project. The objectives are to inform and engage communities and stakeholders about the NCCP; widely communicate the NCCP process; provide opportunities for community input into the NCCP; support and enhance FRDCs reputation through developing high quality materials and managing and delivering the project with high professionalism.

VARIATIONS TO PROJECT:

N/A

National Carp Control Plan & Gone Fishing Day

PR and communications recommendations

Prepared 9th August 2018

OVERVIEW

Following an internal review and teleconferences with Steve Morgan (Fishing Monthly) on 8th August and with Stefan Sawynok (InfoFish) on 6th August, Seftons has prepared the following considerations for the NCCP to create an association with national event Gone Fishing Day (GFD), on Sunday 14th October.

Seftons believes an association with GFD is a positive opportunity to raise awareness about the issue of carp to a national audience in a direct and engaging way. Initial considerations are provided below and can be scaled up or down following further dialogue with NCCP and GFD organisers.

THE CONCEPT

The Australian Recreational Fishing Foundation (ARFF) has been implementing GFD since 2016, and has promoted it as a national fishing event to highlight recreational fishing as a popular past time in Australia with many benefits. The day has served as a call to action to Australian anglers to hit the waters and make the most of Australia's waterways and fishing areas. The event has received good promotional and financial support from state government and government agencies.

Australian anglers, fishing clubs, fishing communities, friends, families, and even individuals, are encouraged to cast a line or net on GFD (this year on Sunday 14th October). Groups or individuals can register online in order to receive more information about how to be part of GFD.

GONE FISHING DAY AND THE NCCP

In tandem with GFD, the ARFF has proposed the NCCP run "Australia's biggest carp catch" to engage a broader section of the fishing community and also highlight the damaging impacts carp have on Australia's waterways. The ARFF has proposed this is brought to life in a number of ways:

- Carp catch app – an app for fishers to log fish caught in carp areas on GFD.
- Livestream – a 2-hr event that showcases carp-related content, including fishing events, comment from experts, major carp catches, etc.

- Biosonics ultrascan – scanning technology demonstrating how many carp are in an area, habitat mapping, damage caused by carp etc.

Seftons has considered the above and has identified the following considerations for NCCP:

Naming

- Seftons proposes the event is called “Australia’s Biggest Carp Catch” on Gone Fishing Day.

Suggested messaging

- The NCCP is calling on Australians to take part in “Australia’s Biggest Carp Catch” on Gone Fishing Day, to help improve the health of Australia’s waterways.
- The NCCP is partnering with Gone Fishing Day to educate all Australians, be they keen anglers or just love spending time on our precious waterways, about the negative impacts of carp.
- The NCCP is investigating the most effective measures to achieve a reduction in the carp population. A significant reduction in carp numbers would mean cleaner Australian waterways, increased biodiversity and healthier communities.

Considerations for the app

- Steve/Stefan will need to provide detail re specific content and corporate branding / style guide required to develop the app.
- Steve mentioned the development of an event logo which he can provide more information on.
- Recommend we have a link on the NCCP website to “download the app” as well as links from the GFD website and other potential partner organisations.
- Tailored digital content should be created for CWG members to promote the app across their social and communications platforms.

Considerations for the livestream

- Recommend a dedicated GFD / Australia’s Biggest Carp Catch page is created and lives on the NCCP website. This will include the livestream, information about the event and quick links to relevant information, e.g. science.
- Again, tailored digital content should be created for CWG members to promote the app across their social and communications platforms.

Considerations for Bioscan

- The utilisation of Bioscan data (such as in post-event online content and media materials) may be of benefit, however, the cost vs the expected value should be considered. Given the biomass research results will be available in October, it may be unnecessary to have both. NCCP to confirm if this is the case.

Grants & Prizing

- Having a suite of prizing available for the best carp catches on GFD is recommended in order to maximise interest and participation. Prizing needs to be considerate of the target audience and Seftons will work with Steve to gauge what commercial partner arrangements may already be in place to source additional prizing, e.g.:
 - BCF vouchers
 - Fishing equipment – e.g. Jarvis Walker, Pure Fishing
 - Mitre 10 / Bunnings Vouchers
 - Kids prizes e.g. BCF fishing pack.
- Judging criteria for “best” carp catches would include:
 - Most amount of carp caught by one individual or team
 - Australia’s youngest carp catcher / Australia’s oldest carp catcher
 - Largest carp in length
 - Largest carp in weight.

Competition entrants will be determined via analysis of photos, tallies of catches and weights and other data entered in the app.

- In addition, Steve mentioned the NSW DPI will be supplying 40 x \$2K grants to encourage participation in GFD. Seftons recommends the pre-event media release localised to NSW mentions this to help increase event registrations to GFD and Australia’s Biggest Carp Catch.

TV exclusive

- Offer a national media exclusive to a TV network such as Channel 10’s The Project.
- The content fits the format of the program well, as we have the ability to package up an entertaining and engaging segment (e.g. one of the hosts on a boat fishing and catching carp) with a serious angle (demonstration of the detrimental effects of carp).
- Seftons proposes we pitch the idea soon to the producers and invite vet Dr Chris Brown to be part of the event.
- The content would ideally appear on national TV screens Sunday evening (14th) highlight the event and discuss in more depth the issue of carp and the work of the NCCP.

Other media programs / exclusives to explore:

- Live cross at key event on Sunrise or Today – either news or via the weather. This can be more difficult/costly as a paid component is often required.

- Dr Chris Brown is also a host on *The Living Room* and does a weekly travel/event segment. Content could be packaged up prior to the event and go to air the Friday evening prior to encourage viewers to participate
- Other fishing and lifestyle programs, e.g. Paul Worsteling from iFish.

HOW “AUSTRALIA’S BIGGEST CARP CATCH” MIGHT WORK

Pre-event / lead-up

Stakeholders

- Draft and distribute a letter advising of the NCCP’s involvement in GFD via Australia’s Biggest Carp Catch to NRM, LLS and also relevant Local Government to encourage support, promotion and attendance.
- The letter should be part of a “pack” that includes a logo, fact sheet, event flyer and suggested social media posts to encourage widespread dissemination of information about the event.

Media

- Work with state peak recreational fishing bodies to identify key carp events / locations for “Australia’s Biggest Carp Catch”, this could also be taken from registered events on the Gone Fishing Day website. We will identify a range of locations in carp – impacted areas where we know people will be participating on mass in GFD activities, and invite local media for vision and interview opportunities. Locations will be identified in NSW, Victoria, SA and Qld to ensure widespread coverage.
- Develop a template media release to be distributed to print, online and radio media in carp impacted areas, calling on communities and individuals to download the app and participate in Australia’s Biggest Carp Catch on GFD.
- Work with local councils, particularly in the Basin area, and coordinate photo opportunities with mayors or key councillors at their local fishing clubs promoting Australia’s Biggest Carp Catch at Gone Fishing Day.
- Pitch a pre-event photo opportunity with the Sunday Telegraph, Sunday Herald Sun and Sunday Mail (SA) for publication on Sunday 7th October pre-promoting Australia’s Biggest Carp Catch to drive awareness and event registrations.
- Tailor content from the media release and develop stories/articles for industry/trade publications to raise awareness about Australia’s Biggest Carp Catch ahead of GFD.
- Tailor the same content for social channels about Australia’s Biggest Carp Catch on GFD that can be distributed via Steve’s networks and through the FRDC and the NCCP Communications Working Group (CWG).
- Sunday Papers - target the weekend and Sunday papers in the lead up to the event and set up photo opps to run the weekend of the event.

Event – Sunday 14th October

- On Thursday 11th or Friday 12th October distribute a news alert to all relevant metro and regional print and broadcast media announcing Australia's Biggest Carp Catch will be held on Gone Fishing Day this Sunday 14th. Seftons will follow-up with print and broadcast media to confirm attendance at relevant events and spokesperson/vision opportunities. Seftons will coordinate pre-recorded radio interviews with Matt to discuss more about the day and encourage people to participate and attend. Seftons will gauge any commercial radio station's interest in attending events on the day to schedule live crosses.
- NCCP should consider a range of spokespeople to share event key messages (e.g. heads of state rec fishing bodies) and to speak at events with media, participants and other stakeholders.
- Discussion was had around posting livestream content early on the morning of Sunday 14th to encourage any last-minute event registrations. This would also include an invitation to watch the scheduled livestream to those who can't take part in the event.
- Host the main livestream content at a key carp catch GFD event, such as a waterway in Tamworth or Wagga. This will include pieces to camera from Matt Barwick and experts such as Joe Pera, as well as interviews with anglers and vision of carp being caught. Stefan from InfoFish should confirm if we can cut interviews and other vision into b-roll footage for distribution to regional TV stations in the afternoon of GFD for that evening's news.
- At the same event, host Channel 10's The Project – they can interview Matt, our experts, and we can also take them out on a boat to fish for and catch carp.
- Seftons would work with Stefan from InfoFish to create a short clip of the highlights of the livestream, as well as data around the volume of carp caught via the app, that could again be shared and promoted across ARFF member network channels as well as the FRDC and CWG channels. For maximum impact, this video should be created on the afternoon/evening of Sunday 14th and shared online the next morning on Monday 15th.

Post-Event

- Seftons will develop a wrap-up release highlighting the number of carp catch events or individuals who registered for Australia's Biggest Carp Catch, how many carp were caught, the main locations where carp were caught, and any quirky stats or highlights from the day. The release would include messaging around the abundance of carp in waterways, and that fishing them out of the waterways is beneficial but not the only solution.
- The release will be localised based on the regions where events were held and distributed w/c 15th October with hi-res images.

MEASUREMENT

To determine whether or not the event was a success, Seftons proposes applying the following metrics. These can be adjusted or edited:

- No. of individuals or “events” who downloaded the app
- No. of print articles promoting the day
- No. of pieces of radio coverage and/or spokesperson interviews
- No. of print articles printing wrap-up results
- No. of “posts” or “shares” on social of pre-event promotion
- 1 x national TV piece
- No. of views, shares and positive comments achieved on the livestream post-event wrap-up.

BUDGET

Please find an indicative budget below. This will be refined once the above plan has been agreed with NCCP and GFD organisers.

ITEM	COST
Advertising / advertorials in Fishing Monthly and other publications	Steve to advise
Prizing	Allow \$5,000
x2 flyer design for kits/packs – e.g. event promo flyer and “10 things you didn’t know about carp flyer”	\$1,500
Printing of flyers	Allow \$5,000-\$10,000 depending on number of registered clubs
Merchandise e.g. caps and polos (distributed to key events for media opps)	\$3,000 - \$5,000
Branded Australia’s Biggest Carp Catch pull-up banner/s for Livestream background	\$500
Seftons travel to key media events	\$1,500

TIMING / NEXT STEPS

With the event only a matter of months away, Seftons has developed the following draft (topline) timeline to map out key activities and deliverables:

[illegible]

National Carp Control Plan Stakeholder Workshops & Community Meetings Summary 2017 - 2018

Prepared August 2018

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TERRITORY REPORT: AUSTRALIAN CAPITAL TERRITORY	ERROR! BOOKMARK NOT DEFINED.
STATE REPORT: QUEENSLAND	ERROR! BOOKMARK NOT DEFINED.
STATE REPORT: SOUTH AUSTRALIA	ERROR! BOOKMARK NOT DEFINED.
STATE REPORT: VICTORIA	ERROR! BOOKMARK NOT DEFINED.

Executive Summary

The National Carp Control Plan (NCCP) is focused on identifying a safe, effective, integrated suite of measures to control the impact of carp on Australian waterways. A key focus has been exploring the potential release of the biocontrol agent *Cyprinid herpesvirus-3* or the 'carp virus'.

The NCCP team is delivering a comprehensive program of research and consulting extensively with stakeholders and the community to inform development of an integrated plan to control carp in Australia.

The main objectives of the NCCP are to:

- undertake research to address key knowledge gaps and understand risk elements;
- use information collected to plan for an integrated approach to control carp in Australia's waterways;
- build community awareness and understanding of the activities proposed for the control of carp in Australia;
- understand stakeholder views, and ensure the NCCP addresses questions and/or concerns;
- develop detailed strategies for carp control and subsequent clean-up; and,
- support national coordination on all elements of the NCCP's development.

As part of this process, NCCP is working with Australia's leading universities and research institutions to undertake a multi-faceted body of work to explore such elements as: biomass estimations to determine how many carp inhabit Australia's aquatic environments; completion of trials testing the susceptibility of non-target species to the carp virus; strategies for cleaning up carp if the virus is released; as well possible carp utilisation options.

The NCCP is also committed to understanding the impacts of carp for communities throughout Australia. As such, 73 stakeholder workshops and community meetings were held throughout carp-affected areas in Queensland, New South Wales, the ACT, Victoria and South Australia during 2017 and 2018.

Following is a summary of the meeting locations:

Victoria	New South Wales
Colac	Balranald
Hamilton	Albury / Wodonga
Horsham	Deniliquin
Mildura	Griffith
Swan Hill	Wagga Wagga
Shepparton	Penrith
Bendigo	Bathurst
Wangaratta	Dubbo
Sale	Bourke
Lakes Entrance	Wilcannia
Melbourne	Menindee
Echuca	Maitland
	Muswellbrook
ACT	Tamworth
Canberra	Inverell
	Goulburn / Yass
South Australia	Lismore
Berri	Forbes
Goolwa	
Mannum	Queensland
Adelaide	Charleville
	St George
	Toowoomba
	Beaudesert
	Brisbane

N.B The National Carp Control Plan is working with the Western Australia Government to determine the need and locations for upcoming stakeholder meetings.

The meetings were hosted by each jurisdictional natural resource management (NRM) group, in collaboration with NCCP and state and territory government departments.

The meetings enabled:

1. The NCCP to explain the history of carp control in Australia, the challenges the pest species present, the scope of the NCCP program and some specifics around the research underway.
2. Participants to ask questions, raise concerns and contribute to the development of the National Carp Control Plan.

The report has been compiled from data provided to the NCCP by each of the natural resource management groups responsible for the meetings held within their jurisdiction.

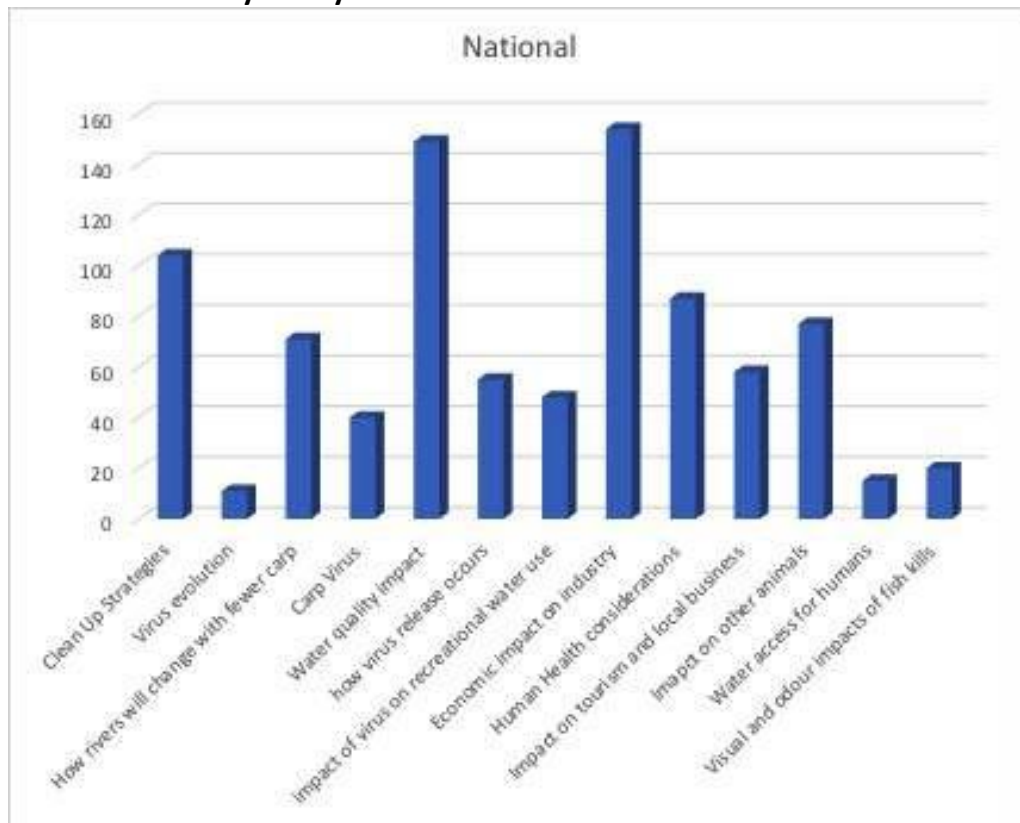
Almost 1,500 people participated in the stakeholder and community meetings, comprising of community / recreational users, environmental advocates, farmers/irrigators, water

authority representatives, commercial fishers, business owners, tourism operators, traditional owners, natural resource management representatives as well as local, state and federal government representatives.

Nationally, the aspects of most interest or concern to participants included:

- The impact possible release of the carp virus will have on water quality;
- The economic impact on industry; and
- The proposed clean-up strategies being considered as part of the plan.

National Summary of Key Consultation Themes



These concerns varied slightly from state to state:

- Economic impact on industry was the main focus in the Australian Capital Territory and South Australia
- The impact on water quality the top concern in New South Wales and Queensland
- While in Victoria it was the clean-up strategy
- Queensland and Victoria also noted the recovery of rivers as a primary focus as well.

Overall, most participants reported sourcing their knowledge on carp impacts and carp control from the NCCP, while in NSW and Queensland an equal source was natural resource management bodies, and in Victoria traditional media (newspapers, radio and television) was an equal information source. In South Australia, the main source for information was the state government.

If a virus release was determined as the most appropriate method to control carp and subsequently released, state government was considered best suited to plan and coordinate the overarching clean-up strategy in three of the five states (NSW, SA and Victoria); these same three states also considered commercial operators (such as commercial fishers and contractors) the best suited for on-the-ground clean-up activities.

Both the ACT and Queensland considered local government the best suited to plan and coordinate the overarching clean-up strategy, with both also considering local government the best body for on-the-ground clean-up activities, although Queensland equally considered volunteers in this role.

Four of the five jurisdictions visited considered that “most” of their questions in relation to the NCCP were addressed at the workshop, with the majority in Queensland saying “all” questions had been answered.

Detailed summaries for each state / territory can be found below, as well as individual summaries of each of the regional meetings.

Addressing Concerns

From the 73 meetings held around Australia, a range of key themes were identified, with feedback from stakeholders and the community used to inform further stakeholder engagement, industry expert workshops and additional research initiatives. Many of the questions raised at the meetings are also being addressed directly in the Frequently Asked Questions published on the NCCP website - www.carp.gov.au

Scientific data and research findings, along with community feedback and ongoing stakeholder engagement, will be used to inform the recommendations made to governments in relation Australia's carp control options. The NCCP's goal is to recommend a smart, safe, effective and integrated suite of measures that, if adopted, would reduce carp impacts while protecting our rivers, our environment, our health, our communities and our economy.

Theme: Water Quality

Many participants questioned the possible impacts of the carp virus on water quality. Key topics from the meetings included:

- Is the NCCP considering secondary pathogen such as botulism?
- What is the potential for black water events?
- What will be the long-term improvement to water quality if carp are removed?
- What is the risk of algal blooms if the virus is released?
- What will be the impact of poor water quality on native fish?
- What effect will the virus release/dead carp have on water quality?
- How long will water quality be impacted for?
- What will be the impact to drinking water, irrigation and livestock?
- What will happen to water supplies if the carp virus is released?
- What alternative water supply will be available if needed?

The NCCP is already exploring many of these topics under its current research program, with projects of particular relevance including:

- *Investigation of nutrient interception pathways to enable circumvention of cyanobacterial blooms following carp mortality events.* The aim of this project is to determine how mass mortality of carp following CyHV-3 release may affect nutrient concentrations and the implications for cyanobacterial growth.
- *Expanded modelling to determine anoxia risk in main river channel and shallow wetlands.* This research is designed to predict the impact of mass carp mortality on the dissolved oxygen (DO) concentration of wetlands, rivers and floodplain habitats.
- *Social, economic, and ecological risk assessment for use of Cyprinid herpesvirus 3 (CyHV-3) for carp biocontrol in Australia.* This project will develop a systematic and quantitative risk assessment evaluating the ecological, social, and economic risks associated with the use the carp virus as a biocontrol agent.

- *Risks, Costs, and Water Industry Response.* Commissioned as a direct result of NCCP engagement with key stakeholder groups, this project will investigate how a mass fish kill could impact the water treatment process and facilities. It will also explore secondary infection risks to humans and livestock should the carp virus be released.
- *The likely medium-to long-term ecological outcomes of major carp population reductions.* The aim of this project is to develop data-informed conceptual maps to describe key system processes and relationships relevant to carp control, enabling consideration of the likely direction and magnitude of ecological responses over medium and long-term timescales.

What we will know about the possible impacts of the carp virus on water quality at the conclusion of this research:

- The flow conditions that allow temperature stratification to develop or erode so that a flow and mixing criterion can be developed to control cyanobacterial growth in rivers. Identification of risk hotspots for clean-up prioritisation.
- How dissolved oxygen in different habitats responds to changes in hydrologic flushing, temperature, and dead carp accumulation. Identification of risk hotspots for clean-up prioritisation.
- Identification and assessment of key stakeholders and ecological values that could potentially be directly or indirectly affected by carp and the potential introduction of the virus for carp biocontrol.
- The potential increase in the cost of water treatments processes from virus release, how this may impact water supply and any potential risks for water industry employees. The likelihood of secondary infection risks to humans and livestock should the carp virus be released.
- Predictions for medium to long-term ecological responses to potential carp reduction scenarios.

Theme: The Carp Virus

The carp virus [Cyprinid herpesvirus 3 (CyHV-3)] and how it works was also discussed at the meetings. Some of the questions raised included:

- What is the risk of the virus mutating?
- How will the virus spread?
- Will carp develop a resistance/immunity to the virus?
- What can we learn from other countries that have the carp virus about carp biomass projections over the next 20 years?
- How contagious or containable is the virus?

- How long does the virus take to affect an infected carp and how long do they carry the virus?
- What will happen if other species eat infected carp?
- Does the virus affect the taste of fish for water birds and predators?
- What are the chances of the carp virus turning up in Australia anyway?
- Will all states and territories need to agree to release of the carp virus?
- Do we have a clear understanding of the vulnerability of carp to the virus?
- How is the virus transmitted? Is virus efficiency impacted by water temperature?
- How will the virus work in salt affected ecosystems?
- Is there more than one strain of the virus?
- Will there be outbreaks in future years?

The following research projects are investigating some of these subjects:

- *Development of hydrological, ecological, and epidemiological modelling to inform a CyHV-3 release strategy for the biocontrol of carp in the Murray-Darling Basin.* The project team will undertake hydrological, ecological, and epidemiological modelling to predict outcomes of viral release scenarios and includes experts on rivers and waterways, fish biology, virology, disease spread (“epidemiology”) and computing programming.
- ❓ *Essential studies on Cyprinid herpesvirus 3 (CyHV-3) prior to release of the virus in Australian waters.* This project will use genetic studies to determine if CyHV-3 is already present in Australia and identify any other viruses that could make CyHV-3 more virulent, investigate direct and indirect virus transmission rates and test the viability of the virus in a range of conditions. **Jen to confirm scope once final.**
- ❓ *Defining best practice for viral susceptibility testing of non-target species to Cyprinid herpesvirus 3 -a discussion paper based on systematic quantitative literature reviews.* This project will use quantitative literature reviews to produce a discussion paper which address five key questions which arose from stakeholder concerns around the validity of previous susceptibility testing of non-target species to CyHV-3.

What we will know about the carp virus at the conclusion of this research:

- Where and when to release the carp virus to maximise the removal of carp while minimising economic, ecological and social risks using a combination of epidemiological, water quality and risk models.
- How the virus might work in a range of real life scenarios - which will be used to inform release planning and clean up strategies.
- ❓ Clear recommendations for best practice in non-target species testing in future, and conclusions as to the appropriateness of previous testing completed on non-target species.

Theme: Economic, Social and Environmental Impacts

Should the carp virus be released, the possible economic, social and environmental impacts was discussed, specifically:

- What is the risk of E. coli for swimmers and water users?
- Will carp infected by the virus sink or float when they die?
- Will water access be restricted during clean-up?
- Is there a potential for dead carp to choke up fishways?
- What about the short-term impacts for waterway users and businesses?
- What will the cost to government be in the case of an early, unexpected clean-up?
- How will trout fishing be affected?
- What is the risk to tourism from the carp virus?
- Are the costs of release and clean-up being considered?
- What will be the impact on irrigators due to dead carp blocking filters?
- Will additional water treatment be required and what will be the cost?
- Could the virus impact RAMSAR sites?
- What will be the impact on commercial fishers and connected industries?
- What will be the impact on wildlife? What about birds that eat carp?
- What is the risk to marine life especially native fish species?
- Has there been research overseas on the carp virus impacts on other species?
- Different calicivirus strains kill different animals. How can we be sure the carp virus doesn't do the same?
- What about the risk to livestock (i.e. botulism)?
- Will the virus impact goldfish and other aquarium fish?
- What will be the impact of fewer carp on water birds, pelicans and the food web?
- Has it been investigated?

The following research projects under the NCCP are investigating some of these subjects:

- *Social, economic, and ecological risk assessment for use of Cyprinid herpesvirus 3 (CyHV-3) for carp biocontrol in Australia.* The project will develop a systematic and quantitative risk assessment evaluating the ecological, social, and economic risks associated with the use the carp virus as a biocontrol agent.
- *Building community support for carp control: understanding community and stakeholder attitudes and assessing social effects.* This project will, together with the broader consultation, ensure that all stages of the development of the National Carp Control Plan are informed by a thorough understanding of the potential benefits and costs of carp control for different groups and communities, and can address these.
- *Risks, Costs, and Water Industry Response.* Commissioned as a direct result of NCCP engagement with key stakeholder groups, this project will investigate how a mass fish kill could impact the water treatment process and facilities. It will also explore secondary infection risks to humans and livestock should the carp virus be released.
- *The likely medium- to long-term ecological outcomes of major carp population reductions.* The aim of this project is to develop data-informed conceptual maps to

describe key system processes and relationships relevant to carp control, enabling consideration of the likely direction and magnitude of ecological responses over medium and long-term timescales.

- *Assessment of Options for Utilisation of Virus Infected Carp.* This project will investigate the logistical and economic feasibility of a range of possible outcomes for the large volumes of carp biomass expected from the possible release of carp biocontrol.
- ❓ *Impact Costs of Carp & Expected Benefits and Costs Associated with Carp Control in the Murray Darling Basin.* This project addresses the costs caused by carp and the costs and benefits that are likely to emanate from implementing the National Carp Control Plan.
- ❓ *Investigation of nutrient interception pathways to enable circumvention of cyanobacterial blooms following carp mortality events.* The aim of this project is to determine how mass mortality of carp following CyHV-3 release may affect nutrient concentrations and the implications for cyanobacterial growth.
- ❓ *Expanded modelling to determine anoxia risk in main river channel and shallow wetlands.* This research is designed to predict the impact of mass carp mortality on the dissolved oxygen (DO) concentration of wetlands, rivers and floodplain habitats.

What we will know about the possible economic, social and environmental impacts of the carp virus (should it be released) at the conclusion of this research:

- Key stakeholders and ecological values that could potentially be directly or indirectly affected by carp and the potential introduction of the virus for carp biocontrol.
- A thorough understanding of the potential benefits and costs of carp control for different groups and communities.
- The potential increase in the cost of water treatments processes from virus release, how this may impact water supply and any potential risks for water industry employees. The likelihood of secondary infection risks to humans and livestock should the carp virus be released.
- Predictions for medium to long-term ecological responses to potential carp reduction scenarios.
- The costs and benefits of possible carp biomass processes for large volumes of carp including attention to harvest strategies and logistics at various locations.
- ❓ The costs and benefits of carp impacts and carp control in the Murray Darling Basin.

- ❓ The flow conditions that allow temperature stratification to develop or erode so that a flow and mixing criterion can be developed to control cyanobacterial growth in rivers. Identification of risk hotspots for clean-up prioritisation.
- ❓ How dissolved oxygen in different habitats responds to changes in hydrologic flushing, temperature, and dead carp accumulation. Identification of risk hotspots for clean-up prioritisation.

Theme: Virus Release, Clean Up Strategies and Biomass Utilisation

How the carp virus might be released, possible clean up strategies and biomass utilisation were topics of discussion at many workshop sessions. Questions included:

- What about uncontrolled release of the virus. Is this a consideration?
- What's the strategy for release of the virus regionally and nationally?
- How will further releases of the virus be controlled?
- How will you stop the virus being spread from one release site to another area?
- Can you explain how e-flows will be used to help virus release and clean-up?
- What about carp in dams and floods releasing those carp into waterways?
- What about the potential spread of disease from infected or dead carp?
- How will odour problems from rotting fish be managed for people living near waterways?
- Won't the sight and smell of dead fish drive people/tourists away?
- How will the clean-up be managed, who is responsible and what is the cost?
- What about waterways that are inaccessible or on private property? How will clean-up be managed at those sites?
- How does the NCCP propose to maintain water quality?
- What role will the community play in the clean-up?
- When fish come in contact with the virus, do they sink or float?
- How will carp biomass be used?

Many of these issues are currently being explored through NCCP research projects including:

- *Engineering options for the National Carp Control Plan.* This project involved a workshop with a wide range of technical, scientific and logistics experts to identify carp biomass clean up ideas, tactics and techniques should the virus be released.
- *Development of strategies to optimise release and clean up strategies underpinning possible use of herpesvirus 3 (CyHV-3) for carp biocontrol in Australia.* This project will systematically seek and evaluate published material on fish-kill clean-up, and will also consult directly with those experienced in this area (including fish farmers, commercial fishers and water infrastructure operators). Knowledge from the project

will enable the NCCP to learn from previous fish kill clean-up experience, informing development of appropriate and feasible clean-up strategies.

- *Impact Costs of Carp & Expected Benefits and Costs Associated with Carp Control in the Murray Darling Basin.* This project addresses the costs caused by carp and the costs and benefits that are likely to emanate from implementing the National Carp Control Plan.
- *Assessment of Options for Utilisation of Virus Infected Carp.* This project will investigate the logistical and economic feasibility of a range of possible outcomes for the large volumes of carp biomass expected from the possible release of carp biocontrol.
- ❓ *Investigation of nutrient interception pathways to enable circumvention of cyanobacterial blooms following carp mortality events.* The aim of this project is to determine how mass mortality of carp following CyHV-3 release may affect nutrient concentrations and the implications for cyanobacterial growth.
- ❓ *Expanded modelling to determine anoxia risk in main river channel and shallow wetlands.* This research is designed to predict the impact of mass carp mortality on the dissolved oxygen (DO) concentration of wetlands, rivers and floodplain habitats.
- ❓ *Risks, Costs, and Water Industry Response.* This project will investigate how a mass fish kill could impact the water treatment process and facilities. It will also explore secondary infection risks to humans and livestock should the carp virus be released.

What we will know about virus release, clean up strategies and biomass utilisation at the conclusion of this research:

- Possible clean up strategies to directly inform the NCCP Operations Strategy.
- Learnings from previous fish kill clean-up experience, informing development of appropriate and feasible clean-up strategies.
- The costs and benefits of carp impacts and carp control in the Murray Darling Basin.
- The costs and benefits of possible carp biomass processes for large volumes of carp including attention to harvest strategies and logistics at various locations.
- ❓ The flow conditions that allow temperature stratification to develop or erode so that a flow and mixing criterion can be developed to control cyanobacterial growth in rivers. Identification of risk hotspots for clean-up prioritisation.
- How dissolved oxygen in different habitats responds to changes in hydrologic flushing, temperature, and dead carp accumulation. Identification of risk hotspots for clean-up prioritisation.

- ❓ The potential increase in the cost of water treatments processes from virus release, how this may impact water supply and any potential risks for water industry employees. The likelihood of secondary infection risks to humans and livestock should the carp virus be released.

Theme: Human Health Considerations

Human health considerations and questions about how the carp virus might impact the wellbeing of individuals and communities were raised including:

- What are the occupational, health and safety considerations for volunteers?
- How is the NCCP engaging with Indigenous communities?
- What about water quality? Can the virus impact humans from drinking water with infected carp in it?
- What happens if I eat virus infected carp?
- What will be the impact on town water supplies?
- What about the bacteria associated with infected fish?
- How confident are you that the virus can't be transferred to humans?

The following research projects under the NCCP are investigating some of these subjects:

- ❓ *Cyprinid herpesvirus 3 and its relevance to humans.* This project has reviewed the potential impact on human health from the release of the carp virus into Australian inland water systems. While multiple lines of evidence reviewed as part of this project and externally suggest that the carp virus does not affect humans, further work is currently underway to understand the risks around secondary potential infections that could arise from large nutrient inputs.
- ❓ *Risks, Costs, and Water Industry Response.* This project will investigate how a mass fish kill could impact the water treatment process and facilities. It will also explore secondary infection risks to humans and livestock should the carp virus be released.
- ❓ *Social, economic, and ecological risk assessment for use of Cyprinid herpesvirus 3 (CyHV-3) for carp biocontrol in Australia.* This project will develop a systematic and quantitative risk assessment evaluating the ecological, social, and economic risks associated with the use the carp virus as a biocontrol agent.

What we will know about the possible impact of the carp virus on human health at the conclusion of this research:

- A risk assessment of the potential impact on human health from the release of the virus into Australian inland water systems.
- The potential increase in the cost of water treatments processes from virus release, how this may impact water supply and any potential risks for water industry employees. The likelihood of secondary infection risks to humans and livestock should the carp virus be released.

- Key stakeholders and ecological values that could potentially be directly or indirectly affected by carp and the potential introduction of the virus for carp biocontrol.

Theme: Waterways with Fewer Carp

How waterways may change with reduced carp numbers was also a topic of interest. Some of the questions included:

- Will the number of other pest species increase with the reduction in carp numbers?
- How long will it take for the water system to recover once carp are removed?
- What plans are in place to support the restoration of waterways once carp are removed?
- Will native fish species replace carp?

The following research project is investigating some of these questions:

- ② *The likely medium-to long-term ecological outcomes of major carp population reductions.* The aim of this project is to develop data-informed conceptual maps to describe key system processes and relationships relevant to carp control, enabling consideration of the likely direction and magnitude of ecological responses over medium and long-term timescales.

What we will know about the possible ecological impact of reduced carp numbers at the conclusion of this research:

- ② Predictions for medium to long-term ecological responses to potential carp reduction scenarios.

Conclusion

The National Carp Control Plan wishes to acknowledge communities and stakeholders for their involvement and contributions to shaping a robust set of recommendations to governments.

These 73 meetings form part of a much broader stakeholder and community engagement program being rolled out by the NCCP, which includes stakeholder and community presentations, social research surveys, field trials and workshops industry event attendance and targeted engagement with impacted industries.

By enabling risks to be identified and concerns to be shared the NCCP is able to work with industry and communities to explore ways for these to be best managed.

It is positive that some of the findings noted in this consultation report are supported by the same sentiments and feedback the NCCP is hearing from peer researchers and scientists, stakeholders and interested parties. It reaffirms that our focus is correct and we're addressing the right areas.

It is an important consideration for our nation, and one that must deliver long term improvements to our waterways. It is important to remember no decision has been made in relation to carp control, or the possible release of the carp virus. The NCCP is tasked with delivering a set of recommendations to governments. These recommendations will be considered by all state/territory governments, as well as the Federal Government before a decision is made.

If you did not have the opportunity to attend on our initial roadshow events, it is not too late to have your say on carp control in Australia. A number of dedicated NCCP channels remain open for community and stakeholder feedback, including:

Email: carp@frdc.com.au
Phone: 1800 CARP PLAN (1800 2277 7526)
Online: Register at www.yoursay.carp.gov.au

We encourage you to share your comments, suggestions or concerns or to ask our team a question.



Stakeholder Engagement (Community Consultation) Report

National Carp Control Plan

Seftons

August 2018

FRDC Project No 2016/167

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National Carp Control Plan Stakeholder Engagement (Local Government) Report

FRDC Project No **2016/167**

2018

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Researcher Contact Details

Name: Seftons
Address: 21 Bourke St
Tamworth NSW 2340
Phone: 02-6766 5222
Fax:
Email: jayne.goldring@seftons.com.au

FRDC Contact Details

Address: 25 Geils Court
Deakin ACT 2600
Phone: 02 6285 0400
Fax: 02 6285 0499
Email: frdc@frdc.com.au
Web: www.frdc.com.au

In submitting this report, the researcher has agreed to FRDC publishing this material in its edited form.

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Executive Summary

What the report is about

Strategic communication company Seftons was engaged by the Fisheries Research and Development Corporation (FRDC) in June 2017 to undertake a five-month communications program, managing communications strategies and activities for the National Carp Control Plan (NCCP). The program built on recommendations in the National Stakeholder Engagement and Communications Strategy developed by NCCP.

This document reports only on the activities undertaken by Seftons in relation to Community Consultation, as part of the overall program, for the information of FRDC.

It is not a report of consultation findings.

Engagement activities included 73 stakeholder workshops and community meetings held throughout carp affected areas in Queensland, New South Wales, the ACT, Victoria and South Australia during 2017 and 2018.

Seftons is reporting separately on the full communications program and the process of council consultation. The three reports will form a summary of all the work undertaken by Seftons for the NCCP in relation to communication and stakeholder engagement.

Background

The overarching communications program was designed to re-align messaging about the NCCP, ensure the necessary foundations were laid with key stakeholders, and that stakeholders understood the purpose of the NCCP, its objectives, and scope of work. The NCCP is also committed to understanding the impacts of carp on local communities throughout Australia.

Aims/objectives

The main objective of this project is to engage with community members and stakeholder groups throughout Australia on the National Carp Control Plan (NCCP) so that they could learn about the process of the NCCP and its scope of work.

This project sits within a larger NCCP communication and engagement project that has the following objectives:

- To inform and engage communities and stakeholders about the NCCP
- To widely communicate the NCCP process
- To provide opportunities for community input into the NCCP
- To ensure the public information sessions are effective, informative, respectful, clear and professional
- To accurately capture and reflect the range of community/stakeholder opinions
- To continue positioning FRDC as an organisation genuinely committed to consultation
- To manage and deliver the project with a high degree of professionalism.

Objectives specifically relating to Community Consultation included:

- To explain the history of carp control in Australia, the challenges the pest species present, the scope of the NCCP program and some specifics around the research underway.
- To allow participants to ask questions, raise concerns and contribute to the development of the National Carp Control Plan.

Methodology

- NCCP advised Seftons that they wanted to meet with communities impacted by carp to brief them on the work of the NCCP and better understand the impacts carp on a local level.
- NCCP advised Seftons that an appropriate partner to undertake this engagement were the NRMs as was in each state area, in particular the TriState Alliance.
- NCCP met with representatives of the Tristate Alliance to gauge their interest in participating in community engagement. TriState Alliance supported and agreed in principal.
- NCCP agreed to provide a budget per meeting to cover venue hire and catering – with NRMs were responsible for managing venue booking, event organisation, guest invitations and rsvps.
- NRMs nominated the regions in their state where meetings should be held and the NCCP worked with them to ensure the number of meetings and locations reflected the available timeframe and budget allocations.
- Seftons developed a briefing kit for each NRM group containing an overview of the event, a template invitation for stakeholders, template media release, and a template advertisement for local newspapers. NRMs could then tailor and distribute these templates to promote the event.
- Seftons met with each NRM representative to brief them on the event and ensure they had the tools required to commence organising their local meetings.
- Most locations comprised a 12pm to 4pm stakeholder only invitation event, followed by a 6pm to 8pm public meeting. Where population sizes were low – only one meeting was organised. Formats for the Stakeholder Workshops and Community Meetings is detailed on [Page X](#).

Results/key findings

The focus of activity in this project was to engage with local community members and stakeholder groups. The meetings were hosted by each jurisdictional NRM, in collaboration with NCCP and state and territory government departments.

The results of engagement activities were:

- Consultation sessions held in 2017 and 2018 reached 1,433 people through a series of 73 individual meetings.
- 33 stakeholder workshops were held (in conjunction with NRM bodies and state government) with 548 attendees.
- 40 community meetings were held for interested members of the general public with 849 attendees.
- Regional meeting locations and number of sessions were informed by the relevant jurisdictional bodies.
- Key themes and questions emerging from the sessions about potential carp biocontrol related to:
 - Water Quality;
 - The Carp Virus;
 - Economic, Social and Environmental Impacts;
 - Virus Release, Clean Up Strategies and Biomass Utilisation;
 - Human Health Considerations; and
 - Waterways with Fewer Carp.

Discussion and conclusion

Almost 1,500 people participated in the stakeholder and community meetings, comprising of community /recreational users, environmental advocates, farmers/irrigators, water authority representatives, commercial fishers, business owners, tourism operators, traditional owners, natural resource management representatives as well as local, state and federal government representatives.

Nationally, the aspects of most interest or concern to participants included:

- The impact possible release of the carp virus will have on water quality;
- The economic impact on industry; and
- The proposed clean-up strategies being considered as part of the plan.

These concerns varied slightly from state to state:

- Economic impact on industry was the main focus in the Australian Capital Territory and South Australia
- The impact on water quality the top concern in New South Wales and Queensland
- While in Victoria it was the clean-up strategy
- Queensland and Victoria also noted the recovery of rivers as a primary focus as well.

Overall, most participants reported sourcing their knowledge on carp impacts and carp control from the NCCP, while in NSW and Queensland an equal source was natural resource management bodies, and in Victoria traditional media (newspapers, radio and television) was an equal information source. In South Australia, the main source for information was the state government.

If a virus release was determined as the most appropriate method to control carp and subsequently released, state government was considered best suited to plan and coordinate the overarching clean-up strategy in three of the five states (NSW, SA and Victoria); these same three states also considered commercial operators (such as commercial fishers and contractors) the best suited for on-the-ground clean-up activities.

Both the ACT and Queensland considered local government the best suited to plan and coordinate the overarching clean-up strategy, with both also considering local government the best body for on-the-ground clean-up activities, although Queensland equally considered volunteers in this role.

Four of the five jurisdictions visited considered that “most” of their questions in relation to the NCCP were addressed at the workshop, with the majority in Queensland saying “all” questions had been answered.

From the 73 meetings held around Australia, a range of key themes were identified, with feedback from stakeholders and the community being used to inform further stakeholder engagement, industry expert workshops and additional research initiatives.

Many of the questions raised at the meetings are also being addressed directly in the Frequently Asked Questions published on the NCCP website - www.carp.gov.au

Scientific data and research findings, along with community feedback and ongoing stakeholder engagement, will be used to inform the recommendations made to governments in relation Australia’s carp control options.

Implications and recommendations

The NCCP should maintain and further leverage the relationships that have been built with stakeholder groups, community members and local NRMs through this engagement process. Key themes outlined in the Community Consultation Report will allow the NCCP to understand the risks and concerns associated with possible implementation of carp biocontrol and work with stakeholders and communities to explore how these may be managed.

Keywords

[Keywords section needs to include key subject areas and species name (see www.fishnames.com.au for standard fish name)]

European carp, *Cyprinus carpio*, consultation, local government.

Introduction

Strategic communication company Seftons was engaged by the Fisheries Research and Development Corporation (FRDC) in June 2017 to undertake a five-month communications program, managing communications strategies and activities for the National Carp Control Plan (NCCP). The program built on recommendations in the National Stakeholder Engagement and Communications Strategy developed by NCCP.

The overarching communication program was designed to re-align messaging about the NCCP, ensure the necessary foundations were laid with key stakeholders, and that stakeholders understood the purpose of the NCCP, its objectives, and scope of work.

Local engagement with stakeholders and communities living in carp affected areas was identified as important for the NCCP in understanding more about the impacts of the invasive species and concerns associated with the possible use of biocontrol.

Objectives

The main objective of this project is to engage with communities and stakeholders throughout Australia on the National Carp Control Plan (NCCP) so that they could learn about the process of the NCCP and its scope of work.

This project sits within a larger NCCP communication and engagement project that has the following objectives:

- ☐ To inform and engage communities and stakeholders about the NCCP
- ☐ To widely communicate the NCCP process
- ☐ To provide opportunities for community input into the NCCP
- ☐ To ensure the public information sessions are effective, informative, respectful, clear and professional
- ☐ To accurately capture and reflect the range of community/stakeholder opinions
- ☐ To continue positioning FRDC as an organisation genuinely committed to consultation
- ☐ To manage and deliver the project with a high degree of professionalism.

Specifically, this project is in the context of stakeholder engagement activities that aim to:

- ☐ Establish and maintain effective and enduring relationships with key stakeholders for the life of the program
 - ☐ Facilitate processes that encourage stakeholders to contribute their knowledge and understanding of local issues and impacts
 - ☐ Influence decision making and effectively contribute toward the delivery of the best possible program outcomes
 - ☐ Raise awareness across key stakeholders and the broader community about the program, its processes and objectives by December 2018 through a targeted communications strategy which includes agreed key messages and a range of tailored communications products and activities
 - ☐ Build a mandate for recovery of native species and habitats in targeted freshwater river systems and waterways within key stakeholder groups and the broader community through biological control and other control measures outlined in the NCCP by December 2018
 - ☐ Foster support for the process and build trust in the program within key stakeholder groups and the broader community by December 2018.
-

Method

- NCCP advised Seftons that they wanted to meet with communities impacted by carp to brief them on the work of the NCCP and better understand the impacts carp on a local level.
- NCCP advised Seftons that an appropriate partner to undertake this engagement were the NRMs was the in each state area, in particular the TriState Alliance. TriState Alliance is a group comprising of three states – NSW, VIC and SA - that sit across the NRMs and covers major carp impacted areas across Australia.
- NCCP met with representatives of the Tristate Alliance to gauge their interest in participating in community engagement. TriState Alliance supported and agreed in principal.
- NCCP agreed to provide a budget per meeting to cover venue hire and catering – with NRMs were responsible for managing venue booking, event organisation, guest invitations and rsyps.
- NRMs nominated the regions in their state where meetings should be held and the NCCP worked with them to ensure the number of meetings and locations reflected the available timeframe and budget allocations.
- Seftons developed a briefing kit for each NRM group containing an overview of the event, a template invitation for stakeholders, template media release, and a template advertisement for local newspapers. NRMs could then tailor and distribute these templates to promote the event.
- Seftons met with each NRM representative to brief them on the event and ensure they had the tools required to commence organising their local meetings.
- Most locations comprised a 12pm to 4pm stakeholder only invitation event, followed by a 6pm to 8pm public meeting. Where population sizes were low – only one meeting was required. The format of Stakeholder Workshops and Community Meetings was as follows:

Stakeholder Workshop - Run Sheet

Time	Overview	Responsibility
12pm – 12.10pm (10 minutes)	Welcome and introductions	Seftons
12.10pm – 12.50pm (40 minutes with 10 mins Q&A)	<ul style="list-style-type: none"> • Carp in Australia • Methods for controlling carp • About the virus <ul style="list-style-type: none"> ○ How effective is it? ○ How does it spread? ○ Safety for other species • Introducing the NCCP <ul style="list-style-type: none"> ○ Purpose ○ Scope of work ○ Timeline ○ Research underway, and informing decision-making • Developing a strategy for release and clean up • What does success look like for the NCCP? • Promoting recovery of native communities • Q&As 	Matt Barwick, NCCP

1.00pm – 1.15pm (20 minutes)	<ul style="list-style-type: none"> • What else has to be done? What else needs to be done? • Local insights into the issue in their region • Showcase what the relevant NRM group and/or state agency have undertaken to date to recover natural fish in the region 	NRM Group Delegate/State government representative
1.15pm – 1.30pm	Break	
1.30pm – 2.15pm (45 minutes)	<p>Facilitated Session</p> <ul style="list-style-type: none"> • Mapping exercise to validate carp presence/absence in the community • Facilitator to request input from audience on carp presence, absence and abundance using coloured dots - may be split into small groups to plot this information on large scale laminated maps for each group. • Individual groups come back together to share and discuss this information and NCCP to use content to input into digital mapping tool post workshop 	Seftons with NRM Group and NCCP
2.15pm – 2.45pm (30 minutes)	<p>Facilitated Session</p> <ul style="list-style-type: none"> • Interactive session asking participants to share ‘where’s important’ for the local community from a human amenity perspective using criteria within the table below. • Facilitator to request input from audience on human amenity values*, using existing priority area table developed by NSW OWG member, and augmenting with information collected by splitting participants into small groups to plot additional information on large scale laminated maps for each group. • Individual groups come back together to share and discuss this information and NCCP to use content to input into digital mapping tool post workshop 	Seftons with NRM Group and NCCP
2.45pm – 3.15pm (30 minutes)	<p>Facilitated Session</p> <ul style="list-style-type: none"> • Ask audience if they know of any more for their individual regions – capture this feedback • Identify community leaders / champions for NCCP in the region • Identify existing community communications channels to utilise for sharing information / resources 	Seftons with NRM Group and NCCP

3.15pm-4pm <i>(45 minutes)</i>	Facilitated Session <ul style="list-style-type: none"> • Q&A with the experts – opportunity to ask NCCP and NRM Group questions /provide more general feedback • Outline of next steps and how communication can continue 	Seftons with NRM Group and NCCP
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Community Meeting – Run Sheet

Time	Overview	Responsibility
6.00pm – 6:30pm <i>(30 minutes)</i>	Introductions <ul style="list-style-type: none"> • Purpose of the meeting • Carp in Australia • Methods for controlling carp • About the virus <ul style="list-style-type: none"> ○ How effective is it? ○ How does it spread? ○ Safety for other species • Introducing the NCCP <ul style="list-style-type: none"> ○ Purpose ○ Scope of work ○ Timeline • Research underway, and informing decision-making • Developing a strategy for release and clean up • What does success look like for the NCCP? <ul style="list-style-type: none"> ○ Promoting recovery of native communities 	Matt Barwick, NCCP
6:30pm – 7.00pm <i>(30 minutes)</i>	Introductions <ul style="list-style-type: none"> • NRM Group to give local context • Showcase what NRM Group has been doing to manage native fish / aquatic health to date • The challenges and opportunities that still exist • Desire of NRM Group to continue to collaborate with community to reach a mutual solution • Purpose of the meeting is to hear your thoughts, opinions and suggestions 	NRM Representative State Government Representative

7.00pm – 8.00pm (1 hour)	<p>General Information Seeking / Discussion</p> <ul style="list-style-type: none"> Attendees to share information on key local assets / risks that require consideration for planning Attendees invited to share or plot on large maps locations in their community known for carp – located at tables nearby Attendees also invited to share / plot on large maps the locations in the community of significant importance to them that the NCCP should consider in its recommendations to governments. Share more general feedback Identify existing local community networks to continue communication /engagement Ask Q&A of experts Capture suggestions and recommendations 	Robbie Sefton, Facilitator
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Results

Nationally, the National Carp Control Plan (NCCP) sessions in 2017 and 2018 reached 1,433 people through a series of 73 meetings.

Summary of Meetings & Participants

There were two types of meetings held:

Stakeholder Workshop Meetings: Nationally, 33 meetings were held in conjunction with natural resource management bodies and state government. These were held from noon-4pm and were by invitation to a broad range of stakeholders: water authorities, commercial fishers, aquaculture farmers, farmer-irrigators, business owners, traditional owners, environmental advocacy groups, natural resource management bodies local, state and federal government and community-recreational users.

Community meetings: These meetings were open to the public, with 40 held nationally for interested members of the general public, as well as any stakeholders or industry representatives unable to attend a stakeholder workshop. They were traditionally held at a public venue from 6-8pm.

NCCP was guided by the relevant jurisdictional bodies as to the regional locations for these meetings and the number of meetings that were required. Not all locations hosted both a stakeholder and community meeting, this was at the discretion of the relevant jurisdictions and determined based on a range of factors including expressed level of interest, population size of town, number of stakeholders to name a few.

	ACT	NSW	Qld	SA	Vic	Total
Number of events held in each jurisdiction	2	31	10	7	23	73
Attendees across state	83	630	118	178	424	1,433
Most frequent issues raised	economic impact on industry	impact on water quality	impact on water quality	economic impact on industry	clean-up strategies	
	impact on water quality	economic impact on industry	economic impact on industry	impact on water quality	impact on water quality	
	the clean-up strategies	impact on other animals	human-health considerations		human-health considerations	
		clean-up strategies				

National Summary of Stakeholder Workshops

Across Australia, 33 Stakeholder Workshops were held, with 584 attendees.

Stakeholders could register their interest in attending a workshop, with invitations also being sent to a broad range of stakeholders in each region including water authorities, commercial fishers, aquaculture farmers, farmer-irrigators, business owners, traditional owners, environmental advocacy groups and natural resource management bodies local, as well as all levels of government and community-recreational users.

The main focus point of concern across the states/territories was the clean-up strategy, followed by the recovery of rivers, virus evolution and whether the water is fit for human use following potential release of the carp virus.

Most participants at the stakeholder workshops stated they sourced their knowledge in relation to proposed carp control from the NCCP, while in NSW and Queensland an equal source were natural resource management bodies, and in Victoria it was equally traditional media (radio, print and television). In SA, the main source of information was noted as the state government.

If a virus release occurs, state government was considered the best suited to plan and coordinate the overarching clean-up strategy in three of the five states (NSW, SA and Victoria); these same three states also considered commercial operators (such as commercial fishers and contractors) the body best for on-the-ground clean-up activities. Both the ACT and Queensland considered local government the best suited to plan and coordinate the overarching clean-up strategy, with both also considering local government the body best for on-the-ground clean-up activities, although Queensland equally considered volunteers in this role.

The majority of participants in Queensland said “all” questions had been answered in relation to the NCCP at the workshop, while the four remaining states and territories considered that “most” of their questions were addressed.

Post workshops, the primary focus of concern was the clean-up strategy in the ACT, NSW and SA; while in Queensland and Victoria it was the recovery of rivers.

Following are summaries of each jurisdictional meeting.

	ACT	NSW	QLD	SA	VIC	Total
Number of events	1	13	5	3	11	33
Total at Stakeholder Workshops	39	204	78	32	231	584
Prior knowledge of the NCCP: when participants were asked what their knowledge of the NCCP was, the majority responded:	moderate	limited	moderate, closely followed by limited	limited	Limited	
Majority of participants sourced information from	NCCP	equally NCCP and NRM bodies	both NCCP and NRM	state government	equally NCCP and traditional media	
Main focus points of concern	clean-up strategy	clean-up strategy	clean-up strategy	clean-up strategy	clean-up strategy	
If a decision was made post reviewing the research + findings for a planned virus release, the body best suited to plan + coordinate the overarching	local govt	state govt	local govt	state govt	state govt	

clean-up strategy is						
If a decision was made post reviewing the research + findings for a planned virus release, the body best suited to on-the-ground clean-up activities is	local govt	commercial operators	equally local government and volunteers	commercial operators	commercial operators	
Degree to which questions in relation to the NCCP were addressed at the workshop	most	most	all	most	Most	
Primary focus of concern post workshop	clean-up strategy	clean-up strategy	recovery of rivers	clean-up strategy	recovery of rivers	

National Summary of Community Meetings

Across Australia, 40 Community Meetings were held, typically from 6-8pm at public venues and were open to everybody who was interested, with no invitation required. A total of 849 people attended. Most participants nationally were community/recreational users, although a variety of different interest areas were represented: water authorities, commercial fishers, aquaculture farmers, farmer-irrigators, business owners, traditional owners, environmental advocacy groups and natural resource management bodies local, as well as all levels of government. Knowledge levels were “limited” in three of the five states (NSW, Queensland and SA), although “moderate” in the ACT and evenly “moderate” and “limited” in Victoria.

There was a range of ways in which the general public attending could contribute feedback: questions at the session, post-meeting feedback forms and via keypad response data during the meeting. Feedback and contributions via all these methods was captured in this report.

The main focus point of concern across three of the five the states/territories was the clean-up strategy (ACT, Queensland and SA), while in NSW it was the virus evolution causing an impact on native fish and in Victoria it was how fewer carp might change our rivers.

As with the majority of stakeholders in Queensland, most Community Meeting participants said “all” their questions in relation to the NCCP were addressed at the meeting. In SA, this was evenly “all” and “most”, with the ACT, NSW and Victoria all saying “most” of their questions had been answered.

Individual summaries of each meeting are detailed below.

	ACT	NSW	Qld	SA	Vic	total
Number of events	1	18	5	4	12	40
Total at Community Meetings	44	426	40	146	193	849
Knowledge of the NCCP: when participants were asked prior to the meeting what their knowledge of the NCCP was, the majority responded:	moderate	limited	limited	limited	evenly moderate and limited	
Main focus points of concern	clean-up strategy	virus evolution causing an impact on native fish	clean-up strategy	clean-up strategy	how fewer carp might change our rivers	
Degree to which questions in relation to the NCCP were addressed at the workshop	most	most	all	most + all	most	

A further breakdown of consultation findings by State/Territory and individual session are available in the *NCCP Stakeholder Workshops & Community Consultation Meetings Summary 2017-2018*.

Discussion and conclusion

Almost 1,500 people participated in the stakeholder and community meetings, comprising of community /recreational users, environmental advocates, farmers/irrigators, water authority representatives, commercial fishers, business owners, tourism operators, traditional owners, natural resource management representatives as well as local, state and federal government representatives.

Nationally, the aspects of most interest or concern to participants included:

- The impact possible release of the carp virus will have on water quality;
- The economic impact on industry; and
- The proposed clean-up strategies being considered as part of the plan.

These concerns varied slightly from state to state:

- Economic impact on industry was the main focus in the Australian Capital Territory and South Australia
- The impact on water quality the top concern in New South Wales and Queensland
- While in Victoria it was the clean-up strategy
- Queensland and Victoria also noted the recovery of rivers as a primary focus as well.

Overall, most participants reported sourcing their knowledge on carp impacts and carp control from the NCCP, while in NSW and Queensland an equal source was natural resource management bodies, and in Victoria traditional media (newspapers, radio and television) was an equal information source. In South Australia, the main source for information was the state government.

If a virus release was determined as the most appropriate method to control carp and subsequently released, state government was considered best suited to plan and coordinate the overarching clean-up strategy in three of the five states (NSW, SA and Victoria); these same three states also considered commercial operators (such as commercial fishers and contractors) the best suited for on-the-ground clean-up activities.

Both the ACT and Queensland considered local government the best suited to plan and coordinate the overarching clean-up strategy, with both also considering local government the best body for on-the-ground clean-up activities, although Queensland equally considered volunteers in this role.

Four of the five jurisdictions visited considered that “most” of their questions in relation to the NCCP were addressed at the workshop, with the majority in Queensland saying “all” questions had been answered.

From the 73 meetings held around Australia, a range of key themes were identified, with feedback from stakeholders and the community being used to inform further stakeholder engagement, industry expert workshops and additional research initiatives. Many of the questions raised at the meetings are also being addressed directly in the Frequently Asked Questions published on the NCCP website - www.carp.gov.au

Scientific data and research findings, along with community feedback and ongoing stakeholder engagement, will be used to inform the recommendations made to governments in relation Australia’s carp control options.

Implications and recommendations

The NCCP should maintain and further leverage the relationships that have been built with stakeholder groups, community members and local NRMs through this engagement process. Key themes outlined in the Community Consultation Report will allow the NCCP to understand the risks and concerns associated with possible implementation of carp biocontrol and work with stakeholders and communities to explore how these may be managed.

Further development

Not applicable to this project.

Extension and adoption

Not applicable to this project.

Project coverage

Please see the report NCCP Communications Program Report (FRDC project number 2016-189 for details of overall media coverage related to the NCCP. There is not specific media coverage for this component of the project.

Project materials developed

Communications materials developed in relation to NCCP Community Consultation included:

- Sample briefing kit
- Sample media release
- Sample ad template
- Sample invitation.

Please see the appendices for copies of these materials.

Appendix 1: Sample Briefing Kit



National Carp Control Plan Program

Workshops and Town Hall Meetings Briefing Kit

2017

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Overview

Purpose

The Australian Government has launched a nationally coordinated approach to develop a national plan to control carp, through a \$15 million National Carp Control Plan Program (NCCP) to be developed by the Fisheries Research and Development Corporation (FRDC) by late 2018.

The NCCP officially commenced in December 2016 and involves additional scientific research, Federal and State regulatory approvals, together with significant community engagement and communications. These activities support the development of a comprehensive operational plan for the potential release of *Cyprinid herpesvirus* (carp herpesvirus) which will be presented to the Australian Government by the end of 2018, as well as the management of any related disposal of carp bio mass and the long-term management of carp populations.

As part of the stakeholder engagement and communication activities a program of 29 Workshops and Town Hall meetings will be held in Queensland, NSW, Victoria, South Australia and Western Australia, which have been identified as regional Natural Resource Management areas likely to have an interest in this project.

Objectives

The aim of the Workshops is for NCCP participants to talk about the initiative and share the proposed approach with invited stakeholders as confirmed the planning team for each event. It will also be used to work with local communities to identify regions and issues of important to local communities in regional areas, and provide a deeper understanding as to why they are important. The seating will be in table and chairs for workshop style.

The Town Hall Meeting sessions will be held in the evening after the workshop and will give the general public and community members' opportunity to hear first-hand from NCCP participants about the background, context and desired outcomes of the NCCP as well as the proposed approach towards its development. The public information sessions must position the impact of carp as a whole of community issue, with all members of the community encouraged to participate in discussions. The Town Hall events will encourage questions from the audience as it is more an information sharing opportunity. Seating will be in theatre style. Audiences will register with an NRM group representative on arrival and then hear from the NCCP project team and NRM group.

Both events will be facilitated by Robbie Sefton, or another team member from Seftons, to guide events and shape outcomes.

Requirements

The NCCP project team will work closely with State leads and regional Natural Resource Management groups who will organise the Workshops and to identify suitable attendees. Attendance to Workshops will be by invitation only and include participants who have an interest in the project. The NRM group will liaise closely with the NCCP team as they are the project manager of these events.

Each location will host one invitation only Workshop from approximately 2.00pm to 6.00pm, followed by one Town Hall style meeting for members of the local community from 6.30pm to 8.30pm.

As part of the Town Hall consultations, a number of survey responders/keypads will be provided to audience members, with 50 available. Throughout the meeting a number of questions will be asked of the audience. This data will allow FRDC/NCCP to capture attitudes and opinions and benchmark against other regions. This will be guided by the facilitator.

Run Sheet - Workshop

Workshop – invitation only

Time	Overview	Responsibility
2pm – 2.10pm (10 minutes)	Welcome and introductions	Robbie Sefton
2.10pm – 2.40pm (30 minutes)	Overview of Carp challenge in our waterways <ul style="list-style-type: none">- Challenges and proposed solutions- What we know about the virus- The risks / benefits of the virus	Matt Barwick, NCCP
2.40pm – 3pm (20 minutes)	NRM Group Representative <ul style="list-style-type: none">- Local insights into the issue in their region- Showcase what the relevant NRM group has undertaken to date to recover natural fish in the region- What solutions may or may not work for their region	NRM Group Regional General Manager
3pm – 3.15pm (15 minutes)	State lead <ul style="list-style-type: none">- Government update- Importance of the NCCP	State government representative
3.15pm – 3.30pm (15 minutes)	Break	
3.30pm – 4.15pm (45 minutes)	Facilitated Session <ul style="list-style-type: none">- Interactive map of region displayed to demonstrate current known whereabouts of carp (Currently being tested by NCCP – use to be confirmed)- Facilitators to request input from audience on where else carp have been spotted – audience may be split into small groups to plot this information on large scale laminated maps for each group.	Robbie Sefton with NRM Group and NCCP

	<ul style="list-style-type: none"> - Individual groups come back together to share and discuss this information and update the digital map to reflect new locations 	
4.15pm – 4.45pm <i>(30 minutes)</i>	Facilitated Session <ul style="list-style-type: none"> - Overview of current protected species (NCCP to confirm relevance for each region) - Ask audience if they know of any more for their individual regions – capture this feedback 	Robbie Sefton with NRM Group and NCCP
4.45pm – 5.15pm <i>(30 minutes)</i>	Facilitated Session <ul style="list-style-type: none"> - Interactive session asking participants to share 'where's important' for the local community – where you fish, swim, play, use waterways for drinking / showering, irrigation etc. 	Robbie Sefton with NRM Group and NCCP
5.15pm-6pm <i>(45 minutes)</i>	Facilitated Session <ul style="list-style-type: none"> - Q&A with the experts – opportunity to ask NCCP and NRM Group questions - Outline of next steps and how communication can continue 	Robbie Sefton with NRM Group and NCCP

There will be a short break for workshop attendees to have a light meal, before the Town Hall events are to commence.

Run Sheet – Town Hall

Town hall meeting

Time	Overview	Responsibility
6.30pm – 7pm (30 minutes)	Introductions <ul style="list-style-type: none">- Purpose of the meeting- Role of the NCCP- NCCP objectives and key timings- Importance of communication and planning with community- Share visual aids – maps from earlier session, videos etc.	Matt Barwick, NCCP
7pm – 7.30pm (30 minutes)	Introductions <ul style="list-style-type: none">- NRM Group to give local context- Showcase what NRM Group has been doing to manage native fish to date- The challenges and opportunities that still exist- Desire of NRM Group to continue to collaborate with community to reach a mutual solution- Purpose of the meeting is to hear your thoughts, opinions, concerns and suggestions	NRM Group Regional GM
7.30pm – 8.30pm (1 hour)	Open Discussion <ul style="list-style-type: none">- Opportunity to share feedback- Ask Q&A of experts- Capture suggestions and recommendations	Robbie Sefton, Facilitator

Suggested invitation list (Workshop)

- Local Government representatives, including councillors
- Chamber of Commerce representatives
- Government Department representatives including Agriculture, Environment, Water, Crown Lands, Tourism, etc.
- Local conservationist and environment group representatives
- Land managers/farmer groups representatives, including cotton farmers
- Traditional owner representatives
- Recreational and commercial fishers
- Local tourism operators and retailers (i.e. bait shops, boating, camping and fishing suppliers, accommodation providers, caravan park owners, house boat owners, food and beverage, charter operators, hire boats/cars, etc.)
- Commercial native fish breeders
- Local water infrastructure operators
- Local health leaders
- Local veterinarians
- Animal welfare group representatives
- Recreational users (i.e. skiing, canoeing, water sports, bird watchers, swimmers)
- Other stakeholders with an interest in the waterways

NRM groups are encouraged to ask the above stakeholders to invite their members and stakeholders to the Town Hall meeting.

Checklist – what items are required for each event

ALL Events

- ┆ Invitations
- ┆ Catering – including tea, coffee, water and food
- ┆ Venue
- ┆ AV equipment – screen, laptop and projector
- ┆ Microphone x2 handheld with spare batteries
- ┆ Directional signage at venue (if required)
- ┆ Extension cords and power board (OH&S requirements)

Workshops/interactive element (as above plus the below)

- ☐ Pens/markers
 - ☐ Notepads
 - ☐ Butchers paper – for each table
 - ┆ Whiteboard
 - ┆ Tables and seating – from four to eight people in a group
-

Checklist of tasks

at least 10 days to two weeks prior to event

- ┆ Source venue and book
- ┆ Source catering and book
- ┆ Develop an invitation list and share with FRDC for approval
- ┆ Tailor invitations once list is approved
- ┆ Distribute invitations
- ┆ Start promoting the Town Hall event – put up posters
- ┆ Tailor template Media Release to specific NRM and event
- ┆ Send out Media Release to local media
- ┆ Start promoting event on social media
- ┆ Begin coordinating RSVPs, take note of dietary requirements – RSVPs are only required for the Workshop not the Town Hall event
- ┆ Follow up with local media to see if you can do anything more to promote the event
- ┆ Promote event on social media
- ┆ Confirm set up and pack up times with venue

next steps

- ┆ Confirm and prepare IT, AV and staging needs,
- ┆ Promote event through local radio
- ┆ Nominate and organise the person from the NRM to capture the questions & feedback

five to three days prior to event

- ┆ Finalise RSVPs and confirm numbers
- ┆ Confirm catering – correct numbers and dietary requirements
- ┆ Confirm name list and prepare name tags for attendees
- ┆ Print out run sheets/programs for attendees and facilitators

on the day

- ┆ Room set up and pack up
 - ┆ Arrange IT and AV requirements – ensure working
 - ┆ Set up signage
 - ┆ Meet and greet guests
 - ┆ Facilitation of materials – butchers paper, post it notes, markers, water
-

Roles and Responsibilities

the role of seftons

- Develop a brief outline of the NRM workshops to provide to each NRM CEO.
- Contact each NRM CEO at set up a time to meet and brief them on consultation activity prior to each community workshop
- Seftons to design invitation for stakeholders and send with covering email for NRM groups to send to stakeholders
- Participate in phone briefing meetings with each NRM CEO to advise them of the consultation, brief them on the purpose of the activity and content of the consultation
- Send briefing kit to all NRM coordinator contacts.
- Seftons representative (either Robbie Sefton or another facilitation team member) to travel to and run each of the 29 workshop sessions from 2-6pm, plus run the Town Hall Meeting sessions from 6:30 – 8:30pm (timings approximate)
- Develop master stakeholder engagement PowerPoint template for 29 sessions and then tailor for individual regions/communities.
- NRM representative to capture key outcomes, observations, actions per meeting and to provide to Seftons within five working days for inclusion in final report.
- At conclusion of the 29 Workshops/Town Hall meetings Seftons will review feedback and draft final report capturing outcomes and recommendations.
- Seftons will also hold weekly WIP meetings with FRDC/NCCP to update on progress and implement any necessary actions / liaison with FRDC/NCCP or NRM contacts.
- Seftons does have access to a number of the research response keypad handsets that can be used to capture feedback and attitudes/opinion at the event.

the role of state lead

- Insert where relevant

the role of the nrm

- Identify a location for each Workshop / Town Hall event in region and book.
- Develop an invitation list for the invite only Workshops “to targeted stakeholders” including names and organisations and share with FRDC/NCCP for review prior to approaching.
- Once approved, Seftons to provide NRM group with tailored invitations and NRM group to distribute to each stakeholder and coordinate RSVPs.
- Regional GM and key staff to attend regional Workshop and Town Hall event.
NRM group representative to make a presentation on the issue of carp in their region and the wider NRM group activity.
- NRM group representative to present the leadership position the NRM group has undertaken around the issue in their region.
- NRM group to provide administrative support in each region to locate and book venues, arrange catering, invite guests, promote the event, coordinate set up and pack-up date, set up and pack up venues, meeting and greeting guests, arrange staging and seating and AV requirements.
- NRM group to provide/arrange AV equipment including screen, laptop and projector
- NRM group to provide logistical support on the day and night to capture and record feedback and questions from attendees and provide to Seftons for inclusion in post consultation report.
- NRM group to continue to be a liaison point for FRDC/NCCP following workshop and events to share updates and information with their region.

The role of frdc/nccp – national carp control plan

- Seftons will rely on the support of internal FRDC/NCCP representatives to oversee the logistical coordination of the events with each NRM group.
- An FRDC/NCCP representative to liaise directly with each NRM group prior to the event to confirm all logistic details to ensure the smooth running of the event.
- FRDC/NCCP should also liaise with each NRM group to coordinate the room set-up, meeting and greeting of guests, signage, facilitation materials – butchers paper, post it notes, markers, etc.

Templates:

To be provided by Seftons for each region and include.

- Media Release
 - Invitation
 - Radio Live Read
 - Advertisement
-

Appendix 2: Sample Media Release

MEDIA RELEASE

[Day] [Month] 2018

Community briefing session on carp control

(Insert town / region) residents are invited to attend a community briefing session hosted by the National Carp Control Plan (NCCP) and (insert State lead/NRM name) on (insert day and date) from 6.00-8.00pm.

The community briefing session will be held at [location and town] and will provide participants an opportunity to hear first-hand from the NCCP and [insert State lead/NRM name], as well for (town/region) residents to contribute feedback to the plan.

The NCCP is investigating ways to control carp centered on the use of a species-specific virus known as Cyprinid herpesvirus 3 (the carp virus) as a biocontrol agent, and to ensure that risks associated with its potential use are identified and mitigated. Operating through the Fisheries Research and Development Corporation (FRDC) on behalf of the Australian Government, the \$15 million initiative will provide detailed information to enable governments to make a well-informed decision on the best approach for carp control at the end of 2018.

NCCP National Coordinator Matt Barwick says waterways are the lifeblood of many rural and regional communities and they need to be rehabilitated.

“While these community briefing sessions are important for us to share the background, context and desired outcomes of the NCCP, they also provide an opportunity to hear from community members about how the prevalence of carp impact on them, their lifestyle or business,” Mr Barwick says.

“We want to work collaboratively with the local community - as healthy river systems and waterways result in healthier communities.”

“We value the opinions and beliefs of the [town/region] region and we want to understand the ecological values of the affected river systems and waterways and any likely direct or indirect impacts, be it social, environmental, economic or cultural, that may eventuate,” Mr Barwick says.

The [insert state lead/NRM] is working with the NCCP to ensure local issues are considered in the plan.

“We encourage all members of the community to participate in this briefing session and ask any questions they may have in relation the plan.

“The NCCP is a process, not a foregone conclusion so we encourage residents to share their thoughts and opinions and help shape the recommendations to government,” said (insert name, insert title, insert NRM)

This event is one of more than 40 community briefing sessions which will be held in NSW, Victoria, South Australia, the ACT, Queensland and Western Australia in coming months.

The community briefing session will cover research underpinning carp biocontrol, and summarise work underway under the NCCP and what is yet to come. The [insert NRM] will provide an update on the issue of carp in our region and a question and answer session will end the evening.

A workshop will be held prior to the community briefing session to allow representatives from key stakeholder groups to inform the NCCP about the prevalence of carp in local waterways, how the

waterways are being used by the community and the benefits or impacts carp reduction may have on the community.

To find out where other community briefing sessions are being held and to be kept up to date on the NCCP please visit www.carp.gov.au.

Ends


Media inquiries

Kerin Heatley
0404 831 253
kerin.heatley@seftons.com.au

For more information

[Insert name of NRM contact]

Appendix 3: Sample Advertisement Template



NATIONAL CARP CONTROL PLAN
RESTORING NATIVE BIODIVERSITY

COMMUNITY BRIEFING SESSION

Residents are invited to attend a community briefing session hosted by <INSERT STATE AGENCY, NRM BODY AND> the National Carp Control Plan

INSERT NRM NAME

Date: Insert Date

Time: 6:00pm – 8:00pm

Location: Insert Location

The National Carp Control Plan (NCCP) is exploring the possible release of the carp virus, Cyprinid herpesvirus 3, as a biocontrol agent, to reduce the prevalence of carp in our waterways.

The NCCP team together with (INSERT NRM) will share with residents:

Residents will also have an opportunity to contribute feedback to the NCCP on:

» What the NCCP program is all about

» Why carp are a national problem

» The extensive research and work currently underway

» The timeline for the project

» Why we need your help to shape the Plan

» Prevalence of carp in their local waterways

» How the waterways are currently being used by the community

» The benefits or impacts carp reduction may have on the community

Working collaboratively with communities to ensure healthy river systems and waterways - and healthier communities.

Appendix 4: Sample Invitation



NATIONAL CARP CONTROL PLAN
RESTORING NATIVE BIODIVERSITY

You are invited to participate in a Workshop to help shape the National Carp Control Plan as part of our regional consultation process.

During this workshop National Coordinator of the NCCP Matt Barwick, will share what the NCCP program is all about, why carp are a national problem and why we need your help to help shape the plan. The workshop will also provide you with the opportunity to inform the NCCP about the prevalence of carp in your local waterways, how the waterways are being used by the community and the benefits or impacts carp reduction may have on your community.

Please join us from 2-6pm on Monday, 17 July 2017 at XXXXXXXXXXXXXXXXXXXXXXXXXXXX

RSVP to email- XXXX@XXXXXXXXXX.com.au or phone - XXXXXXXXXXXXXXX

www.carp.gov.au



NCCP Newsletter – Final Design in FRDC Template

August 2018

<https://fino.frdc.com.au/FINO-Prod/main.aspx?etc=10186&extraqs=formid%3dc22c9351-0b02-4098-add2-ea7127b576bc&id=%7bB4B734D1-6190-E811-942B-000D3AE012A4%7d&pagetype=entityrecord#448254839>

National Carp Control Plan				
Federal Government contact list				
DATE	WHO	CONTACT	CONTACT DETAILS	
July/Aug	Hon. Joel Fitzgibbon MP. Member for Hunter, Shadow Minister for Agriculture, Fisheries and Forestry, Shadow for Rural & Regional Australia	Sandra Crowe, Assistant Advisor	sandra.crowe@aph.gov.au	Contacted 15/05
TBA	Senate for Select Standing Committee on Rural & Regional Affairs & Transport			
Aug-Sept	The Hon. Michael McCormack, Deputy PM and Leader of the Nationals	Colin Bettles, Senior Media Advisor	colin.bettles@infrastructure.gov.au	Contacted 7/8
Sept	Senator Di Natale, Leader of the Greens	Direct	senatordinatale@aph.gov.au	Contacted 7/8
Late Q4	Meeting of Environment Ministers	Naomi Dwyer, Assistant Director , Commonwealth State Relations, Department of Environment & Energy	mem@environment.gov.au	Contacted 7/8
Q3	The Hon. Josh Frydenberg MP, Minister for Energy and the Environment		josh.frydenberg.mp@aph.gov.au	To be contacted
Q3	The Hon. Tony Burke MP, Shadow Environment Minister		Tony.Burke.MP@aph.gov.au	To be contacted
Q3/Q4	The Hon. David Littleproud MP, Minister for Agriculture and Water Resources	Alison Penfold, COS		Contact as needed
Q3/Q4	Senator The Hon. Anne Ruston		senator.ruston@aph.gov.au	Contact as needed

Appendix 1

Correspondence with NCCP regarding Stekeholder Enagement Materials developed by Seftons.

FRDC FINAL REPORT CHECKLIST

Project Title:	NCCP Communications and Stakeholder Engagement Plan		
Principal Investigators:	Seftons		
Project Number:	2017/164		
Description:	A comprehensive communications and stakeholder engagement program for the National Carp Control Plan.		
Published Date:	n/a	Year:	n/a
ISBN:	n/a	ISSN:	n/a
Key Words:	carp, National Carp Control Plan		

Please use this checklist to self-assess your report before submitting to FRDC. Checklist should accompany the report.

	Is it included (Y/N)	Comments
Foreword (optional)	Y	
Acknowledgments	Y	
Abbreviations	Y	
Executive Summary		
– What the report is about	Y	
– Background – why project was undertaken	Y	
– Aims/objectives – what you wanted to achieve at the beginning	Y	
– Methodology – outline how you did the project	Y	
– Results/key findings – this should outline what you found or key results	Y	
– Implications for relevant stakeholders	N	
– Recommendations	Y	
Introduction	Y	
Objectives	Y	
Methodology	Y	
Results	Y	
Discussion	Y	
Conclusion	Y	
Implications	N	
Recommendations	Y	
Further development	N	
Extension and Adoption	N	
Project coverage	Y	Refer to Media Reports in Project Materials Developed
Glossary	N	

Project materials developed	Y	
Appendices	Y	