

FINAL REPORT

Biosecurity Workshop

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Queensland Aquaculture Industries Federation

2012/035



October 2012

Biosecurity Workshop

Final Report

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1.0 NON TECHNICAL SUMMARY

Queensland Aquaculture Industries Federation (Inc) (QAIF) represents the major land based aquaculture sectors in Australia. Members believe that as the industry grows in scale, geographical spread and develops breeding stock re distant from the original wild sector genetics, it is becoming more exposed to risks of biosecurity breakdown.

An industry workshop was held in Cairns on 5 September 2012.

The workshop was intended to:

1. Increase industry awareness of and understanding of disease risks.
2. Increase industry awareness of procedures and responsibilities for aquatic animal disease responses—at the industry, state and national level
3. Review on farm biosecurity measures and provide a template for internal audit
4. Identify any weaknesses in current arrangements that may constitute a threat to industry and identify priority actions to mitigate those threats
5. Build on formal joint industry / government aquatic animal disease response arrangements.

It was attended by farmers, hatchery managers, university researchers, vets and senior staff from agencies responsible for managing biosecurity at a State and Federal level. Issues explored included the risks to be managed, response arrangements and on-farm biosecurity protection.

Policy and operational matters needing further attention by industry were identified. These included:

- Border biosecurity measures for native species creating potential risks for aquaculture
- Seeking government agreement about costs of managing biosecurity breaches
- Need for better documentation and training regarding on farm biosecurity measures
- The need to extend access to key minor use permits for ag-vet chemicals.
- Turning the information collated by the workshop into a template for biosecurity audits.

2.0 ACKNOWLEDGEMENTS

This important workshop was only made possible with the invaluable support of the FRDC. Also QAIF wishes to thank key presenters from Biosecurity Queensland and Ingo Ernst, Director, Aquatic Animal Health, Animal Health Policy Branch, Biosecurity Animal, DAFF who facilitated the concluding session and outcomes.

Finally, our thanks must go to Australian Barramundi Farmers Association (ABFA) President, Marty Phillips, who hosted a wind up session BBQ that evening. Well attended and fully enjoyed.



A well deserved wind up to the workshop at Pejo Enterprises barramundi farm.

3.0 BACKGROUND

Queensland Aquaculture Industries Federation (Inc) (QAIF) represents the major land based aquaculture sectors in Australia. QAIF has as core members the key barramundi and prawn farm industries, as well as a wide range of other northern native species including Murray Cod, perch, red-claw, ornamental fish, oysters, pearls, scallops and some emerging sectors including sea cucumbers

October 2011 QAIF, with the support of the Queensland Department of Employment, Economic Development and Innovation sought and obtained from the FRDC to hold a workshop to explore issues aimed at assisting the industry increase its level of biosecurity awareness and protection. The industry workshop was held in Cairns on 5 September 2012.

The workshop was intended to:

1. Increase industry awareness of and understanding of disease risks.
2. Increase industry awareness of procedures and responsibilities for aquatic animal disease responses—at the industry, state and national level
3. Review on farm biosecurity measures and provide a template for internal audit
4. Identify any weaknesses in current arrangements that may constitute a threat to industry and identify priority actions to mitigate those threats
5. Build on formal joint industry / government aquatic animal disease response arrangements.

The venue for the workshop was Cairns. It is a good transport hub with good venues and is accessible by the Northern Fisheries Centre. Importantly, it is a major centre for prawn, barramundi and crayfish farming.

It was attended by farmers, hatchery managers, vets, industry staff, university researchers and senior staff from agencies responsible for managing biosecurity at a State and Federal level.

Issues explored included the risks to be managed, response arrangements and on-farm biosecurity protection.

4.0 NEED

The members of QAIF are concerned that as their industries grow in scale, geographical spread and develop breeding stock more distant from the original wild sector genetics, they are becoming more exposed to risks of biosecurity breakdown.

Increased staff numbers, increasing vehicle movements on farm are adding to the risks of biosecurity breaches. Migratory bird activity place is an inherent risk for tropical aquaculture. Additionally, much of the industry now operates in an area with very high influx of foreign tourists and rapidly growing international shipping traffic are all adding to the risks of biosecurity break down.

The quality of on-farm management of biosecurity risks varies considerably across industry and across sectors.

Moreover, there is not a well developed interface between government policy and biosecurity management staff and this industry. The industry remains relatively new and evolving.

A workshop to commence a process to address these matters was regarded as important to industry development.

5.0 OBJECTIVES

The objectives of the project were:

1. Increase industry awareness of and understanding of disease risks.
2. Increase industry awareness of procedures and responsibilities for aquatic animal disease responses—at the industry, state and national level
3. Review on farm biosecurity measures and provide a template for internal audit
4. Identify any weaknesses in current arrangements that may constitute a threat to industry and identify priority actions to mitigate those threats
5. Build on formal joint industry / government aquatic animal disease response arrangements.

In achieving the objectives the workshop:

- provided an overview of responsibilities when biosecurity breaches occur;
- looked at the disease risk outlook and increased the level of understanding and preparedness in industry; and
- provided industry with some tools for risk assessment and on-farm audit of biosecurity measures.

Inevitably, not all industry people were able to attend. Material presented to the workshop and prepared at the workshop has now been circulated to participants and member organizations. . Member organizations will now be able to circulate the material to their own member farms.

Ideally, the workshop would have taken the information collected to the next stage and provided a completed template that would have enabled a self audit of biosecurity management at the individual farm level. This did not prove possible. The material is now available and has been included in this document so it remains accessible to industry. But QAIF will need to seek additional funding to assist with the further development of this biosecurity management system for on-farm use.

6.0 METHODS

The workshop was directed at key personnel in the industry with some operational or policy responsibility for biosecurity. The targeted audience included :

- Managers and senior operational staff and owners of aquaculture businesses as QAIF members.
- Veterinarians involved in the Queensland aquaculture industry
- Government officials responsible for biosecurity policy and administration
- Academics and researchers with an interest in aquaculture operations and development.

The workshop was held in Cairns, a central location for the industry, close to farmers, key government agencies and researchers.

Presentations from key external experts covered :

- **Business and Farm Impacts of Biosecurity Breaches**
Dr Rick Symons, Chief Veterinary Officer, Biosecurity Queensland
- **Emergency Disease Response Arrangements**
 - State preparedness, response arrangements and responsibilities
 - National preparedness and response arrangements and responsibilities
 - Events, actions, responsibilities and implications
 - Reporting arrangements**Dr Tim Lucas, Senior Policy Officer, Biosecurity Queensland**
- **Disease risks for Aquaculture —domestic and international**
Dr Ian Anderson - Principal Veterinary Pathologist (Fish Disease)
Biosecurity Queensland
- **Symptoms and Diagnostics**
Dr Ian Anderson- Principal Veterinary Pathologist (Fish Disease)
Biosecurity Queensland
- **Access to Minor Use Permits**
Graham Dalton - EO QAIF

This was followed by a workshop of small groups exploring the following matters:

- Biosecurity planning and implementation
- On –farm risk assessment and audit of security measures
- Mitigating risks
- Gaps in the response mechanism
- Gaps in on-farm/industry preparedness
- Documentation of on farm audit systems

Facilitators were :

- | | |
|----------------------|---------------------|
| • Dr Trevor Anderson | • Dr Clive Keenan |
| • Dr Ian Anderson | • Mr. Bruce Sambell |
| • Dr Rick Symons | |

Dr Ingo Ernst, Director, Aquatic Animal Health, Animal Health Policy Branch, Biosecurity Animal, DAFF, chaired a session summarising the outcomes from the workshop.

The detailed presentations appear as attachments to this report.

7.0 RESULTS AND DISCUSSION

The workshop highlighted a number of policy and operational matters for review and development.

Key issues for priority action identified were :

Action Required With On Farm Procedures to Improve Biosecurity Management

- Develop and document Protocols for translocation of fingerlings
- Document biosecurity plans
 - Some farms have plans, many do not
 - Plans are inconsistent
- Plans should form part of induction systems for staff .
- Good husbandry is the most important variable to manage risk
 - Foot baths, hand washing, tank washing
 - Manage movement of people, water, equipment
 - Especially visitors from other farms
- Water treatment
 - Maintenance schedules e.g. filters
- Sterilisation of equipment
 - Second hand equipment an issue
 - Zoning
 - Wash and sterilize vehicles coming from other farms
 - Have specialized parking areas
- Check where water from bulk transports goes
- Good internal documentation and communication & good record keeping is essential
- Increase awareness of and perceptions of risks within industry
- Understand the facility, the risks and recognize problems
- Exclusion netting for birds
- Quarantine measures for stock
- Check disease status of new stock
- Intake screens assist
- Early detection and response
 - Keep mortality records
- Crocodiles and birds are a potential problem on tropical aquaculture farms
- Good treatment of ponds at end of production cycle

- Entry to hatcheries through proper biosecurity procedures, especially after coming from ponds
 - Hand wash
 - Fish entry
 - Foot wear
- Dry out all pond equipment in sun
- Sabotage a potential issue
- Tradesmen coming onto farm from other farms are a risk
- Need access to rapid and good diagnostic services
- Equipment needs to be safe
 - Nets
 - Buckets
 - Pumps
 - Vehicles
 - Bulk transporters
- Water needs to not represent a biosecurity threat
 - Intake
 - Bulk transporter water
 - Water in containers
- Feed is a potential risk
 - Live feed
 - medications

There is a need for on farm audits for biosecurity

- Are procedures documented?
- Are procedures appropriate and complete?
- Are procedures followed?
- Are they reviewed?
- Who is responsible for implementation?

Farm Biosecurity Planning

- On farm training and implementation of an internal audit process would have real value and enhance security.
- QAIF should approach FRDC for funds to assist develop and roll out on farm biosecurity plans.
- Weed need to decide on the level of mortalities that is abnormal and that should signal action
- Consider an industry standard system of biosecurity certification and audit programs.

Enhancing Boarder Security

- There are serious threats: Ornamentals; imports of whole barramundi; ballast water with endemic diseases (many farms near ports and harbours and pump water from them); translocation; wet fish feed for broodstock.
- Industry has concerns about slow responses by government to these threats and a lack of agreement about the risks resented.
- There is a need to increase industry and government awareness of the threats
- Industry wants to work with Government and through Biosecurity Qld
- Industry needs to carefully examine the Aquavet plan to make sure it is relevant and appropriate..
- Current risks not correctly assessed – need more testing of imports
- Members want more emphasis on “prevention” – and less on managing outbreaks after the event.
- There is a serious problem of imported product being used as bait or in crab pots

Access To Vet Chemicals

- It is important to have access to the right drugs if disease outbreaks occur
- Industry needs to expand access to key minor use permits that have lapsed
- QAIF should seek to reduce the cost of holding permits
- QAIF should seek to extend the issue period of permits to reduce the administrative burden.

Policy Issues to be Worked Through with Government

- Explore and define the responsibilities and policies
- Determine if outbreaks are going to be treated as a natural disaster or is it to be treated as industry risk to be paid for by industry?
- Need to work out relationships and responsibilities between recreational fishers, wild harvest and aquaculture for any cost recovery.
- Levies to cover response must cover all farms, not just those immediately impacted.
- Response needed will depend on the event and the environment

Post Event Issues

- Who pays?
 - The farmer?
 - The industry?
 - The State or Federal governments?
- Probably should be discussed now with government.

8.0 BENEFITS AND ADOPTION

The industry recognises the high biosecurity risk environment in which it operates. Risks are rising for the following reasons:

- The industry is growing:
- Husbandry is becoming more intensive
- Brood stock is diverging from wild animals
- Imports are increasing and carry risks
- Travel from Asia is increasing with some risks of disease introduction.

There will be significant benefits arising from implementing better biosecurity arrangements on farm.

This industry is still new. Domestication of the animals is very recent and development of a large and intensive industry will involve sophisticated management of biosecurity issues.

There is an added imperative to managing biosecurity arrangements, especially at the border. The animals farmed are native to Australia and endemic in the wild. New diseases from a different and until recently distant Asian environment remain a risk.

Adoption of improved on farm and industry wide biosecurity management will significantly reduce the risk of high costs associated with managing a serious disease outbreak arising from a biosecurity failure.

9.0 FURTHER DEVELOPMENT

The workshop achieved its objectives of raising awareness. It also gave direction about how to enhance the management of biosecurity risks, both on farm and as an industry.

However, industry does not have the resources to implement a sophisticated across industry biosecurity program and also has limited capability to engage in the policy debate associated with biosecurity management at a national level.

The industry resolved to seek assistance with further development of the program:

- See if there are opportunities to include in training programs
- See if there is funding to further develop the development of farm documentation and to implement this
- Make involvement in government policy development a high priority for industry.

10.0 CONCLUSION

The objectives workshop were broadly achieved as follows:

Increase industry awareness of and understanding of disease risks.

- This objective was achieved as the workshop was attended by key industry personnel including representatives of the major companies and industry associations.
- Experts advised key industry personnel about the actual diseases that might pose a threat to industry
- Also, by looking at events impacting on aquaculture elsewhere in the world, and especially the costs to production in other agriculture in Australia arising from biosecurity break downs, the workshop explored the benefits of an emphasis on biosecurity forming an integral part of farm procedures.

Increase industry awareness of procedures and responsibilities for aquatic animal disease responses—at the industry, state and national level

- Departmental staff explained jurisdictional roles of government agencies and the interface with industry.
- Representatives of the major industry associations were present for this brief.
- Further, copies of all materials presented at the workshop have been circulated to industry for distribution to those not able to attend.

Review on farm biosecurity measures and provide a template for internal audit

- Workshop participants identified operational areas of farm systems where biosecurity risks needed to be managed.
- These were documented and have been circulated to industry and will provide the basis for developing on-farm self audit instruments.
- Participants expressed an interest in actually undertaking a third party audit and seeking funding for a collective approach to documentation.

Identify any weaknesses in current arrangements that may constitute a threat to industry and identify priority actions to mitigate those threats

- Several areas of concern were highlighted including:
 - the need to better document and implement on farm plans for managing biosecurity issues
 - a view that government was as concerned about risks associated with imported seafood, particularly species that are native in Australia and farmed such as prawns and barramundi.

Build on formal joint industry / government aquatic animal disease response arrangements

- The workshop developed an understanding of response arrangements and introduced the main federal and state agencies and response arrangements to industry.
- Industry believes that some policy areas, especially relating to the costs of response arrangements, need further discussion.

The project achieved the objectives of raising awareness in the growing tropical aquaculture industry.

Each of the key industry associations has been provided with this report and summaries of the data presented at the workshops. They have been encouraged to further circulate this material to their individual farm business members.

Industry is being encouraged to review on farm biosecurity measures for each sector and enterprise in the light of the information provided at the workshop.

The original intention to proceed at the workshop to full documentation of an on-farm system of self audit of biosecurity measures could not be achieved in the available time. The workshop enabled the necessary information to be gathered and documented. This has been circulated to industry. But it remains to develop a set of standards and audit protocols into a template for adaptation to individual farms. Industry will now be seeking support and resources to enable this further development of biosecurity systems for industry and for producers.

11.0 ATTENDEES

Graham Dalton	EO QAIF
Laurence Gavey	Principal Veterinary Officer, Biosecurity Qld
Michael Heidenreich	QDAFF
Tim Lucus	Biosecurity Queensland
Chris Calogeras	EO ABFA
Trevor Anderson	President QAIF
Clive Keenan	Owner Coral Coast Mari Culture
Ian Anderson	Principal Veterinary Pathologist Biosecurity Queensland
Heather Stevenson	Qld Crayfish Farmers Association
Mark Oliver	Australian Aquaculture Support Services
Marty Phillips	President ABFA
Bob Richards	Humpty Doo Barramundi, Darwin
Desiree Allan	Marine Produce, WA
Kerrod Beattie	QDAFF
Ingo Ernst	DAFF
Bruce Sambell	Ausyfish
Rob Bartley	Aquaculture Association of Queensland
Dave McIlveny	Paradise Aquafarm
Mark Hober	Daintree
Phillip Chamberlain	Chamberlain Veterinary Services/ South East Qld Fish Pty Ltd
Kate Hudson	James Cook University
Alexander Brazenor	James Cook University
Dinh Hoai Truong	James Cook University
Thane Militz	James Cook University
Alejandro Trujillo Gonzalez	James Cook University

12.0 PRESENTATIONS

The power point presentations at the workshop are attached. Whilst these have been circulated to industry, the best place for them to be stored for future access, especially by non-attendees, is as attachments to this report. There are some inconsistencies in formatting arising from the presentation in presentation systems.

12.1 Business and Farm Impacts of Biosecurity Incidents
Lawrence Gavey: Principal Veterinary Officer

Biosecurity Queensland
Department of Agriculture, Fisheries & Forestry



Business & Farm Impacts of Biosecurity Incidents

Aquaculture biosecurity workshop
September 2012, Cairns

Lawrence Gavey
Principal Veterinary Officer
Toowoomba

lawrence.gavey@deedi.qld.gov.au





Biosecurity incidents

- Industry impact
 - Local
 - State
 - National
- Trade
- Economic
- Societal
- Environmental



Biosecurity

- Definition
- Australian aquaculture examples
- International aquaculture examples



Terrestrial biosecurity examples

- Equine influenza
- Foot & Mouth Disease – UK
- Foot & Mouth Disease - Argentina



Biosecurity impacts – key learnings

- Preparedness
- Early detection
- Rapid mobilisation of response
- Recovery
- Systems in place
 - Industry representation & influence
 - Cost sharing
 - Surveillance & notification
 - Joint industry-government response arrangements

12.2 Emergency disease response arrangements


Tim Lucas: Senior Policy Officer, Biosecurity Queensland

Department of Agriculture, Fisheries and Forestry

Emergency Disease Response

- What it looks like
- Who is involved
- Scope for improvement

Tim Lucas
Aquatic Animal Health Policy
Biosecurity Queensland
Tim.lucas@daff.qld.gov.au




Division of responsibilities

Australian Government

- National coordination
- Quarantine
- International engagement (e.g. trade and disease reporting)

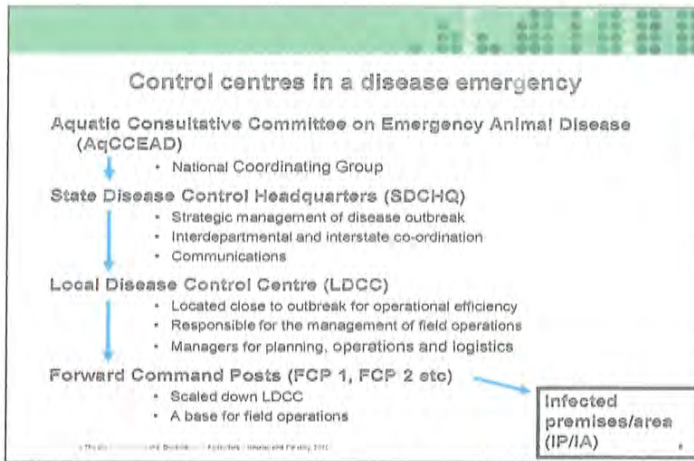
State and territory governments

- Within border disease control
- Physical capabilities for diagnosis and response
- Aquaculture and fisheries sectors
- Enterprise-level health management and biosecurity



The State of Queensland, Department of Agriculture, Fisheries and Forestry, 2012

2



Principles of Control and Eradication

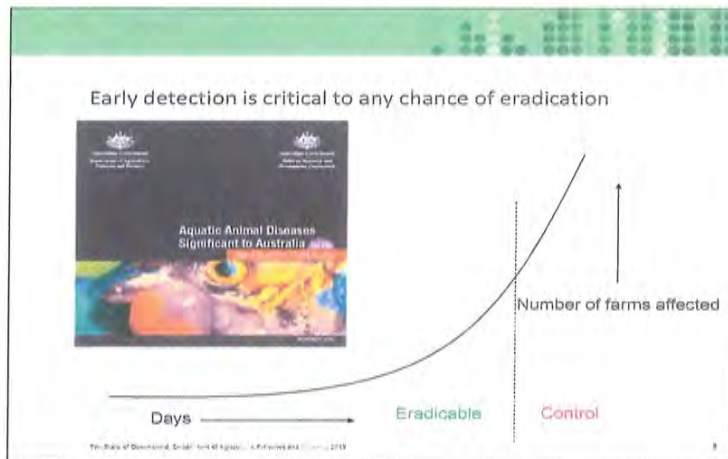
There are three possible response options for disease control:

- Eradication
- Containment, control and zoning
- Control and mitigation of disease

Within these options, general principles include:

- Rapid detection and identification of infection
- Rapid definition of the extent of the problem
- Rapid implementation of control measures; by controlling stock and water movement
- Prevention of disease spread
- Maintain good management practises and high hygienic standards

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Opportunities to strengthen current arrangements

- Increase cooperation between industry and government
- Strengthen risk mitigation activities (e.g. agreed national minimum biosecurity standards)
- Strengthen motivation to manage disease emergencies for common interests (e.g. beneficiaries of a response share costs)

A terrestrial example

- 'Emergency Animal Disease Response Agreement'
- Formal industry-government agreement
- Eradication (or containment with view to eradicate)
- Report diseases within 24 hrs
- Develop and agree on response plan
- Affected parties involved in decision making
- Beneficiaries share cost of response
- Opportunities for owner reimbursement
- Ongoing risk mitigation activities



Formal industry-govt aquatic emergency response arrangements?

- Workshop held to discuss possible aquatic arrangements

- Participants included:
- aquaculture
 - wild capture
 - recreational fishing
 - ornamental fish
 - Commonwealth (DAFF, CSIRO-AAHL)
 - state/territory government
 - Animal Health Australia
 - FRDC



Formal Aquatic emergency response arrangements? Outcomes of July Workshop

- Formal state / Commonwealth gov / industry agreement desirable
- Existing plant/animal agreements not suitable, but some elements should be used
- Not just eradication, also initial containment and transition to management
- Risk mitigation (eg biosecurity plans) should be a part of the agreement
- Funding is currently being sought for Executive officer to coordinate progress

Emergency Disease Response Reference documents:

→ AQUAVETPLAN Disease Strategy Manuals:


- Enterprise Manual
- Control Centres Management Manual
- Destruction
- Decontamination
- Disposal



Access documents from AG DAFF website

→ <http://www.daff.gov.au/animal-plant-health/aquatic/aquavetplan>

12. 2 Disease Risks for Aquaculture —domestic and international
Ian Anderson: Principal Veterinary Pathologist
(Fish Disease) Biosecurity Queensland



Disease Risks for Aquaculture – domestic and international



Introduction

What is a disease risk in aquaculture?

- Emergency diseases

- Any exotic disease where its absence is in the national or sectoral interest
- An exotic form of an endemic disease which would have national or sectoral impact
- A serious infectious disease of unknown or uncertain cause
- An endemic disease in a virulent outbreak form leading to a large scale epidemic or significant loss of market access

- Any diseases that cause mortalities or reduced growth/feed conversion in the production system or lower the value of the market product; that is to say, diseases that have a significant financial impact.

- Any diseases that can affect access of aquaculture products to markets; particularly overseas markets.



Introduction - 2


Fisheries Act 1994 – Declared Disease List

National List of Reportable Diseases and OIE Future disease
emergency risk

Diseases of high risk to finfish


Diseases of high risk to crustaceans

Diseases of high risk to mollusc



How do authorities/aquatic animal health specialists know which are the diseases that pose the most serious risks?

- World Organisation for Animal Health (OIE)
- Network of Aquaculture Centres in the Asia-Pacific (NACA) – Aquatic Animal Health program (regional coordination)
- Subcommittee of Aquatic Animal Health; reporting to
→ Animal Health Committee (national coordination)
- Reports from different states and territories - surveillance
- Reports from industry
- Scientific publications and informal reports



Fisheries Regulation 1995 (which is subordinate to the *Fisheries Act 1994*)
(Amended by *Fisheries Legislation Amendment and Repeal Regulation (No. 23) 200*).

Schedule 5 Declared diseases

Part 1 Bacteria

bacterial kidney disease (*Renibacterium salmoninarum*)
enteric redmouth disease (*Yersinia ruckeri* Hagerman strain)
enteric septicaemia of catfish (*Edwardsiella ictaluri*)
furunculosis (*Aeromonas salmonicida* subsp *salmonicida*)
necrotising hepatopancreatitis
piscirickettsiosis (*Piscirickettsia salmonis*)
withering syndrome of abalone (*Candidatus Xenohaliotis californiensis*)

Part 2 Fungi

crayfish plague (*Aphanomyces astaci*)

Part 3 Parasites

bonamiosis (*Bonamia exitosus*)
bonamiosis (*Bonamia ostrea*)
bonamiosis (*Bonamia* sp.)
gyrodactylosis (*Gyrodactylus salaris*)
marteiliosis (*Marteilia refringens*)
mikrocytosis (*Mikrocytos mackini*)
MSX disease (*Haplosporidium nelsoni*)
perkinsosis (*Perkinsus marinus*)
SSO disease (*Haplosporidium costale*)
whirling disease (*Myxobolus cerebralis*)

Part 4 Pests

Asian green mussel (*Perna viridis*)

Part 5 Viruses

akoya oyster disease
baculoviral midgut gland necrosis virus
channel catfish virus disease (CCVD)
epizootic haematopoietic necrosis virus (EHN)
infectious haematopoietic necrosis virus (IHN)
infectious hypodermal and hematopoietic necrosis virus (IHHNV)
infectious pancreatic necrosis virus (IPN)
infectious salmon anaemia virus (ISA)
iridovirosis
Oncorhynchus masou virus (OMV)
red sea bream iridoviral disease
spring viraemia of carp virus (SVC)
taura syndrome virus
tetrahedral baculovirosis (*Baculovirus penaei*)
viral haemorrhagic septicaemia virus (VHS)
white spot syndrome virus
white sturgeon iridoviral disease
yellowhead disease virus

National list of reportable finfish diseases.

	Listed regionally (OIE/NACA) (2011)		Listed regionally (OIE/NACA) (2011)
Epizootic haematopoietic necrosis – EHN virus	Yes	Enteric septicaemia of catfish (<i>Edwardsiella ictaluri</i>)	Yes
Epizootic haematopoietic necrosis – European catfish virus / European sheatfish virus	Yes	Piscirickettsiosis (<i>Piscirickettsia salmonis</i>)	
Infectious haematopoietic necrosis	Yes	Gyrodactylosis (<i>Gyrodactylus salaris</i>)	Yes
Spring viraemia of carp	Yes	Red sea bream iridoviral disease	Yes
Viral haemorrhagic septicaemia	Yes	Furunculosis (<i>Aeromonas salmonicida</i> subsp. <i>salmonicida</i>)	
Channel catfish virus disease	Yes	<i>Aeromonas salmonicida</i> - atypical strains	
Viral encephalopathy and retinopathy	Yes	Whirling disease (<i>Myxobolus cerebralis</i>)	
Infectious pancreatic necrosis		Enteric redmouth disease (<i>Yersinia ruckeri</i> – Hagerman strain)	
Infectious salmon anaemia	Yes	Koi herpesvirus disease	Yes
Epizootic ulcerative syndrome (<i>Aphanomyces invadans</i>)	Yes	Grouper iridoviral disease	Yes
Bacterial kidney disease (<i>Renibacterium salmoninarum</i>)		Infectious spleen and kidney necrosis virus – like (ISKNV-like) viruses	

National list of reportable diseases - 2.

Molluscs	Listed regionally (OIE/NACA) (2011)	Crustaceans	Listed regionally (OIE/NACA) (2011)
Infection with <i>Bonamia ostreae</i>	Yes	Taura syndrome	Yes
Infection with <i>Bonamia</i> species		White spot disease	Yes
Infection with <i>Bonamia exitiosa</i>	Yes	Yellowhead disease – Yellowhead virus	Yes
Infection with <i>Mikrocytos mackini</i>		Gill-associated virus	
Infection with <i>Marteilia refringens</i>	Yes	Infectious hypodermal and haematopoietic necrosis	Yes
Infection with <i>Marteilia sydneyi</i>		Crayfish plague (<i>Aphanomyces astaci</i>)	Yes
QX disease		White tail disease	Yes
Infection with <i>Marteilioides chungmuensis</i>	Yes	Infectious myonecrosis	Yes
Infection with <i>Perkinsus marinus</i>	Yes	<i>Monodon</i> slow growth syndrome	Yes
Infection with <i>Perkinsus olseni</i>	Yes	Milky haemolymph disease of spiny lobster (<i>Panulirus</i> spp.)	Yes
Infection with <i>Xenohaliotis californiensis</i>	Yes	Necrotising hepatopancreatitis	Yes
Akoya oyster disease	Yes		
Iridoviroses			
Abalone viral ganglioneuritis	Yes		
Ostreid herpesvirus-1 μ variant (OshV-1 μ var)			

Future disease emergency risks throughout the world

- Emerging new diseases (unknowns) –
 - Spread of diseases to new locations
 - Natural selection for increased pathogen virulence
- Expansion of aquaculture and trade in aquaculture products
 - Africa
- Increased diversity of farmed species
- Use of exotic species in new farming areas
- Polyculture and alternate cropping of different species
- Increasing animal densities in aquaculture
- Global environmental change
- Failure to invest in research, surveillance and BMP biosecurity practises (regulations and on-farm).
 - FAO estimates >US\$275 million is required over the next 10 years just to address aquaculture disease related R&D in Asia

- Issues that are relevant to Queensland when considering future disease emergency risks:
 - Exotic diseases
 - Emerging endemic diseases
 - Temperate, warm water and tropical
 - Marine, coastal, estuarine and freshwater (industrial water)



Diseases of high risk to finfish

- Gourami iridovirus, red sea bream iridovirus and other megalocytiviruses (iridoviridae)
- Epizootic haematopoietic necrosis virus and other ranaviruses (iridoviridae)
- Koi herpes virus disease
- Pilchard herpes virus
- Spring viraemia of carp?
- And other rhabdoviruses (IHNV, VHS etc)?
- Viral nervous necrosis – nodavirus (betanodavirus)
- Enteric septicaemia of catfish - *Edwardsiella ictaluri* – bacteria
- Streptococcosis – *Streptococcus iniae*, *Str. agalactiae* - bacteria

Diseases of high risk to crustaceans

Freshwater prawns and crayfish:

- White tail disease
- Crayfish plague
- Rickettsia-like organisms
- Endemic viruses?
- Marine prawns:
- Early mortality syndrome (EMS)
 - Acute hepatopancreatic necrosis syndrome
- White spot syndrome virus
- Yellow head virus
- Taura syndrome virus
- Infectious muscle necrosis virus (totivirus) (Infectious myonecrosis)
- Monodon slow growth syndrome (Laem-Singh virus)
- Virulent forms of endemic viruses e.g., MBV, IHHNV



Diseases of high risk to molluscs

- Akoya virus
- Iridoviroses
- Withering syndrome of abalone
- Pacific oyster mortality syndrome – OsHV-1 μ var
- Oyster oedema disease
- Abalone herpes-like virus
- QX disease – infection by *Martelia sydneyi*
- Winter mortality – infection by *Bonamia roughleyi*



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12.3 Access to Minor Use Permits
Graham Dalton - EO QAIF



**Queensland Aquaculture Industries
Federation (Inc)**

World Best Aquaculture
Aquaculture Association of Queensland, Australian Barramundi Farmers
Association,
Australian Prawn Farmers' Association,
Coral Coast Mariculture, Koorinal Aquaculture Pty Ltd, OceanXplorer,
Pristine Oceans Pty Ltd, Queensland Crayfish Farmers Association,
Queensland Pearl Industry, Watermark Seafoods.

OFF LABEL USE OF OTC
PERMIT NUMBER – PER 13080

QAIF now holds a permit for off label use of OTC that can be accessed by members of member organisations of QAIF.

- The cost of holding the permit is shared by the following members with an annual contribution:
 - AAQ \$600
 - ABFA \$600
 - QCFA \$200
-

How to Use the Permit

- You must abide by the conditions of the permit for use of OTC to be legal.
- Read the permit and satisfy yourself that you are meeting the requirements of the permit.

Supervision by a Vet

- Use of OTC must be “under the supervision of a veterinary surgeon”.
- Reporting of use must be by the supervising vet.
- Directions for use are set out in the permit and must be followed.

Record Keeping

- On each occasion that the product is used a detailed record must be kept.
 - Complete the QAIF form
 - Send the form to the Supervising Vet
 - Send a copy of the form to QAIF
 - The Supervising Vet should also send a copy to QAIF within 72 hrs of receiving it.
 - QAIF at the end of each financial collates the data and submits to APVMA
-

Form to be Submitted

NAME OF FARM	
DATES OF USE	
DOSE RATE	
NUMBER OF DAYS ADMINISTERED	
PRODUCT USED AND SUPPLIER	
QUANTITY OF PRODUCT USED	
SPECIES	
TYPE OF PRODUCTION SYSTEM	
NUMBER OF PENS, PONDS ETC TREATED	
PLACE WHERE THE PRODUCT WAS USED	
BIOMASS OF FISH ON WHICH THE PRODUCT WAS USED	
WITHHOLDING PERIOD (Degree days)	
PURPOSE (disease organism and condition)	
ADVERSE EVENTS	YES / NO
IF YES	REPORT TO APVMA COORDINATOR ON 02 6210 4792
NAME OF SUPERVISING VETERINARY SURGEON	
CONTACT DETAILS OF SUPERVISING VET	
CONTACT PERSON	
PHONE	
DATE SUBMITTED	

Is It All Worth the Trouble?

- We do need OTC
 - No one else holds a permit you can use
 - It was a major battle for QAIF to get the permit
 - Non compliance – we loose it
 - Non compliance means you can be accused of using illegal drugs.
 - remember hormones in chickens
-

12.4 **Wrap up Session**
Chair- Ingo Ernst DAFF



Australian Government

Department of Agriculture, Fisheries and Forestry

QAIF workshop Biosecurity Awareness for Aquaculture

Cairns 5 September 2012



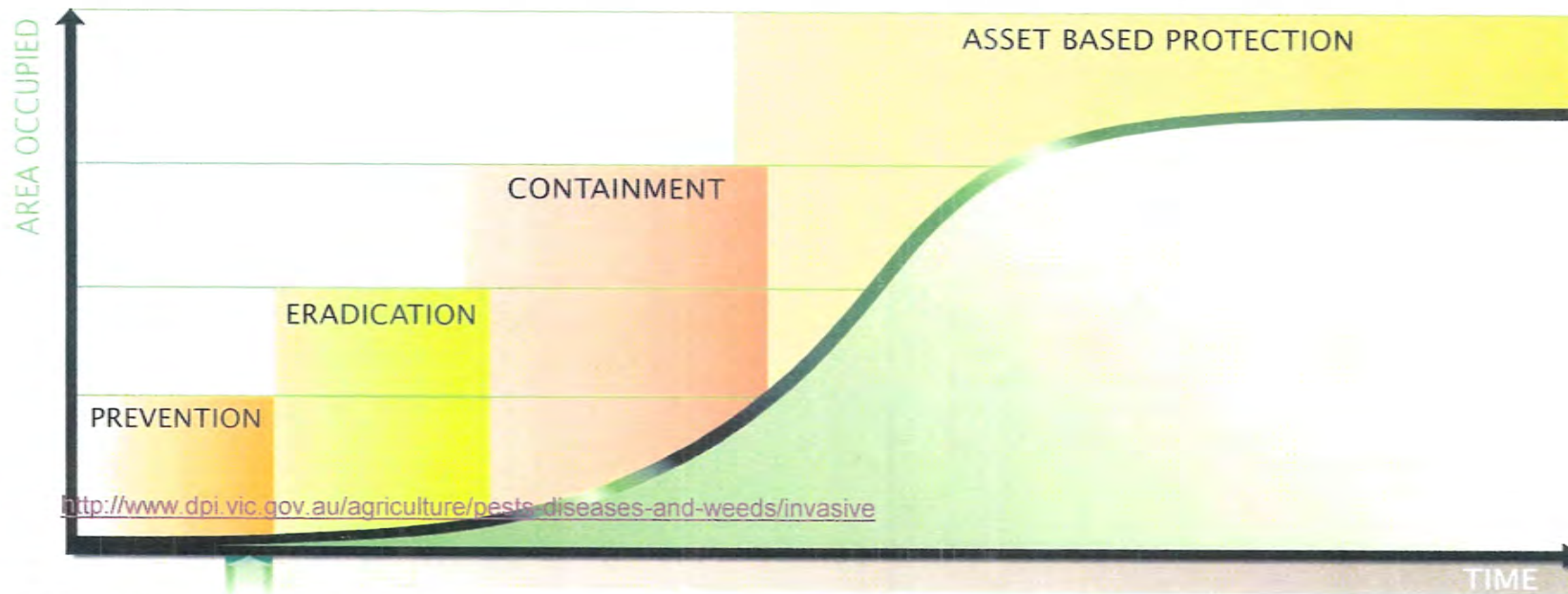
Ingo Ernst
Aquatic Animal Health
Animal Division

5 September 2012

Workshop wrap up

1. Emergency response arrangements
2. Disease risks
3. Prevention – risks and preventative measures
4. Responses – risks to an effective response
5. Agreement on priority actions (including responsibilities and time frame)
6. Opportunities

GENERALISED INVASION CURVE SHOWING ACTIONS APPROPRIATE TO EACH STAGE



Department of
Agriculture,
and Forestry

Species
absent,
Entered
of
Fisheries
invasive
species

Small number
of localised
populations

Rapid increase
in distribution
and abundance,
many populations

Invasive species
widespread and
abundant throughout its potential
range

5 September 2012

3

ECONOMIC RETURNS (indicative only)

1:100
Prevention

1:25
Eradication

1:5-10
Containment

1:1-5
Asset Based Protection

Emergency response arrangements (Tim Lucas)

National arrangements

- Reporting – national list
- Diagnostics – national reference laboratory, standard methods, laboratory proficiency testing
- Contingency plans – AQUAVETPLAN; disease strategies, operational manuals, control centres
- National coordination – Aquatic Consultative Committee on Emergency Animal Diseases; diagnostics, international reporting, trade issues, communication

Disease risks for aquaculture (Ian Anderson)

Emergency diseases

- Definition (economic, environmental, trade impacts)
- Processes for identifying and listing emergency diseases
- Reporting arrangements – state, national, international

Emergency disease risks

- New diseases, spread of known diseases, change leading to new diseases
- Issues – diversity, new species, knowledge, environmental change, insufficient R&D investment

Disease Risks For Aquaculture

(Ian Anderson)

Fish diseases

- GIV, RSIV, EHNV, other ranaviruses, nodavirus, VHS, *Edwardsiella ictaluri*, *Streptococcus*...

Crustacean diseases

- WTD, crayfish plague, EMS, IMNV,

Mollusc diseases

- OSHV-1, OOD, WSA, AVG ...

Symptoms and diagnostics (Ian Anderson)

- Early detection important – need for on-farm monitoring
- Reporting triggers (“unusual reporting”, suspicion of listed diseases)
- Resources are available (national field guide)

Gross signs of disease

- Molluscs – mortality, gaping, reduced feeding, wasting, gaping, poor growth, ulcerations, colour changes...
- Crustaceans – mortality, spots, reduced feeding, changed colouration, wasting...
- Finfish – mortality, lethargy, abnormal swimming, pale gills, popeye, swollen abdomen, colour changes...

Symptoms and diagnostics (Ian Anderson)

- Signs are not specific; therefore important to submit samples for laboratory diagnosis to exclude emergency diseases
- Diagnostic methods – histopathology, bacteriology, electron microscopy, molecular genetic methods, virus isolation in cell culture
- Sample collection and preparation is important – best to send live animals to the lab; if not possible follow lab advice.
- Conclusion – know your animals; report unusual disease issues; do something (quarantine affected tanks or ponds; report the issue)

Minor use permits (Graham Dalton)

- Permit for OTC held by QAIF
- AAQ, ABFA, QCFA share costs
- Need to meet permit conditions (vet supervision, reporting to permit holder by user, reporting to APVMA by QAIF)
- Information on Qld DAFF website on chemical use.

Prevention – risks and preventative measures

Biosecurity planning and implementation

- Entry pathways (people, stock, equipment, water)
- **Stock** - brood stock into hatcheries; seed stock onto farms
- **People** – awareness/training of staff (e.g. contamination through wild fish, ornamentals, seafood), SOPs (e.g. trades) other farm personnel, sabotage
- **On farm** - separation of zones on farms (e.g. nurseries, grow out); control of staff and equipment movements
- **Monitoring** - Regular monitoring of stock, record keeping
- **Contingency plans** – planning for best practice to deal with an emergency – who to call, what to do.

Response – risks to an effective response

- **Alert** - Delay in reporting (or non-reporting) results in spread of disease, decreasing opportunity for effective response
- **Investigation** - Delay in diagnosis or insufficient investigation results in a delayed/inappropriate response
- **Response** - Failure to agree on appropriate response objective; failure to achieve agreed response objective
- **Recovery** - Failure to return to productivity; reduced/inhibited market access .

Agreement on priority actions (including responsibilities and time frame)

- **Border quarantine?** - It's a concern to participants; what's the action? Better communication of issues – aquatichealth.net; information disseminated by Qld SCAAH rep
- **Chemical use** – any action required? Agreement to continue active compliance with permit requirements? Focus now on next round of applications
- **Farm biosecurity planning** – agreement to document current best practice; seek funding to develop a best practice plan; QAIF to seek funding; assistance to implement plans?
- **Better development of formal arrangements** – issues regarding responsibilities and costs need to be addressed – aim to develop arrangements that mitigate risks (e.g. stronger obligations for preventative measures; owner reimbursement for stock destruction)

Opportunities

- Aquatic animal health training scheme
- Biosecurity plans
- Formal emergency response arrangements
- New national strategic plan for aquatic animal health