



Aquatic Animal Health Technical Forum

Final Report

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and Martine C. Cornish

May 2016

FRDC Project No. 2012/002





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 - South Australian Research and Development Institute (SARDI) and the University of Adelaide Veterinary School, Roseworthy Campus.
 - University of Sydney, Camden campus (Veterinary School).
 - James Cook University Veterinary and Biomedical Sciences School.

Abbreviations

FRDC	Fisheries Research and Development Corporation
AAHS	FRDC Aquatic Animal Health Subprogram
AAHTF	Aquatic Animal Health Technical Forum
CSIRO	Commonwealth Scientific and Industrial Research Organisation
AAHL	Australian Animal Health Laboratory
ABARES	Australian Bureau of Agricultural and Resource Economics and Sciences
OIE	Office International des Epizooties – the World Organisation for Animal Health
SARDI	South Australian Research and Development Institute
JCU	James Cook University Townsville
EMAI	Elizabeth Macarthur Agricultural Institute (NSW)
JCU MARFU	James Cook University - Marine and Aquaculture Research Facility unit
GFB	Good Fortune Bay Fisheries, Kelso
NATA	National Association of Testing Authorities (Australia)

Executive Summary

What the report is about

The three-year project for the Aquatic Animal Health Technical Forum from 2013 to 2015 was to provide persons working in the aquatic animal health field the opportunity to meet annually in a workshop environment, gain experience in making oral presentations and participate in training, and to develop a network that can be used for obtaining information and advice on technical matters concerning aquatic animal health. The workshops involved participants making presentations on current work projects and to gain experience from others in the aquatic field in laboratory methods. Three annual workshops were held at three locations in different States over the duration of the project and provided a wide variety of presentations in various disciplines and different opportunities for field trips to local aquaculture facilities. Participants included staff from aquatic animal health diagnostic laboratories, university laboratories as well as a number of aquaculture industry staff. Participant numbers varied between 23 and 32 over the three workshops.

Workshop locations and dates were:

2013 workshop (20-22 March, 2013) was hosted by South Australian Research and Development Institute (SARDI) and the University of Adelaide Veterinary School, Roseworthy Campus.

2014 workshop (19-21 February, 2014) hosted by the University of Sydney, Camden campus (Veterinary School).

2015 workshop (17-19 June, 2015) hosted by James Cook University Veterinary and Biomedical Sciences School.

Background

The concept of the Aquatic Animal Health Technical Forum (AAHTF) was informally discussed by some of the participants at the 2007 FRDC National Aquatic Animal Health Scientific Conference held in Cairns. During the discussions it was noted that aquaculture is expanding not only overseas but also in Australia and this has attracted a cadre of young scientists with little experience in aquatic animal health. The establishment of an Aquatic Animal Health Technical Forum (AAHTF) or a network where scientists recent to the field could access information from more experienced scientists was seen as one way to accelerate their technical and professional development. The AAHTF would include annual training workshops where inexperienced scientists/technologists and industry staff that may feel isolated can network and be encouraged to present aspects of their work in a friendly, non-intimidating environment.

The “aquatic animal health” discipline involves a relatively small number of specialists that do not get the opportunity to convene at meetings/workshops/conferences as often as those involved in the terrestrial animal health sphere. The forum would be open to all aquatic animal health specialists and industry personnel, e.g. fish farm staff.

At the FRDC Aquatic Animal Health Subprogram (AAHS) business meeting held in July 2008 Mark Crane, FRDC AAHS Leader, presented the proposal to commence an Aquatic Animal Health Technical Forum to the AAHS Steering and Scientific Advisory Committees. The concept was well-supported by the AAHS members. Following this support and an application, the FRDC People Development Program provided funding to subsidise people to attend the inaugural meeting and forum training workshop of the Aquatic Animal Health Technical Forum (AAHTF) which was held at CSIRO, Australian Animal Health laboratory, Geelong in March 2010. The workshop was conducted over 2.5 days and attended by 18 participants.

Feedback from participants and their home organizations indicated that the workshop exceeded expectations and it was recommended to be held annually, hosted at various venues, to continue the exchange of technical information. Based on the positive input of participants and support of their organisations, an application was submitted to the DAFF/FRDC Aquatic Animal Health Training Scheme to conduct a second workshop in March 2011. The funding obtained would subsidise participant costs, travel and accommodation and provide some reimbursement to the host laboratory for consumables, reagents and other workshop expenses. On successfully gaining joint funding from DAFF and FRDC, the second workshop was held at the Animal Health Laboratory's Fish Health Unit of the Department of Primary Industry Water, Parks, Water and Environment (DPIPWE) in Launceston, March 2011. Again, the workshop organisers received positive feedback with the participants, host facility and participant home organisations showing strong support and indicating the benefits of the AAHTF including the annual workshops.

After the 2011 workshop, a three-year application was submitted to FRDC to continue the forum and workshops from 2013 to 2015. It was thought that continuing the workshops would build on the previous skills workshops held in 2010 and 2011, which assisted in the development of functional networks for the exchange of information and enhancement of the skills of the aquatic animal health service providers. In addition to developing a valuable national resource - a repository of technical knowledge – the forum provides mentoring to the new generation of laboratory technicians, students and staff at diagnostic laboratories, teaching institutions and aquaculture enterprises. The application was successful and FRDC Project 2012-002 commenced in July 2012.

Aims and Objectives

1. To further develop the email discussion group for the Aquatic Animal Health Technical Forum.
2. To ensure the continuation of technical information transfer between forum members.
3. To organise annual workshops at various institutes that provide specific aquatic animal health services.
4. To open the forum to international participation and thus enhancing the knowledge base of the forum members, for example exotic diseases.
5. To canvass State Departments for potential funding contributions to enable the continuation of the forum beyond 2015.

Methodology

As a network, AAHTF operates very basically via email and telephone communication which is supplemented by training workshops organised annually and hosted by institutes that provide specific high-level aquatic animal health services. Workshops were organised by the Principal Investigator and three staff from DPIPWE, Launceston. Input from a staff member at the host facility proved to be invaluable and provided information with respect to facilities available, potential field trips and accommodation. Suggestions for future workshop locations were made at the completion of each workshop via discussion and the feedback forms. On selecting a suitable location and workshop date, information was distributed electronically to past participants and via the FRDC Aquatic Animal Health Subprogram newsletter *Health Highlights*. On distribution of initial workshop information to people who expressed an interest to attend, they were also asked to provide a potential presentation title. The workshop program was then prepared with participant presentation information and, where available, incorporated practical sessions and field trips. At the three workshops there were additional

presentations made by professional members from the host facility. Accommodation for participants was booked by the organising group and partial reimbursements of flight costs processed. For the majority of workshops all participant accommodation was fully covered by project funding in addition to partial flight reimbursement costs.

Results/key findings

The forum has developed from an initial 18 members in 2010 to a current membership of 61 with participants from government departments, universities and aquaculture industry in all States and Territories. The workshops have continued to provide networking opportunities for aquatic animal health technicians and workers. Networking is more vital in the smaller discipline of aquatic animal health than the mammalian/avian area to encourage these people to learn and share their skills with others who may be new or lack experience in the aquatic field. Through the workshops, technical staff at diagnostic laboratories have developed improved competencies in a broad range of diagnostic procedures.

Implications for relevant stakeholders

The workshops have provided participants with knowledge and tools to respond more effectively in the face of disease outbreaks which appear to be occurring with greater frequency. In this way the negative impact of disease outbreaks on industry productivity and profitability will be reduced.

In addition, the younger generation of less experienced technologists attending the workshops have benefited from the interaction with their more experienced colleagues. In addition, this type of professional training supports the Quality Systems in place at each of the diagnostic laboratories.

Recommendations

Workshop feedback indicated that the AAHTF, including the skills and training workshops, was beneficial to participants and their host institutes. The technical knowledge gained, experience in presenting to peers and the contacts made during and after the workshops are invaluable. It has been recommended that the forum should continue and workshops should be held as stand-alone events on an annual basis preferably at different institutes that have strong aquatic animal health capability. A funding model for the forum needs to be agreed upon by governments and industry and implemented as soon as possible to ensure that the forum is maintained and past achievements can be built on.

Keywords *Aquatic animal health; diagnostics; skills; technology transfer; training*

Introduction

The concept of the Aquatic Animal Health Technical Forum (AAHTF) was informally discussed by some of the participants at the 2007 FRDC National Aquatic Animal Health Scientific Conference held in Cairns. During the conference it was apparent that the new and emerging technical and professional scientists were unaware that there was a small group of experienced aquatic animal health specialists across Australia that could provide them with technical information and skills, thereby accelerating their professional development.

The aquaculture industry has continued to expand, not only overseas but also in Australia. This has attracted a cadre of young scientists with little experience in aquatic animal health. The forum would provide benefits firstly by establishing an eNetwork of aquatic animal health specialists that could be called upon for advice and assistance. Secondly, to strengthen the network and build rapport among the forum members, an annual workshop would provide a non-threatening forum for open discussion and exchange of information. The concept of such a workshop environment would encourage the less experienced scientists to present aspects of their work and the exchange of information. It is understood that some of these inexperienced scientists/technologists and industry staff, may feel isolated, are even intimidated to request assistance or don't know where to go for advice, or whom to ask for input or assistance.

The "aquatic animal health" discipline involves a relatively small number of specialists that do not get the opportunity to convene at face-to-face meetings/workshops/conferences as often as those involved in the terrestrial animal health sphere. The forum would be open to all aquatic animal health specialists and industry personnel, e.g. fish farm staff, with an emphasis on encouraging participation of relatively new starters in the aquatic animal health community. Interested overseas participants attended if there were vacancies and at their own cost.

At the FRDC Aquatic Animal Health Subprogram (AAHS) business meeting held in July 2008 Mark Crane, FRDC AAHS Leader, presented the proposal to commence an Aquatic Animal Health Technical Forum to the AAHS Steering and Scientific Advisory Committees. The concept was well-supported by the AAHS members and, following submission of a successful application, the FRDC People Development Program provided funding to subsidise people to attend the inaugural face-to-face meeting and training workshop of the Aquatic Animal Health Technical Forum (AAHTF) which was held at CSIRO, Australian Animal Health laboratory, Geelong in March 2010. The meeting and workshop was conducted over 2.5 days and attended by 18 forum participants. Feedback from participants and their home organizations indicated that the workshop exceeded expectations and there was strong support for such meetings/workshops to be held annually, hosted by various organisations, particularly those with high-level capability in aquatic animal health. Based on the positive input of participants and support of their organisations, an application was submitted to the DAFF/FRDC Aquatic Animal Health Training Scheme to conduct a second workshop in March 2011. Funding obtained would subsidise participant costs, travel and accommodation and provide some reimbursement to the host laboratory for consumables, reagents and other workshop expenses. On successfully gaining joint funding from DAFF and FRDC, the second workshop was held at the Animal Health Laboratory's Fish Health Unit of the Department of Primary Industry Water, Parks, Water and Environment (DPIPWE) in Launceston, March 2011. Again, the workshop/forum organisers received extremely positive feedback, with participants, the host facility and participants' home organisations supporting the AAHTF and wanting it to continue with workshops on an annual basis.

After the 2011 workshop a three-year application was submitted to FRDC AAHS to continue the forum with annual workshops from 2013 to 2015. It was anticipated that the format of the forum (eNetwork and annual face-to-face meetings/workshops) would build on the outputs and outcomes of the forum in 2010 and 2011, which assisted in the development of functional networks for the exchange of information and enhancement of the skills of the aquatic animal health service providers.

In addition to developing a valuable national resource - a repository of technical knowledge – the forum provides mentoring to the new generation of laboratory technicians, students and staff at diagnostic laboratories, teaching institutions and aquaculture enterprises.

Objectives

1. To further develop the email discussion group for the Aquatic animal health technical forum.
2. To ensure the continuation of technical information transfer between forum members.
3. To organise annual workshops at various institutes that provide specific aquatic animal health services.
4. To open the forum to international participation and thus enhancing the knowledge base of the forum members, for example, on exotic diseases.
5. To canvass State Departments for potential funding contributions to enable the continuation of the forum beyond 2015.

Methods

Objective 1. *To further develop the email discussion group for the Aquatic Animal Health Technical Forum.*

On successfully gaining further funding for three years current forum participants were informed of the development and were encouraged to promote the activities of the forum, including actively expanding the network by contacting new entrants into the “aquatic animal health community”. In addition, workshop planning commenced with identifying potential locations for the 2013 training workshop and other locations for future workshops beyond 2013.

Prior to each workshop, participants were emailed a list of current AAHTF members, including their contact details and the disciplines (e.g. virology, parasitology) used in the conduct of their work. This enabled everybody to have electronic access with current forum members. Importantly, members were reminded that the email discussion group is not intended to be a remote diagnostic service by email, or an alternative to laboratory diagnosis. The intention is that it may assist members finding solutions to technical problems.

The email discussion group established early on in development of AAHTF continues to grow, following updating prior, and subsequent, to, each workshop. Email communication between forum members occurs as the need arises, for discussion on techniques and methods. Some examples include email communication between DPIPW, fish health laboratory, Launceston and DEPI, Bundoora, regarding methodology for histology processing of oyster spat, and communication between CSIRO AAHL Fish Diseases Laboratory and MPI, New Zealand on refining methodology for immunohistochemistry for *Bonamia* detection. Over the duration of the workshops it has become evident that participants keep in contact as a result of the interaction and rapport building at the workshops.

Objective 2. *To ensure the continuation of technical information transfer between forum members.*

Exchange of information before, during and after the workshops between forum members is encouraged. The workshops provide the opportunity for face-to-face discussion which could be continued after the workshops by email or phone. On a number of occasions, discussion during the workshop, has provided a solution to a participants’ technical problems, where others may have previously experienced a similar issue. Examples of face-to-face discussions include discussions during, and at breaks of, the last workshop on the pros and cons of using Maldi-Tof technology and whether or not it is really a good investment. Staff from other laboratories (Berrimah, Darwin) have gained some training in bacteriology and histology skills at DPIPW, Launceston after making contact with staff from that laboratory at the technical workshops. CSIRO-AFDL staff have also helped BSL staff with some molecular testing issues as a result of contacts being made at the 2015 workshop. Technical transfer, including exchange of methods/techniques/reagents, is used to facilitate technical skills development and improvement of laboratory methods, nationally.

Objective 3. *To organise annual workshops at various institutes that provide specific aquatic animal health services.*

The co-ordination of the workshops was carried out by the Principal Investigator, Lynette Williams, CSIRO Australian Animal Health Laboratory, Geelong. The Principal Investigator was assisted by Belinda Jones, Martine Cornish and Emily Wright from The Department of Primary Industry, Parks, Water and Environment (DPIPWE) Fish Health Unit Laboratory, Launceston. The majority of the organisation was undertaken electronically between these people.

On securing and selecting a suitable location and workshop date, information was distributed electronically to past participants and via the FRDC Aquatic Animal Health Subprogram Newsletter, *Health Highlights*. On distribution of initial workshop information to people who expressed an interest in attending, they were also asked to provide a potential presentation title (2015 documents shown in Appendices 1 & 2). New or previous participants were encouraged to make presentations of 10 to 20 minutes duration to not only

assist with developing the workshop program but also for them to take the opportunity to gain presentation experience in a workshop environment. The draft workshop program was prepared with participant presentation information and distributed to those who had submitted an EOI. In some instances the draft program helped the potential participant to obtain support from their host organisation and supervisor to attend.

Utilising local knowledge of a nominated staff member at the workshop host organisation, in some instances a previous workshop participant, practical sessions and relevant field trips were organised and incorporated into the workshop programs (Appendix 3).

At the three workshops, as well as presentation by forum members, there were additional presentations by the aquatic animal health staff from the host facility. These were usually very experienced aquatic animal health specialists, providing the participants with the opportunity to learn from these experts (Appendix 4).

The capacity of the venue, and therefore participant numbers, was determined by the host facility. For instance, in the 2013 South Australian workshop a conference room was used at the hotel where the participants were staying in addition to facilities at the University of Adelaide Veterinary School and the SARDI Aquaculture Centre. The 2014 and 2015 workshops utilised conference and laboratory facilities within the host venue.

Suggestions for the next workshop location were made during the current event and the final decision was made usually mid-to-late in the year prior to the workshop. Early advertising and confirmed attendance allowed participants to take advantage of obtaining cheaper flights. Accommodation for participants was booked by the Principal investigator and partial reimbursement of flight costs processed. For the majority of workshops all participant accommodation was fully covered by the project funding in addition to partial reimbursement of flight costs.

Feedback discussions were held at the end of each workshop, in addition to feedback forms being completed. Feedback was compiled and summarised annually (Appendix 6).

The project funding provided the opportunity for workshops to be held at the following venues:

2013 workshop was hosted by South Australian Research and Development Institute (SARDI) and the University of Adelaide Veterinary School, Roseworthy Campus, 20-22 March 2013.

2014 workshop hosted by the University of Sydney, Camden campus (Veterinary School), 19-21 February 2014.

2015 workshop hosted by James Cook University Veterinary and Biomedical Sciences School, 17-19 June.

These venues had a diverse range of aquatic animal health services and skills, ranging from diagnosis to research of various aquatic species. The workshops being held in three States also enabled new and additional forum members to attend from different institutes and work disciplines. The different locations allowed for visits to a range of farms with a variety of species under culture.

Objective 4. *To open the forum to international participation and thus enhancing the knowledge base of the forum members, for example exotic diseases.*

The forum was opened up to international participation. While priority was given to Australian participants in the skills workshops, where there were vacancies, overseas forum members could apply to participate in the annual workshops. Overseas participants were self-funded.

Objective 5. *To canvass State Departments for potential funding contributions to enable the continuation of the forum beyond 2015.*

In September 2015 various industries were contacted for potential funding contributions to continue the Aquatic Animal Health Technical Forum and Workshops.

Results and Discussion

Objective 1. *To further develop the email discussion group for the Aquatic Animal Health Technical Forum.*

The email discussion group has expanded over the period that the forum has been in existence. Table 1 summarises the increase in forum membership. Starting in 2010 with 18 members from Australian laboratories only with a skills base covering government and university laboratories, the forum now has 62 members from two countries and the skills base has been broadened to cover laboratories and aquaculture facilities.

Objective 2. *To ensure the continuation of technical information transfer between forum members.*

Pre- and post-annual workshop, forum members were contacted by the Principal Investigator to gauge the level of technical transfer between forum members. Forum members reported that they had continued to communicate with other members to keep communication lines open and to exchange information and to problem-solve.

In addition, the annual workshops provided an important opportunity for members to “re-connect” and discuss, face-to-face, issues and technical problems that have arisen in the course of their work. While presentations were a major component of the workshops (and for some included discussion of technical issues) there was sufficient breaks between sessions to permit further discussion of technical problems/issues.

Objective 3. *To organise annual workshops at various institutes that provide specific aquatic animal health services.*

Over the duration of the project, 2013 to 2015, the Aquatic Animal Health Technical Forum skills and training workshops have been conducted in three states, South Australia, New South Wales and Queensland. The number of forum members and participant numbers in the annual workshops have increased, with a mix of past and some new participants at each workshop. The range of aquatic fields represented has expanded. Participants from New Zealand have continued to attend each workshop. Participant numbers have been between 21 and 32 at the three workshops. Each workshop has utilised local expert presenters in the aquatic animal health field. They have also incorporated field trips to a number of facilities with a range of aquatic species under culture - from tropical, temperate and cold water - including fish, molluscs, prawns and turtles. Laboratory practical sessions were well-received and have enabled participants to see first-hand what is involved in disease diagnosis in the laboratory. The timing - February or March - was appropriate (dependant on the location and the host facility availability) and the duration of 2½ to 3 days received the best support. There was strong support for the workshop to be hosted at different venues on an annual basis and for it to be a “stand alone” workshop. A number of participants indicated that if there was no funding they would not receive support from their workplace to attend, or the number from any one institute would be significantly reduced.

Workshop participants

2013

23 registered participants attended from various facilities;

CSIRO, Australia Animal Health Laboratory, Geelong, Victoria
Victorian Institute of Animal Science, Bundoora, Victoria
Department of Primary Industry Parks Water and Environment, Launceston, Tasmania
Future Fisheries Ballina, NSW
NSW Department of Primary Industries, NSW
University of Sydney, NSW
DAFF, QLD
James Cook University, Townsville. QLD
Ministry of Primary Industries, Upper Hutt New Zealand (self-funded)

- 8 new participants

2014

28 registered participants attended from various facilities;

Department of Economic Development, Jobs, Transport and Resources, AgriBio, Bundoora, Victoria
CSIRO, Australian Animal Health Laboratory, Geelong, Victoria
CSIRO Animal, Food and Health Science, Brisbane, Queensland
Department of Primary Industry Parks Water and Environment, Launceston, Tasmania
Biosecurity, Queensland
Flinders University, South Australia
Future Fisheries Ballina, New South Wales
Australian Southern Bluefin Tuna Industry, Port Lincoln, South Australia
Charles Sturt University, Wagga, New South Wales
Paspaley Pearls, Darwin, Northern Territory
University of Adelaide, South Australia
Biosecurity Sciences Laboratory-DAFF
NSW Department of Primary Industries, New South Wales
University of Sydney, New South Wales
DAFF, Queensland
James Cook University, Townsville, Queensland
Aquarium Industries, Melbourne, Victoria
Ministry of Primary Industries, Upper Hutt New Zealand (self-funded)

- 13 new participants

2015

29 registered participants attended from various facilities;

Department of Economic Development, Jobs, Transport and Resources, AgriBio, Bundoora, Victoria
Paspaley Pearls, Darwin, Northern Territory
CSIRO, Australian Animal Health Laboratory, Geelong, Victoria
GFB Fisheries (Good Fortune Bay Fisheries), Bowen, Queensland
The Fish Vet, Perth, Western Australia
Department of Primary Industry, Parks, Water and Environment, Launceston, Tasmania
Tassal, Hobart, Tasmania
Petuna Aquaculture, Tasmania
James Cook University, Townsville, Queensland
Aquarium Industries, Melbourne, Victoria
Cleanseas Tuna, Port Lincoln, South Australia
CSIRO Animal, Food and Health Sciences, Brisbane, Queensland

Department of Agriculture and Fisheries, Biosecurity, Queensland
 Australian Institute of Marine Sciences, Townsville, Queensland
 Sealord King Reef, Cowley Creek, Queensland
 Ministry of Primary Industries, Upper Hutt New Zealand (self-funded)
 James Cook University students and lecturers

- 15 new participants

The annual increase in new forum members and participants at the forum workshops indicated that the workshop component of the forum was of benefit to the aquatic animal health providers and industry end-users. Interest and participation rates demonstrate that these workshops should continue. Interestingly, there has also been a shift in participants from 2013 where participants were all laboratory base, to the 2015 workshop which had approximately half and half laboratory and industry representation. Over the duration of the project this variation in laboratory/industry representation appears to be related to the location of the workshops. There was also a strong indication that the workshop timing would influence industry attendance and therefore participant numbers.

Another consideration is that these workshops are more relevant to on-farm staff and perhaps attendance at these is more useful than at larger scientific conferences, where only part of the conference program may be applicable to specific industries.

Table 1: Demographic of forum membership and industries represented.

Year	Forum Membership	Workshop participants	Laboratory	Industry	States	Industries represented
2010	18	17	100%	0	Vic, QLD, Tas, NT	Salmon and trout, abalone, molluscs
2011	26	25	76%	23%	Vic, QLD, Tas, NT, WA, NSW	Salmon and trout, shellfish, abalone, freshwater fish
2013	39	22	73%	27%	Tas, QLD, Vic, NSW, SA, New Zealand	Salmon and trout, oysters, abalone, prawns
2014	54	31	61%	39%	Tas, QLD, Vic, NSW, SA, New Zealand	Salmon trout, oysters, pearls, tuna, warm water fish, abalone, aquarium fish
2015	62	32	53%	47%	Tas, QLD, Vic, SA, WA, New Zealand	Salmon trout, oysters, pearls, tuna, freshwater fish, barramundi, prawns, abalone, aquarium fish

Workshop program

One of the main objectives of the early and ongoing workshops was to encourage participants that may not have had, or taken the opportunity previously, to make presentations of aspects of their work in a public forum such as a scientific conference. To make a presentation in a smaller less intimidating group from the aquatic animal health area represented a unique opportunity to gain experience in public speaking. The presentations varied in length from 10 to 25 minutes - accommodating those that may not be experienced in presenting their work or, perhaps, feeling they had no “complete” piece of work to

present. It was pleasing to note that the range of topics and standard of presentations were both interesting and of high quality. The variable length of presentations did not detract from the presentation content, or prove to be too disruptive to the program.

The outcome over the three years indicated that the presentations were well-received and in many cases after making the initial presentation, the person did so again at future workshops, demonstrating an increase in confidence. In the later workshops the inclusion of commercial industry staff, who presented work that did not cross the boundary of being commercially sensitive, was of great interest and provided a link between research, diagnosis and the commercial sector.

On registering to attend, the program was made up of presentations from the participants and also from the host institute. The programs were not separated into specific disciplines, e.g. molecular presentations all together. This allowed for a diversity of topics within each session. The intention was that the program is organised to have different topics within each session so that forum members became familiar with a broad range of topics rather than focussing on specific areas.

2013 - Glenelg, University of Adelaide, Roseworthy campus and SARDI.

The majority of participants presented aspects of their work. The program covered a diverse range of topics. Presentations covered a number of disciplines which contributed to discussion between participants over the duration of the workshop. Day 2 of the workshop, hosted by University of Adelaide at the Roseworthy Campus, commenced with presentations made by Drs Stephen Pyecroft and Charles Caraguel on fish pathology and statistical analysis. Fish dissection was demonstrated with all participants then involved in hands-on dissections of finfish. A number of participants also presented during sessions held at The University of Adelaide campus, Roseworthy.

Day 3 was held at SARDI (South Australian Research and Development Institute), West Beach. Dr Marty Deveney and James Forwood made presentations on various parasites of fish, and appropriate prophylactic treatments and appropriate retention times. A tour of the SARDI facility was conducted by staff. The workshop feedback session was chaired by Dr Deveney prior to closing.

2014 - University of Sydney, Camden campus veterinary school.

Day 1: The program commenced with introductions by the workshop co-ordinator Lynette Williams and "housekeeping" items from a University staff member. This included a brief history of the forum. At the conclusion of individuals making introductions to the other participants, presentations commenced.

The program covered a diverse range of topics and techniques which were presented by the majority of the participants. Presentations were from laboratory staff, private industry and Government agencies. The afternoon visit to EMAI was very interesting and valuable to the workshop group in illustrating how laboratories process large numbers of samples and implementation of work flows throughout that type of laboratory.

Day 2: commenced with site visits to a hydroponic facility at Cobbitty. This farm utilises hydroponic technology to commercially produce basil to supply a large domestic market. Still in developmental stages, and situated in the same building under the basil production plant, is a barramundi grow-out system. The water from the barramundi farm is being incorporated into the basil production. Waste from the facility is used as fertiliser. The other facility visited was a koi carp farm at Bringelly, which has been a commercially viable operation over a number of years.

Day 3: included presentations from University of Sydney staff and students on aspects of their current aquaculture research. Pacific Oyster Mortality Syndrome was a focus of the majority of this session. This was followed by a tour of the facility and a practical session, including dissection of oysters.

2015 - James Cook University Veterinary and Biomedical Sciences School.

Day 1: commenced with introductions by the co-ordinator, Lynette Williams including university “housekeeping” items, and a brief history of the forum. This was followed by a brief introduction from each participant followed by the first presentation. As individual participants had already introduced themselves and given a short summary of their work, discussion in the first break between participants was open and robust.

As in previous workshops the program covered a diverse range of topics and techniques with presentations made by the majority of the participants. Presentations were from laboratory staff, private industry producers and Government agencies. The afternoon visit to the James Cook MARFU aquarium facility was very interesting and valuable to the workshop group in illustrating flexibility and versatility in a reasonably large aquarium facility. After this the group then visited the Reef HQ Aquarium and Turtle hospital. The tour encompassed some behind the scenes areas, not viewed by the general public and a tour of the turtle hospital. The turtle hospital housed a number of species that had been injured and were recovering before being released back into the wild.

Day 2: commenced with a parasitological workshop conducted by Dr Kate Hutson and students. There were three practical areas set up with some juvenile barramundi which were infected with parasites and the demonstration showed how to harvest the parasites and then their various life stages were observed by microscopic examination. After an initial introduction by Dr Hutson, the group was divided into 3 groups each spending approximately 30 minutes at each station.

At the conclusion of the practical session, the group visited GFB barramundi farm at Kelso. This was a very interesting tour which demonstrated the farm operations and was informative to all, particularly for some of the group who have not had an opportunity to see a commercial fish farm. The afternoon session comprised further presentations on a variety of topics, including a number of JCU aquaculture student presentations.

Day 3: commenced with a tour of the JCU veterinary school fish facility. This is a relatively small freshwater facility. This was followed by a group photograph which was taken outside the James Cook University, Veterinary and Biomedical Sciences School.

Further presentations continued until 11am, followed by a feedback session.

At all workshops it was clear that depending on the venue/location field trips and laboratory tours would vary – but these were considered important since it provided laboratory staff with insights into operations.

Workshop dates, timing and location.

Workshops conducted in February or March on an annual basis was the preference of the group. Clearly, the host venue availability to accommodate the group and also the availability of aquatic animal experts must be taken into consideration. Thus the 2015 workshop was held in June at JCU, due to the availability of staff, conference rooms and also being outside the monsoon season. Workshops held mid-week were suitable, allowing participants to attend their workplace on Monday, travel to the venue on Tuesday and return home on Friday afternoon.

Participants supported the forum workshops being held in different States at institutes that have high-level aquatic animal health facilities. At the completion of each workshop there was discussion and an expression of interest sought on the next venue. This allowed some early planning to commence with the co-ordinator making contact with the potential venue. On confirming venue and dates the information could be distributed, allowing early flight bookings and sourcing accommodation packages which helped to keep costs within budget.

Feedback sessions

During the last day of all workshops, feedback forms were distributed and participants were encouraged to complete these anonymously. Completed feedback forms were returned either in hard copy after the workshop or electronically (due to inadequate time to complete during the workshop). After each workshop the co-ordinator compiled feedback as presented in Appendix 6.

Each feedback discussion session was chaired by a nominated experienced participant (not the co-ordinator enabling her to take notes). On all occasions there was robust discussion and comments. Ideas and recommendations from the feedback sessions have been included in the programs and distribution of information.

The organisers noted that it is extremely important to conduct the feedback sessions and must therefore, schedule adequate time to do so in the program. On some occasions, due to people departing for flights, the feedback sessions could be scheduled earlier on the last day rather than at the end of the presentations.

Summary

Over the duration of the project it has become apparent that the forum and skills/training workshops have been a resounding success. This has been indicated by increased participation and support of the forum/workshops from Australian Governments, commercial facilities and institutes, and from New Zealand.

The range of topics was interesting, informative, relevant and varied, and the standard of presentations was of a high quality. The variety of topics from laboratory staff and industry participants were well-presented and provided different perspectives about aquaculture and aquatic animal health provision. The variable length of presentations, between 15 and 30 minutes, did not detract from the presentation content, or prove to be disruptive to the scheduling within the program. The variety of presentations and mixture of topics encouraged participants to make presentations on a broad range of relevant work. At each workshop it was reinforced how important it was that the participants provide presentation titles on registration which make up the program. Some previous participants who had not presented, did so at subsequent workshops which was one of the original objectives of the AAHTF. This was a true indication that they felt confident to present their work in this particular workshop/forum environment.

Overall, participants were enthusiastic in discussion both during the workshops – after individual presentations, during breaks and at social gatherings. Participants felt the atmosphere in the venues allowed them to be sufficiently comfortable to participate actively in the question and comment sessions.

The general opinion was that it was highly beneficial to meet face-to-face, a variety of people working in the same field that had a lot, or a little, experience, and gain knowledge from others. Participants commented on the importance of the interaction between industry and laboratory workers which has assisted in each understanding the needs of the other. Industry participants have gained information and laboratory practical skills, providing them with an insight into the need for good sample preparation during the diagnostic process; laboratory workers have a better understanding of farm operations and the potential difficulty in getting good samples to the laboratory promptly. These forum activities can only make the process more efficient and the continued interaction between scientists and industry staff will further improve the diagnostic process.

Practical laboratory sessions and industry field trips were interesting and informative, giving participants the opportunity to experience aspects of aquaculture they may not have seen before. Skills gained in practical sessions could and have been implemented in participants' workplaces. These were well-received and feedback indicated that the practical sessions are an essential part of the workshops.

At each workshop, participants were encouraged to provide ideas on potential funding opportunities for the forum/training workshops to continue once the current FRDC project funding had ceased. There was some positive feedback and ideas provided.

There was strong support for the forum and its training activities to continue as a stand-alone event, to be held annually and at different institutes with high-level aquatic animal health facilities and expertise.

Objective 4. *To open the forum to international participation and thus enhancing the knowledge base of the forum members, for example exotic diseases.*

The forum coordinator has had several enquiries from overseas about participation in the forum and training workshops. These have been accommodated as much as possible, understanding that, for the workshops, there are limited places. Overseas participation at the workshops was entirely self-funded which did not appear to deter attendance.

Objective 5. *To canvass State Departments for potential funding contributions to enable the continuation of the forum beyond 2015.*

After the 2013 workshop, and with only two workshops remaining, participants were regularly reminded that there would be no further funding for the current project after 2015, to continue the workshop initiative. While the eNetwork is self-sustaining, there will be a requirement for resources to continue the skills and training workshops post-2015. Questions were added to the feedback form to reflect this and asked the following:

Would your workplace support attendance if there was no funding available to subsidise costs?

The overall opinion after the 2014 and 2015 workshops was that they may be supported to attend if there was no subsidy for accommodation and transport costs, but it would likely be more difficult to attend if there was no subsidy. In instances for multiple attendees from one institute, numbers would be significantly reduced if there was no subsidy of costs. In some cases people would not be attending due to financial constraints and budget cuts. From the industry perspective, when and where the workshop was held would also influence industry participation for some.

The continued interaction between industry and laboratory staff was strongly supported and a suggestion made that perhaps industry could provide some support funding for future workshops.

Conclusion

Nationally, aquaculture is continuing to expand and this has necessitated an increase in Australia's capacity to provide aquatic animal health services in most jurisdictions. Thus, in recent years, there has been an influx of young scientists with little experience into the field of aquatic animal health. This expansion also impacts on the aquaculture industry with an increasing need to be aware of biosecurity issues and for staff to be familiar with aquatic animal disease signs and the need for early reporting.

Although not all "aquatic" techniques are unique there are certainly some aspects that are specific to aquatic technical skills and procedures. In the absence of formal training in aquatic animal health, the forum was seen to be a vehicle by which new entrants into the aquatic animal health community could fast-track their skills and professional development as well as development of their professional network. An essential component is the annual meeting and training workshops that provide an opportunity to meet face-to-face, build rapport, discuss issues of common interest and seek solutions to technical problems. These annual workshops have provided the opportunity for the relatively small number of aquatic animal health technical staff to meet in a forum specifically for discussion of aquatic animal health issues. The funding provided has given participants the opportunity to attend specific aquatic animal health workshops. These participants possibly would not have previously had the opportunity, if no funds or subsidy were available.

Through the workshops, technical staff and diagnostic laboratories have developed improved competencies in a broad range of diagnostic procedures, potentially enabling them to respond more effectively in the face of disease outbreaks, which are occurring with greater frequency (oyster oedema disease, abalone viral ganglioneuritis, Pacific oyster mortality syndrome, bonamiosis, *Penaeus monodon* hepatopancreatitis, to name a few). This up-skilling of both industry and laboratory staff will reduce the negative impact of disease outbreaks on industry productivity and profitability. In addition, the younger less experienced generation of aquatic animal health technologists will benefit from the interaction with their more experienced colleagues. Participation of laboratory staff at the workshops contributes to individuals' training and for some institutes this is a NATA requirement. In respect to NATA training, some participants may be quite naïve about requirements and the forum and workshops gives them an opportunity to discuss areas that may require improvements. NATA accreditation may provide laboratories with a marketing advantage and it is useful for those laboratories and staff that are not involved to have some knowledge of what is involved to gain accreditation. The workshops also provide the opportunity for discussion face to face on the process involved in obtaining accreditation.

Industry workers participating in the workshop and presentations have also provided an insight into the challenges their industry face with production and disease issues. The interaction of scientific and industry technical staff and further development of this network is important to build rapport not only within their own sector but also between sectors, specifically the industry/laboratory dialogue. The forum and workshops have developed a valuable national resource, a repository of technical knowledge, and provided mentoring of the new generation of laboratory technicians. The information exchange via the email group is ongoing and has expanded.

Implications

The forum and workshops have had participants from government laboratories, universities and aquaculture facilities. For a relatively low level of funding, the training workshops have provided training to 62 individuals equating to a cost of \$850/head over the three-year period. This funding has covered all accommodation costs, full or partial reimbursement for airfares and workshop catering. The funding has contributed to participants being given the opportunity to attend; without some funding this would not have occurred as indicated by workshop feedback.

Facilitated industry-laboratory interaction has increased over the three-year period. The interaction between industry and government laboratory/university participants has been ongoing and invaluable in demonstrating what occurs in the “farm” situation and the implications this may have on laboratory procedures and outcomes. This leads to diagnostic laboratories benefiting with a flow-on affect to industry, with respect to aquatic animal health service provision. The numbers of participants from both industry and government laboratories/universities has been seen to be dependent on the timing and the location of the workshops.

The interaction between diagnostic laboratories and farm staff, potentially, makes emergency animal disease response more effective. An indication that there may be a disease outbreak could be recognised early and appropriate samples collected and forwarded to the relevant diagnostic laboratory. The AAHTF has contributed to the participants communicating with others and gaining information on areas such as appropriate sample collection and what diagnostic tests are available.

In the relatively small area of aquatic animal health and also due to the geographic location of aquatic facilities in Australia and New Zealand, the forum and workshops have helped to fast-track professional development of both laboratory and farm staff and provide effective networking opportunities. The workshops have provided the same information and training to the participants attending to take to their home institutes and provide the opportunity to network and share information.

Feedback from forum participants both during and after the workshops and also from various facilities managers has indicated that the project has benefitted individuals by up-skilling and providing training to obtain more qualified staff both at diagnostic laboratories and on-farm. After each workshop there has been interest in when the next workshop will be and the location. This indicates that there is a genuine interest in continuing to conduct the forum and workshops.

Recommendations

The way forward with respect to funding to allow the forum to continue and develop has not been identified. There appears to be a willingness on the part of both industry and state departments to facilitate its continuation. This needs to be explored further with the assistance of FRDC, the Department of Agriculture and Water Resources and the beneficiaries including state laboratories and aquaculture industries.

Further development

After discussions and feedback the forum workshop group size of a maximum of 30 participants is suitable for this project. A larger group restricts the venues available to accommodate the group “on site” at suitable host venues with aquaculture capabilities. The feedback suggests that a meeting room set up as opposed to a lecture theatre set up is more suitable to this group.

A larger group has the potential to reduce the opportunity for open discussion and interactions that have been evident and are encouraged in the workshops. If the forum had more than 30 participants expressing interest to attend, participation would have to be determined by criteria such as attended previously (so may not get to attend), new participant or a new and emerging scientist, an area of aquaculture not represented at previous workshops. At the 2015 workshop the group size was up to 32 – some University staff attended only specific sessions. Participants from New Zealand who were self-funded, did not have their participation confirmed until a vacancy was available.

The feedback from previous workshops suggested quite strongly that the AAHTF should remain an independent workshop from other aquaculture conferences. There were a number of reasons for this opinion; technical staff would not be given permission to attend a longer concurrent conference and workshop, the forum/workshop could have the potential to be “taken over” by the more senior attendees at a conference and therefore would lose its informal but structured workshop atmosphere. The AAHTF is the only opportunity some technical and farm staff get to attend an aquatic animal health-specific meeting in Australia.

Future funding may be obtained from industry and related business i.e. feed companies. Previously and after every workshop interest has been canvassed from those attending that were involved in industry (salmonid, abalone, prawn and pearling) to provide some funds to support the continuation of the AAHTF. FRDC and DAWR may also provide partial funding. At that stage there was no indication of the budget required for the continuation of the project, estimates of the budget were based on the previous three year project. Future project funds could offer participants less reimbursement and only cover the cost of accommodation, some meals and venue costs – therefore reducing the overall funding required. Announcements of the upcoming annual workshops would be made as soon as a venue was sourced, potentially just after the previous workshop, thus enabling participants to obtain cheaper airfares (potentially self-funded) and gain permission to attend.

Extension and Adoption

The forum members have all received contact details of other participants and together with the eNetwork are able to contact others. The email list of forum members and contacts is available in this report (Appendix 5) and together with the workshops program (Appendix 3) participants and managers (who receive copies of the final report) are able to directly contact presenters for further communication and information.

Extension and adoption is the core objective of this project and both the forum and the training workshops have provided the vehicle for the flow of information to all participants. Participation and interest in the AAHTF has been evident by the increase in participant numbers from various aquatic fields. Forum representation from all States and Territories throughout Australia and participants from New Zealand are a good indication that the program has successfully been adopted and would continue.

Project coverage

The project has been advertised in the CSIRO Monday Mail and also in the FRDC AAHS newsletter *Health Highlights*.

Media release November 2012 CSIRO Monday Mail article 20th May 2013

Fishy boost for new generation aquaculture technologists

Continuing their partnership to help build the health expertise within Australia's aquatic animal sector, the Fisheries Research and Development Corporation (FRDC), the Department of Agriculture, Fisheries and Forestry (DAFF) and CSIRO have extended funding for the Aquatic Animal Health Technical Forum.

Prawn, Atlantic salmon, rock lobster, Southern Bluefin tuna, barramundi, abalone and pearl farming are among the sectors expected to benefit.

The forum will run for a further three years from 1 July 2012, with \$25,000 funding from DAFF and \$26,000 from FRDC.

Principle investigator, Lynette Williams, from the Fish Diseases Laboratory at the CSIRO Australian Animal Health Laboratory in Geelong, Victoria, said "the forum provides valuable learning and networking opportunities through an annual technical workshop as well as on-demand assistance through email discussion groups. There was nothing like this for aquaculture technologists, scientists, students or fish farm staff in Australia before we held the forum's first workshop, in 2010,"

"There are a small number of experienced aquatic animal health specialists with well-developed skills and knowledge. With aquaculture expanding in Australia and around the world, this has attracted a range of new personnel with little experience in aquatic animal health. Transferring vital skills and knowledge to this new generation will help the whole aquatic animal sector," Ms Williams said.

One of the benefits already flowing from the forum to date has been to improve the capabilities of diagnostic laboratories in a broad range of diagnostic procedures. Continuing the forum into the future will enable such labs to respond more effectively in the face of disease outbreaks, which in recent years appear to be occurring with greater frequency.

"Fisheries are becoming increasingly important to the Australian economy and we are helping reduce the negative impact disease outbreaks can have on industry productivity and profitability as well as on our important aquatic environment," Ms Williams said.

This work is part of the integrated effort being undertaken by FRDC, DAFF and CSIRO in safeguarding Australia's national biosecurity.

For further information, contact Pamela Tyers on 0488 995 023 or Pamela.Tyers@csiro.au.

Project materials developed

It is not possible to attach the developed resources to this report. The appendices provide the workshop agendas that include the titles of the presentations and the practical sessions. The presenters and their contact details are provided in the listing of current forum members (Appendix 4 and 5). One of the purposes of the forum is the provision of these details so that members can contact each other when assistance is required on specific issues and technical aspects either on-farm or with respect to diagnostic procedures.

Appendices

Appendix 1: General Information

DAFF/FRDC Aquatic Animal Health Training Scheme - Aquatic Animal Health Technical Forum and Skills Training Workshop

General Information - 17th - 19th June 2015

PROGRAM

The forum for 2015 is being hosted by James Cook University, Townsville. The forum will run over 2½ days (8.30 am to 5.00 pm, and 8.30 am to 12.00 pm) from Wednesday 17th June – Friday 19th June 2015. The earlier finishing time on the Friday is to allow participants to return to their home state on the Friday.

It is anticipated that the program for the forum will be a mixture of presentations, practical and a field trip to an aquaculture facility. There will also be time for general discussion/feedback.

One of the aims of the forum is to encourage informal discussion and transfer of knowledge. Therefore, **all participants are encouraged to prepare a presentation to be presented in a welcoming environment where “no question is a stupid question”**. Presentations can be from 5 minutes to 1 hour (you have the freedom to decide) and may be on any aspect of your work, interesting cases or techniques. Once you have decided on your presentation title and duration, please let us know so that it can be included into the program.

Please email this information to belinda.jones@dpiwve.tas.gov.au, with *at least* a draft topic and duration by Friday 27th February 2015. This will enable the program to be drafted for this years' forum.

TRANSPORT

If you are intending to attend the forum, please book your flights as soon as possible, therefore not paying expensive flights closer to the workshop date. It is anticipated that a **proportion** of airfares will be refunded by the project for all participants. Due to the location the project will this year be unable to cover the entire cost of airfares for all participants. Once you have made your booking please email Lynette.Williams@csiro with details and cost.

ACCOMMODATION

25 rooms are held at the Water's Edge, The Strand, 63 The Strand Esplanade, Townsville Qld 4810

<http://www.watersedgethestrand.com/>

Room rate is \$110/night. The project will cover participant's costs for 3 night's accommodation (Tuesday, Wednesday and Thursday nights only). All bookings are being co-ordinated as a group booking through Lynette Williams at AAHL.

Please contact Lynette.Williams@csiro

Who will confirm a room booking. If you intend to stay additional nights, you will need to let Nette know and she will include in the initial booking information with additional nights at YOUR cost.

Breakfast is not included in this rate, however rooms have kitchen facilities and there are a range of breakfast eateries located within walking distance of the hotel along The Strand.

REGISTRATION

Participants will need to return the attached registration form to Belinda Jones belinda.jones@dpiwve.tas.gov.au making sure any special dietary needs are outlined, by Friday 27th February 2015.

MEALS

Tuesday dinner will be at **your** expense.

Wednesday a venue will be selected that is reasonably priced and within walking distance of accommodation. This will be at **your** expense.

Thursday dinner will be **FUNDED** by the project.

Meals provided during the workshop will include;

All morning teas, lunches and afternoon teas Wednesday – Friday (where applicable) will be provided by the project.

CONTACTS for more information:

Nette Williams – AAHL Lynette.Williams@csiro

Belinda Jones – DPIWVE TAS Belinda.Jones@dpiwve.tas.gov.au

Martine Cornish – DPIWVE TAS Martine.Cornish@dpiwve.tas.gov.au

Registration Form

17th-19th June 2015. Hosted by College of Public Health, Medical and Veterinary Sciences,

James Cook University, Townsville

Title:	
Surname:	
Preferred Given Name:	
Organisation:	
Position:	
Email address:	
Contact phone number:	
Special dietary requirements (if any):	
Areas of work or current projects:	
Areas of work interests:	
You are encouraged to make a presentation on your area of work, an interesting case, techniques, research etc. This helps to make up the workshop program. If you intend to present, please give a general topic/ title and duration (e.g. 5 to 15 minutes)	
Additional information:	

Please return the completed form to Belinda.Jones@dpipwe.tas.gov.au by Friday 27th Feb. 2015.

***Please note: Your name, organisation, area of work and work interests will be collated and distributed to workshop participants prior to the event.**

*Acknowledgement
2012-002 FRDC*

Appendix 3: Workshop Programs

Agenda for Aquatic Animal Health Technical Forum 2013

Adelaide

Wednesday 20/3/2013

9am Start

- 9:00 – 9:30 *Nette Williams* - Welcome, program outline and introductions
9:30 – 9:45 *Nette Williams* - History of the workshop
9:45 – 10:00 *Julian Motha* – A novel aquabirnavirus in Rainbow trout in Victoria
10:00 – 10:15 *Karine Cadoret* – The use of tissue microarrays in fish histopathology
10:15 – 10:30 *John Hoad* – Proficiency testing

Morning Tea 10:30-11:00am

- 11:05 – 11:20 *Debra Doolan* – Winter mortality syndrome in *Saccostrea glomerata* (Sydney rock oysters)
11:20 – 11:35 *Martine Cornish* – Isolation of Aquabirnavirus from Atlantic salmon. Isolation of virus - from tissue collection, to cell culture, to processing tissue for virus isolation.
11:35 – 11:50 *Christine Huynh* – Southern Bluefin Tuna mortality investigation
11:50 – 12:05 *Peter Mohr* – Evaluation of Megalocytivirus Molecular Tests
12:05 – 12:20 *Joanne Slater* – Luminex an overview

Lunch 12:30 – 2.00pm (Off site – at participants own expense)

- 2:10 – 2:25 *Cara Brosnahan* – What goes on in the Aquatic Animal Diseases laboratory in Wallaceville?
2:25 – 2:40 *Emily Wright* - Bohle iridovirus (BIV) infection profile in fish – filling the information gap through undergraduate teaching
2:40 – 2:55 *Natale Snape* – Can cellular immunity be used to assess fish health?
2:55 – 3:10 *Nette Williams* – Exotic virus importation and testing
3:10 – 3:25 *Cara Brosnahan* – Case Review

Afternoon Tea 3:30 - 4:00

- 4:00 – 5:00 General group discussion regarding techniques, difficulties encountered, solutions etc.

Dinner 6:30 pm

Venue – Tascaviva, 18 Jetty Road, Glenelg, SA 5045 (Funded by the project)

Thursday 21/03/2013

8:30 am Start

8:30 – 9:45 Bus travel to University of Adelaide, Roseworthy Campus, Barossa Valley
(To be met by Stephen Pyecroft and/or Charles Caraguel and taken to lecture theatre)

10:00 – 11:00 *Stephen Pyecroft* (University of Adelaide, Senior lecturer in Veterinary Pathology)
Presentation on Fish Pathology

Morning Tea 11:00 – 11:30

11:30 – 12:45 *Stephen Pyecroft* – Post Mortem Room practical exercise (barramundi dissection and sample collection)

*****Enclosed footwear must be worn (no sandals, thongs or open toes)*****

Lunch 1:00 – 2:00

2:00 – 3:00 *Charles Caraguel* (University of Adelaide, Veterinary Epidemiology & Aquatic Population Health)
Interactive discussion - Anything you wanted to ask an epidemiology geek

Afternoon tea 3:30-4:00

4:00 – 4:15 *Karine Cadoret* – isolation and culture of various Neoparamoeba species

4:15 – 4:30 *Nette Williams* – Abalone - the technical issues facing AFDL for abalone infectivity trials

4:30 – 4:45 *John Hoad* – cell culture and virus isolation

5:15 – 5:45 Travel to dinner (by bus)

Forum Dinner 6:00pm Novotel Barossa Valley Resort 42 Pioneer Ave via Golf Links Rd, Rowland Flat
Barossa Valley SA 5352 (funded by the project)

10 pm – collection from dinner and bus transport to Haven Inn, Adelaide

Friday 22/03/2013

Venue: South Australian Aquatic Sciences Centre (SARDI) 2 Hamra Avenue, West Beach

8:45 am – travel to SARDI West Beach (Taxi)

9am Start

9:00 – 10:00 *Marty Deveney* SARDI - Practical management of parasitic diseases in aquaculture
James Forwood SARDI - Management options for the monogenean *Lepidotrema bidyana* infecting silver perch
Discussion

10:00 – 10:30 Morning Tea

10:30 – 12:00 Tour of West Beach Facilities (split into groups)

12:00 – 12:30 Lunch

12:45 – 2:00 Feedback/Wrap up

Program

Day 1 Wednesday 19th February 2014

- 8:40 am Bus pickup from Crown Hotel reception.
- 8.45am Bus pickup from Camden Valley Inn reception. Transport to University of Sydney
- 9:00 – 9:15 *Nette Williams* - Welcome, program outline and introductions
- 9:15 – 9:30 *Professor Richard Whittington* – Introduction to the University of Sydney laboratory and its activities
- 9:45 – 10:00 *Min Rao* – RNA interference to clear viral infection from shrimp
- 10:00 – 10:15 *Peter Mohr* – Detection of a new genotype of the yellow head complex of viruses in *Penaeus monodon*
- 10:15 – 10:30 *Emily Wright* – Viral ToxGlo technique for quantifying fish viruses
- 10:30-11:00am Morning Tea**
- 11.00 – 11:15 *Josiah Pitt* – Maintaining Fish Health: An ornamental fish wholesaler’s perspective
- 11:15 – 11:30 *Shokoofeh Shamsi* – Emerging parasitic zoonoses in Australian seafood
- 11:30 – 11:45 *James Forwood* – Improving management of *Ichthyophthirius multifiliis* on rainbow trout farms
- 11:45 – 12:00 *David Cummins* – Development of a Real-time PCR test for the detection of *Perkinsus olseni*
- 12:00 – 12:15 *Henry Lane* – Case Study
- 12:15 – 12:30 *Christine Huynh* – Case Study: post-transfer mortality of Barramundi fingerlings
- 12:30 – 1:30 pm Lunch**
- 1:30 Travel to EMAI (bus)
- 2:00 – 4:00 Tour of EMAI laboratory
- ***Enclosed footwear must be worn (no sandals, thongs or open toes) *****
- 4:00 Return travel to hotels (bus)
- 6:30 pm *Dinner Barenz – 130 Argyle St, Camden*

Day 2 Thursday 20th February 2014

- 8:40 am Bus pickup from Crown Hotel reception.
- 8.45am Bus pickup from Camden Valley Inn reception. Travel to UESA, Cobbitty
- 9:00 – 11:00 Site visit – UESA <http://www.uesa.com.au/farms/>
- ***Enclosed footwear must be worn (no sandals, thongs or open toes) *****
- 11:00 – 11:20 Travel to Koi farm, Bringelly
- 11:20 – 12:30 Site visit - Koi farm, Bringelly
- ***Enclosed footwear must be worn (no sandals, thongs or open toes) *****
- 12:30 – 1:00 Return travel to University of Sydney, Camden.

- 1:00 – 2:00** **Lunch**
- 2:00 – 2:15 *Belinda Jones* – Pox and pestilence at Mt Pleasant (an overview of interesting gross pathology cases from Tasmania)
- 2:15 – 2:30 *Janine Davis* – Sampling for fish health investigations
- 2:30 – 2:45 *Kirsten Rough* - Climate and oceanographic influence on Southern Bluefin Tuna spatial distribution
- 2:45 – 3:00 *John Hoad* - Spring Viraemia of Carp Virus
- 3:00 – 3:15 *David Mills* – Oyster Oedema Disease in pearl oysters: An industry perspective
- 3:15 – 3:30 *Joanne Platell* – Biosecurity Queensland’s veterinary laboratories role in Queensland Aquaculture
- 3:30 – 4:00** **Afternoon tea**
- 4:00 – 4:15 *Vivianne Dunn* – Vibrio identification project
- 4:15 – 4:25 *Thuy Tran* – Isolation & identification of *Francisella philomiragia* from farmed barramundi
- 4:25 – 4:35 *Susan Walsh* – Managing Nodavirus in farmed barramundi
- 4:35 – 5:05 *Charles Caraguel* - Why a false test result is not the fault of the test or its operator.
- 5:10 Bus transport to hotels
- 6:30pm *Forum Dinner Enzo’s* – 39 John St, Camden www.enzoitalianrestaurant.com

Day 3 Friday 21st February 2014

- 8:40 am **Bus pickup from Crown Hotel reception.**
- 8.45am **Bus pickup from Camden Valley Inn reception. Transport to University of Sydney**
- 9:00 – 9:30 *Professor Richard Whittington (University of Sydney)* – POMS in the Hawkesbury River 2013 – learning from an outbreak investigation
- 9:30 – 9:50 *Diana Jaramillo (University of Sydney)* – Nervous necrosis virus in Australian bass and barramundi
- 9:50 – 10:10 *Paul Hick (University of Sydney)* – Pacific Oyster Mortality Syndrome – history in Australia, genetic selection program and experimental infection models
- 10:10 – 10:30 *Olivia Evans (University of Sydney)* – searching for the environmental reservoir for POMS in wild molluscs
- 10:30 – 11:00** **Morning tea**
- 11:00 – 12:30 Practical lab demonstration – oyster opening, dissection and diagnostic sample collection
- ***Enclosed footwear must be worn (no sandals, thongs or open toes) *****
- 12:30 – 1:30** **Lunch**
- 1:30 – 2.30 Discussion, feedback
- 2:30 Bus transport to Campbelltown Train Station

Program

Day 1 Wednesday 17th June 2015

Please note – enclosed footwear is required at the JCU vet school and for all practical activities

8:30	Bus pickup from hotel
9:00	Nette Williams – Welcome on behalf of the organising committee, program outline and introductions
9:15	Ellen Ariel - Welcome and site induction
9:30	Martine Cornish/Emily Wright – Biosecure Fish Facility overview
10:00	Brett Smith/Robert Barron – Management techniques and observations of Barramundi diseases in marine aquaculture
10:20	Vivianne Dunn – Case study Mycobacterium isolation
10:30	Dave Mills – Oyster Oedema Disease response
10:50	Rachel Hodgeman - Maldi-TOF and its use for identifying aquatic bacteria
11:00-11:15	Morning Tea
11.30	Janine Davis – <i>Flavobacterium columnare</i> from a Microbiological and Histological perspective
11:40	Chantelle Reid – Amoebic Gill Disease – impacts and research in the salmon industry
12:00	Leo Foyle - Gill diseases. An emerging issue in plain view
12:30	Josiah Pit – The prevalence of Megalocytivirus on imported Aquarium Fish entering Australia
1:00 – 1:50	Lunch
1:50	Walk to MARFU
2:10	Tour of MARFU facility – James Cook University
3:10	Bus transfer to Reef HQ
3:30	Tour of Reef HQ (approx. 90 min)
5:00	Finish – approximately 20 minute walk back to the hotel
7:00 pm	<i>Dinner at C Bar - The Strand, Gregory Street Headland, Townsville Qld 4810 (Approx. 2 mins walk from the hotel)</i>

Day 2 Thursday 18th June 2015

Please note – enclosed footwear is required at the JCU vet school and for all practical activities

- 8:30 Bus pickup from hotel
9:00-10:30 Parasitology workshop – run by Kate Hutson JCU
10:30 Bus transfer to GFB Fisheries, Kelso
11.00-12:30 GFB Fisheries tour
12:30 Bus transfer to JCU
1:00-1:30 Lunch
- 1:30-2:00 Dan Smith - Application of gill ATP'ase assay to assess smoltification in Atlantic salmon
2:00 Ellen Arielle – EU Ringtest sample preparation (filled in for Karina Jones, ill)
2:20 Md. Shamim Ahasan – Phage therapy for multidrug resistant bacteria in green sea turtles
2:40 Narges Mashkour – isolating viruses when there are no established cell lines
3:00 Jarryd Bailey – Technical applications on commercial fish farms- a focus on Salmonid production
3:17 Katy Booth – *Perkinsus olsenii* in New Zealand
3:30 Darren Underwood - Viral responses in penaeid prawns and impacts on diagnostic testing
3:45 Leanne Hillier – Microsystems validation on bacteria isolated from Queensland Aquatic Animals
4:00 Julian Motha – detection of *Bonamia sp.* in flat oysters from Port Phillip Bay
Afternoon tea at JCU
Finish (Bus transfer to hotel)
- 7:00pm *Forum Dinner – The Brewery, 252 Flinders Street, Townsville CBD, QLD 4810*

Day 3 Friday 19th June 2015

Please note – enclosed footwear is required at the JCU vet school and for all practical activities

- 8:30 Bus pickup from hotel
- GROUP PHOTO
- 9:00 Tour of JCU vet school fish facility
9:40 David Cummins - PCR control development: Positive controls plasmids and internal extraction controls
9:55 James Forwood - Praziquantel toxicity in yellowtail kingfish
10:15 Lone Hoj - A multiplex PCR-based protocol for identification and quantification of *Vibrio harveyi*-related species
10:25 Richmond Loh – practical tips for diagnostic sampling and field diagnostics
11:30 Morning tea incorporating Feedback, discussion, where to from here...
- 11:45 Departure**

Appendix 4: Workshop Participants and Expert Presenters

2013

Surname	First	Position	Institute
Motha	Julian	Research Scientist	VIAS, Burwood
Jones	Belinda	Technician	DPIPWE, Launceston
Cornish	Martine	Technician	DPIPWE, Launceston
Davis	Janine	Technician	DPIPWE, Launceston
Cadoret	Karine	Laboratory manager	University of Tasmania
Mohr	Peter	Technical Officer	CSIRO, AAHL, Geelong
Hoad	John	Technical Officer	CSIRO, AAHL, Geelong
Slater	Joanne	Technical Officer	CSIRO, AAHL, Geelong
Williams	Nette	Technical Officer	CSIRO, AAHL, Geelong
Huynh	Christine	Associate veterinarian	Future Fisheries, Ballina
Doolan	Debra	Aquatic Biosafety Officer	NSW Dept, of Primary Industries
Snape	Natalie	Technician	DAFF, QLD
Tweedie	Alison	Research Assistant	University of Sydney Aquatic school
Hodgeman	Rachel	Technician	VIAS, Burwood
Wright	Emily	Technician	James Cook University, Townsville
Brosnahan	Cara	Aquatic Officer	Ministry for Primary Industries, Upper Hut, NZ
Expert Presenters			
Pyecroft	Steven	Veterinarian (Senior Lecturer Veterinary Pathology)	University of Adelaide Veterinary School
Caraguel	Charles	Veterinarian (Senior Lecturer)	University of Adelaide Veterinary School
Deveney	Marty	Parasitologist	SARDI, West Beach
Forwood	James	PhD Student	Flinders University

Surname	First	Position	Institute
Motha	Julian	Research Scientist	DEPI Bundoora, Victoria
Jones	Belinda	Technical Officer	DPIPWE, Launceston
Cornish	Martine	Technical Officer	DPIPWE, Launceston
Davis	Janine	Technical Officer	DPIPWE, Launceston
Dunn	Vivianne	Technical Officer	DPIPWE, Launceston
Pit	Josiah	Operations & Supply manager	Aquarium Industries, Melbourne
Dep	Mary	Research Scientist	DEPI Bundoora, Victoria
Platell	Joanne	Senior Scientist	Biosecurity Queensland
Tran	Thuy	Laboratory Technician	Biosecurity Sciences Laboratory – DAFF
Wright	Emily	Technician	James Cook University, Townsville
Mills	David	Manager Research and Development	Paspaley Pearling Company Pty Ltd, Darwin
Lane	Henry	Technician	Ministry for Primary Industries, New Zealand
Cummins	David	Research Projects Officer	CSIRO, AAHL, Geelong
Forwood	James	PhD Student	Flinders University
Rao	Min	Research Projects Officer	CSIRO Animal, Food and Health Science, Brisbane
Huynh	Christine	Associate veterinarian	Future Fisheries Veterinary Service, Ballina
Mohr	Peter	Technical Officer	CSIRO, AAHL, Geelong
Hoad	John	Technical Officer	CSIRO, AAHL, Geelong
Slater	Joanne	Technical Officer	CSIRO, AAHL, Geelong
Williams	Nette	Technical Officer	CSIRO, AAHL, Geelong
Shamsi	Shokoofeh	Lecturer	Charles Sturt University
Walsh	Susan	Molecular Technologist	NT DPIF
Rough	Kirsten	Research Officer	Australian Southern Bluefin Tuna Industry Association Research Office Port Lincoln
Caraguel	Charles	Aquatic Epidemiologist	University of Adelaide
Go	Jeffery	Veterinarian	NSW Department of Primary Industries
Deutscher	Ania	Technical Officer	NSW Dept of Primary Industries, EMAI
Corish	Juliet	Manager, Strategy and Standards Aquatic Biosecurity	NSW Department of Primary Industries
Campbell	Geoff	Veterinarian	NSW Department of Primary Industries
Expert Presenters			
Whittington	Richard	Veterinarian (Professor)	University of Sydney
Jaramillo	Diana	PhD Student	University of Sydney
Hick	Paul	Veterinarian	University of Sydney
Evans	Olivia	PhD Student	University of Sydney
Tweedie	Alison	Research Assistant	University of Sydney

Surname	First	Position	Institute
Motha	Julian	Research Scientist	DEPI Bundoora, Victoria
Jones	Belinda	Technical Officer	DPIPWE, Launceston
Cornish	Martine	Technical Officer	DPIPWE, Launceston
Davis	Janine	Technical Officer	DPIPWE, Launceston
Dunn	Vivianne	Technical Officer	DPIPWE, Launceston
Pit	Josiah	Operations & Supply manager	Aquarium Industries, Melbourne
Wright	Emily	Technician	DPIPWE, Launceston
Mills	David	Manager Research & Development	Paspaley Pearling Company Pty Ltd, Darwin
Cummins	David	Research Projects Officer	CSIRO, AAHL, Geelong
Forwood	James	PhD Student	Flinders University, Adelaide
Williams	Nette	Technical Officer	CSIRO, AAHL, Geelong
Anders	Joe	Technician	GFB Fisheries, Queensland
Barron	Robert	Technician	GFB Fisheries, Queensland
Smith	Brett	Hatchery manager	GFB Fisheries, Queensland
Tomlinson	Chris	Hatchery/nursery manager	GFB Fisheries, Queensland
Loh	Richmond	Veterinary consultant	The Fish Vet, WA
Hodgeman	Rachel	Technician	VIAS, Burwood
Reid	Chantelle	Lab technician	Tassal, Tasmania
Bailey	Jarryd	Technical Officer	Tassal, Tasmania
Smith	Dan	Fish health field officer	Tassal, Tasmania
Underwood	Darren	Scientist	Dept of Agriculture and Fisheries, Biosecurity Queensland
Hillier	Leanne	Senior Technical Officer	Dept of Agriculture and Fisheries, Biosecurity Queensland
Hoj	Lone	Research Scientist	AIMS, Townsville
Sims	Phillipa	Veterinarian	Petuna Aquaculture
Booth	Katy	Technician	Ministry for Primary Industries, Upper Hut, New Zealand
Expert Presenters			
Ariel	Ellen	Associate Professor	James Cook University, Townsville
Foyle	Leo	Veterinarian (Senior Lecturer)	James Cook University, Townsville
Hutson	Kate	Senior Lecturer	James Cook University, Townsville
Additional JCU students for practical sessions.			

Appendix 5: Forum Members and contact details

Surname	First	Institute	Email address
Ariel	Ellen	James Cook University, Townsville	ellen.ariel@jcu.edu.au
Bailey	Jarryd	Tassal, Tasmania	jarryd.bailey@tassal.com.au
Booth	Katy	Ministry Primary Industries, New Zealand	katy.Booth@mpi.govt.nz
Brosnahan	Cara	Ministry for Primary Industries, NZ	cara.Brosnahan@mpi.govt.nz
Cadoret	Karine	University of Tasmania	kcadoret@amc.edu.au
Caraguel	Charles	University of Adelaide Veterinary School	charles.caraguel@adelaide.edu.au
Cornish	Martine	DPIPWE, Launceston	martine.cornish@dpipwe.tas.gov.au
Cummins	David	CSIRO, AAHL, Geelong	david.cummins@csior.au
Davis	Janine	DPIPWE, Launceston	janine.Davis@dpipwe.tas.gov.au
Dep	Mary	VIAS, Burwood	mary.dep@ecodev.vic.gov.au
Deveney	Marty	University of Adelaide Veterinary School	marty.Deveney@sa.gov.au
Doolan	Debra	NSW Dept of Primary Industries	debra.doolan@dpi.nsw.gov.au
Dunn	Vivianne	DPIPWE, Launceston	vivianne.dunn@dpipwe.tas.gov.au
Evans	Olivia	University of Sydney	olivia.evans@sydney.edu.au
Forrester	Justin	GFB Fisheries	farmmanager@gfbfisheries.com
Forwood	James	Flinders University	james.forwood@flinders.edu.au
Foyle	Leo	James Cook University, Townsville	leo.foyle@jcu.edu.au
Hayakijkosol	Orachun	James Cook University, Townsville	orachun.hayakijkosol1@jcu.edu.au
Hick	Paul	University of Sydney	paul.hick@sydney.edu.au
Hillier	Leanne	Dept of Agriculture and Fisheries, Biosecurity Queensland	leanne.hillier@daff.qld.gov.au
Hoad	John	CSIRO, AAHL, Geelong	john.hoad@csiro.au
Hodgeman	Rachel	VIAS, Burwood	rachel.hodgeman@ecodev.vic.gov.au
Hoj	Lone	AIMS, Townsville	l.hoj@aims.gov.au
Hutson	Kate	James Cook University, Townsville	kate.hutson@jcu.edu.au
Huynh	Christine	Future Fisheries, Ballina	christine.huynh@tassal.com.au
Jaramillo	Diana	University of Sydney	diana.jaramillo@sydney.edu.au
Jones	Belinda	DPIPWE, Launceston	belinda.jones@dpipwe.tas.gov.au
Lane	Henry	Ministry Primary Industries, New Zealand	henry.lane@mpi.govt.nz
Loh	Richmond	Veterinary Consultant	thefishvet@gmail.com
Mills	David	Paspaley Pearling Company, Darwin	dmills@paspaley.com.au
Mohr	Peter	CSIRO, AAHL, Geelong	peter.mohr@csiro.au
Motha	Julian	VIAS, Burwood	julian.motha@ecodev.vic.gov.au
Pit	Josiah	Aquarium Industries, Melbourne	josiahp@aquariumindustries.com.au
Platell	Joanne	Biosecurity Queensland	joanne.platell@daff.qld.gov.au
Pyecroft	Steven	University of Adelaide Veterinary School	Steven.pyecroft@adelaide.edu.au
Rao	Min	CSIRO Animal, Food and Health Science, Brisbane	min.rao@csiro.au
Reid	Chantelle	Tassal, Tasmania	chantelle.reid@tassal.com.au
Rough	Kirsten	Tuna Industry, Port Lincoln	kirstenrough@bigpond.com
Sander	Corey	GFB Fisheries	farmmanager@gfbfisheries.com
Shamsi	Shokoofeh	Charles Sturt University	sshamsi@csu.edu.au
Sims	Phillipa	Petuna Seafoods, Tasmania	phillipa.sims@petuna.com
Slater	Joanne	CSIRO, AAHL, Geelong	joanne.slater@csiro.au
Smith	Dan	Tassal, Tasmania	daniel.smith@tassal.com.au
Smith	Brett	GFB Fisheries	farmmanager@gfbfisheries.com
Snape	Natalie	DAFF, QLD	natale.snape@daff.qld.gov.au
Tomlinson	Chris	GFB Fisheries	farmmanager@gfbfisheries.com
Tran	Thuy	Biosecurity Sciences Laboratory – DAFF	thuy.tran@daff.qld.gov.au
Tweedie	Alison	University of Sydney Aquatic school	alison.Tweedie@sydney.edu.au

Underwood	Darren	Dept of Agriculture and Fisheries, Biosecurity Queensland	darren.Underwood@daff.qld.gov.au
Walsh	Susan	DPIF, Northern Territory	susan.walsh@nt.gov.au
Whittington	Richard	University of Sydney	richard.whittington@sydney.edu.au
Williams	Nette	CSIRO, AAHL, Geelong	lynette.williams@csiro.au
Wright	Emily	James Cook University, Townsville	emily.wright@dpiwve.tas.gov.au

Note: the email contacts were correct when participants attended workshops.

Appendix 6: Participant feedback summary

Aquatic Animal Health Technicians Forum, Workshop, Adelaide, 20th to 22nd March 2013

Participant Review Form

Feedback collated from 15 participants

ITEM	Excellent	Good	OK	Poor
Location and venue: (Adelaide)	11	4		
Accommodation:	3	9	2	
Other suggestions	Good value for location, easy access to airport			
Date and duration:	10	5		
Other suggestions				
Format:				
<ul style="list-style-type: none"> • Presentations • interaction 	11	1		
Other suggestions				
Program topics	9	1		
Other suggestions	Epidemiology, mollusc can crustacean sessions. More variety. Participant's recognised program depends on their input.			
Length (2 and a half days- 3 days):	10	2		
Other suggestions	Good length for workshops.			
Food: (suitable, good, bad, enough...)				
<ul style="list-style-type: none"> • Morning breaks • Lunches • Afternoon breaks 	11	1		
Comments	Good food and plenty available. Special dietary requirements catered for.			
2014 Venue- suggestions/topics	Sydney was mentioned as a potential 2014 location. Collaboration with EMAI. This location was supported by 6 participants. Other suggestions were Brisbane, Townsville, Darwin, Western Australia			
Other comments	<p>Fantastic</p> <p>Good atmosphere conducive to collaboration and discussion. Important to retain this aspect in following workshops.</p> <p>Good content- excellent to see what others do in their labs. Greta to have time after sessions for questions and to trouble shoot.</p> <p>Well organised.</p> <p>Thanks for organising a well run and interesting forum that gave great opportunity to meet and interact with others in the aquatic field.</p> <p>Great. Wonderful to talk to others in the aquatic field and to know who to ask for help if required. Thanks for organising.</p> <p>Thanks for the great initiative of the workshop. Good platform and format for networking of technical people.</p> <p>Well organised and interesting. Thanks for the hard work.</p> <p>Overall a great range of presentations and an enjoyable forum.</p>			

**Aquatic Animal Health Technicians Forum Workshop,
Sydney, 19-21 February 2014**

Participant Review Form

Feedback collated from 28 participants

ITEM	Excellent	Good	OK	Poor
Location and venue: (Sydney)	25	3		
Accommodation:	13	9	2	NB; 3 stayed privately
Other suggestions	Camden campus was an excellent venue Good that transport was provided and accommodation in town			
Time of year:	16	10	2	
Other suggestions	Good to be outside of tertiary teaching time x2 Slightly later to allow people to return from Christmas break After March February was suitable Slightly later April/May			
Format: <ul style="list-style-type: none"> • Presentations • interaction 	21	8		
Other suggestions	Industry/technical workshops to demonstrate sampling/processing/fixation etc More time after talks for questions More practical work? a teaching session x2 More practical prawn dissection and preparation Longer breaks to allow more discussions Group discussion (10-15 minutes) at the end of each session Field trip component was excellent Less presentations/-more discussion Short talks are good This workshop included more industry topics which were interesting and a great inclusion in the forum			
Program topics	23	5		
Other suggestions	Good variation and wide coverage of topics Discussion on current topics of interest would be beneficial Consultation with industry to identify key areas or concerns to discuss Great variety of topics but need to be mindful of keeping to presentation time allocations All disciplines were very well represented Well organised Diverse and good to have industry involved Great mixture of topics and experience of technical presenters Practical demonstrations to be held on the second day- not last day to allow more time			
Length (2 and a half days- 3 days):	19	7		
Other suggestions	One day longer 3 days is good Note: No other feedback on length or workshop			
Food: (suitable, good, bad, enough...) <ul style="list-style-type: none"> • Morning breaks • Lunches • Afternoon breaks 	19	5	1	1
Comments	Plenty of food Excellent x3 Too much food Well done More variety			

2015 Venue- suggestions/topics	CSIRO, AAHL x2 Perth- Murdoch Townsville – James Cook University x4 Northern Territoryx7 Tasmania or Western Australia New Zealand x2 Back to back with AAHS 2015 conference Queensland x2 Other than Sydney a University environment
Would your workplace support you attending further workshops if your costs were not subsidised?	Yes - but only one person could attend not 4 Yes x5 Yes- but not 3 as this year Yes- one person certainly not two Probably Probably - but not if workplace had to meet all costs Perhaps 1 person Most likely x 2 Depends on the number of conferences/workshops in that year. Possibly Difficult Maybe x3 Probably not in current economic climate Unlikely as budgets to travel to attend conferences have been significantly reduced Depends on availability of funds No x3
Other comments	Include more industry people to help foster link with laboratory technicians Invite laboratory suppliers and they may provide some funds Keep focus on technicians- avoid getting too top heavy More industry people to demonstrate on-farm operations and the influence of diagnostics Good to have industry participants Farm visits were excellent and enjoyable Great interaction and will recommend and hope to attend in future Great workshop as always Overall organisation was excellent Highly informative and great to see industry involved Invite more industry people to increase communication between industry and technical people to understand each other's limitations Fantastic forum for technical staff AAHTF has grown from strength to strength and has formed a good network of interested scientists Well done A very useful, interesting and informative experience Great all round Abstracts of presentation topics to be distributed at the end of the workshop

**Aquatic Animal Health Technicians Forum
Workshop, Townsville, 17th to 19th June, 2015
Participant Review Form**

Feedback collated from 27 participants

ITEM	Excellent	Good	OK	Poor
Location and venue: Townsville	23	4		
Accommodation:	16	8	NA 3	
Other suggestions				
Time of year:	18	7	2	
Other suggestions	Combine with subprogram conference x3 Winter ideal for industry attendees July as end of financial year is busy			
Format: <ul style="list-style-type: none"> • Presentations • interaction 	23	4	1	
Other suggestions	<ul style="list-style-type: none"> • More concise presentations • Presentations in morning and interaction/trips better in PM • Brief and focused on more practical side of disease happening in the field • Group discussion based on specific topics suggested by participants • An inclusive open forum. I was impressed. Excellent overview presentations • Good tours and field trips- informative and practical • Tours and field trips were informative and practical • 			
Program topics	19	8		
Other suggestions	Good that the talks were mixed up and not long session on one topic Visible clock or timer. Arrive at venue 15 minutes before start time Diverse- science and industry Student presentations should be limited to those presenting results			
Length (2 and a half days - 3 days):	19	8		
Other suggestions	Could be longer, was a lot to take in in a short amount of time Good variety of topics and exposure to different areas of research. Field trips and workshops excellent. Good length Could be longer with so many participants			
Food: (suitable, good, bad, enough...) <ul style="list-style-type: none"> • Morning breaks • Lunches • Afternoon breaks 	19	7	1	
Comments	More food in the afternoon to get through to dinner Nice variation of food provided Having organised dinners good for mingling			

2016 Venue- suggestions/topics	Tasmania x5 WA/NT DPIPWE, Launceston x3 Geelong Brisbane Launceston Hobart Darwin, NT
Potential funding bodies?	FRDC x2 TSGA x2, Feed Companies, new FRDC grants FRDC People Development Industry Other Government bodies State DPI AAHC/ IPA's
Would your workplace support you attending further workshops if your costs were not subsidised?	Yes x4 Probably reduce to one participant only Possibly x7 Depend on venue and costs involved Probably not 3 people attending though Most likely, but not as many from one lab x3 Yes dependant on program content Subsidy helps greatly Probably not. Very hard to get much funding for laboratory staff to travel
Other comments	<ul style="list-style-type: none"> • Well organised and good venue and facility x5 • Great work • Excellent forum • Enjoyed the tours • Great to meet industry/scientists from similar and diverse areas • Worthwhile and productive forum, would be a shame to not continue. • Excellent networking between industry, diagnosticians and research/teaching. • Very well run and a great bunch of people. Group size meant got to meet everyone. • Thanks to JCU for hosting forum • Thanks for organising was great. • Overall very good value • Enjoyed the forum and it's format very much.

Acknowledgement
2012-002 FRDC

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Appendix 7: Workshop participant photographs

2013 South Australian Aquatic Sciences Centre



2014 University of Sydney



2015 James Cook University

