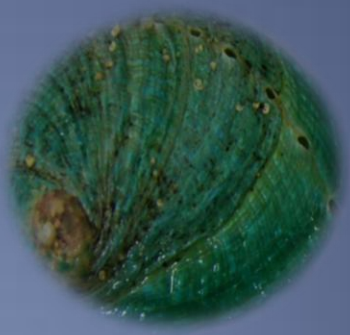
People Development Program: Aquatic Animal Health Training Scheme

# Aquatic Animal Health Technical Forum and Skills Training Workshop

## Final Report

Lynette M. Williams,
Mark St. J. Crane and
Belinda K. Jones

February 2012
FRDC Project No. 2009/315.02



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CSIRO

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**NON-TECHNICAL SUMMARY**

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| 2010 DAFF/FRDC Aquatic Animal Health Training Scheme - Aquatic Animal Health Technical Forum and Skills training Workshop<br>Development Award Deed Project No: 2009/315.02 |

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**OBJECTIVES:**

The funds provided through the award were used to subsidise participant attendance at the 2011 Aquatic Animal Health Technical Forum - Skills Training Workshop (which was developed as part of FRDC project 2008/357).

The workshop, organised by Ms Lynette Williams in co-operation with staff at DPIPWE, Launceston, Tasmania, was held in March 2011 and enabled technical and scientific staff to;

1. Provide additional skills in aquatic animal health to workshop participants.
   - Participants gained familiarity and experience with a variety of diagnostic techniques used for the detection and identification of aquatic animal pathogens

2. Further develop the technical network already established.
   - The professional network established in 2010 was extended to include diagnostic research staff working in the area of aquatic animal health

3. To provide a mechanism for dissemination of information to aquatic animal health technologists
   - The workshop agenda was prepared in consultation with potential participants and depended on the specific participants' interests as well as on what the venue was capable of providing in terms of practical sessions and audio-visual equipment.

4. To provide support to aquatic animal health staff for training
   - The workshop included presentations by DPIPWE staff and participants, practical sessions and a field trip to give participants the opportunity to be involved in training.

**OUTCOMES ACHIEVED TO DATE**

The 2011 workshop was attended by 25 participants from various organisations throughout Australia. It was held over three days with presentations on a variety of techniques and disciplines including practical demonstrations from DPIPWE Launceston staff and workshop participants. A field trip was incorporated in the workshop including visits to aquaculture facilities for salmon and abalone.

The inaugural Aquatic Animal Health Technical Workshop was held in March 2010 at CSIRO Livestock Industries, Geelong with eighteen participants. At the completion of the 2010 workshop it was evident that the participants were keen to continue the forum and support participation at an annual workshop. The Department of Primary Industry, Parks, Water and Environment, Fish Heath Unit indicated that they would host the 2011 workshop in Launceston. On successfully gaining funding for the second workshop, planning commenced in July 2010 between Lynette Williams at CSIRO and DPIPWE staff. Due to the good rapport that had developed between participants and the continued communication the second workshop participant list filled quickly to 25. Subsequently an agenda, based on participant interest was prepared. While the forum has only been operating for two years, promotion of the forum has seen it increase in participation numbers.

At the second workshop in Launceston, a number of presentations were made by participants who had attended the 2010 workshop. These participants had experienced the open and frank discussion of issues in an informal, non-competitive environment and had gained the confidence and personal development to present their work to other aquatic laboratory staff.

The enhanced skills and expertise gained by 25 participants in the 2011 workshop is likely to form an important part of laboratory staff and fish health technicians' training and competency development, both of which are important aspects of National Association of Testing Authorities (NATA) accreditation for veterinary testing laboratories.

In summary, in its short life to date the forum has been able to enhance aquatic animal health outputs. Since the first workshop the forum has gained interest and support from industry and organisations working on aquatic animal health. The forum will continue to strengthen the national network of aquatic animal health experts and research providers and provide a training opportunity for young scientists interested in aquatic animal health.

**KEYWORDS:** Aquatic animal health; diagnostics; skills; technology transfer; training

## Acknowledgments

The authors acknowledge:

- The forum members for their active participation and enthusiasm, their home organisations for supporting their attendance at the skills training workshop.
- FRDC Aquatic Animal Health Subprogram for its support, encouragement and support of the development activities carried out during the training scheme.
- The Department of Agriculture, Fisheries and Forestry (DAFF) for their support of the training scheme with FRDC.
- CSIRO Livestock Industries for supporting the involvement of Fish Diseases Laboratory staff.
- Department of Primary Industry, Parks, Water and Environment, Launceston for supporting the involvement of staff and providing facilities for the workshop.

## 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. The discussion was concerned with the apparent lack of availability of technical skills training in laboratories for young/inexperienced scientists and technical staff. It was acknowledged that there is a small number of experienced aquatic animal health specialists with well-developed skills and knowledge and there is a need to transfer these skills and knowledge to the new generation of aquatic animal health technologists as part of a succession plan. It was concluded that the establishment of such a forum would facilitate not only this technology transfer but also development of a support network for the next generation of aquatic animal health laboratory specialists.

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 minutes of this meeting reflected that the proposal was well-supported by AAHS members and that it aligned well with the NAAH-TWG laboratory network concept and other FRDC projects that recommended network development and training in aquatic animal health (Landos et al., 2006; Landos et al., 2007). On successful submission of a full application to the FRDC People Development Program funding was obtained to subsidise attendance of technical staff at the Fourth FRDC National Aquatic Animal Health Scientific Conference held in Cairns in 2009. An inaugural meeting of the Aquatic Animal Health Technical Forum (AAHTF) was held followed by a forum traning workshop in March 2010 which was also subsidied by the FRDC People Development Program. The inaugural workshop was held at CSIRO, Australian Animal Health laboratory, Geelong.

The workshop was conducted over two and a half days and attended by 18 participants. Feedback from participants and their home organizations indicated that the workshop exceeded expectations and that it should be an annual event, hosted by various venues and 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 the second workshop in March 2011. The funding obtained would subsidise participant costs, travel and accommodation and provide some reimbursement to the host laboratory for reagents and other workshop expenses.

## Need

There are technologists at various locations around Australia who have a diverse range of skills and experience in aquatic animal health. These skills constitute a valuable national resource that need to be "captured" as part of a succession plan for the aquatic animal health sector. The aquatic animal health service providers include a small number of specialists that do not get the opportunity to convene at meetings/workshops/conferences as often as those involved in terrestrial animal health. This is a deficiency that has inhibited the development of functional networks for the exchange of information which would enhance the skills-base of the health service providers to the aquatic animal sector.

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 technical forum, including the second workshop, will provide a vehicle for forum participants to discuss applications of various technologies to aquatic issues, to participate in their demonstration, and will assist in the development of these scientists and their network.

Although not all "aquatic" techniques and diagnostic procedures are unique there are some aspects that require specific adaptation for use with aquatic animals and specimens. In addition, some of the less experienced scientists/technologists have indicated that they feel they are on their own and are either too intimidated in some instances to request assistance or don't know where to go or whom to ask for input or assistance. Other aquatic animal health workers, who to some extent undertake limited laboratory work, would benefit from implementing some basic skills in their workplace which would potentially increase their productivity.

It is envisaged that the forum could even fulfill a mentoring role where young scientists get the opportunity to interact with experienced aquatic animal health specialists, establish networks and exchange ideas and information in an informal but structured forum. Providing such a forum for aquatic animal health technical staff would enhance the capabilities of the Australian network of aquatic animal health laboratories to provide high quality services to their stakeholders – governments and industry.

Thus the forum would be open to all aquatic animal health specialists, with a variety of skills and levels of experience and who are resident at government laboratories, universities and colleges. It is anticipated that the group would develop into a valuable national resource – a repository of technical knowledge, additional sources of information and mentors to the new generation of laboratory technicians, students and staff at diagnostic laboratories and teaching institutions.

## Objectives

The funds provided through the award were used to subsidise participant attendance at the 2011 Aquatic Animal Health Technical Forum - Skills Training Workshop (which was developed as part of FRDC project 2008/357).

The workshop, organised by Ms Lynette Williams in co-operation with staff at DPIPWE, Launceston, Tasmania, was held in March 2011 and enabled technical and scientific staff to;

1. Provide additional skills in aquatic animal health to workshop participants.
   - Participants gained familiarity and experience with a variety of diagnostic techniques used for the detection and identification of aquatic animal pathogens

2. Further develop the technical network already established.
   - The professional network established in 2010 was extended to include diagnostic research staff working in the area of aquatic animal health

3. To provide a mechanism for dissemination of information to aquatic animal health technologists
   - The workshop agenda was prepared in consultation with potential participants and depended on the specific participants' interests as well as on what the venue was capable of providing in terms of practical sessions and audio-visual equipment.

4. To provide support to aquatic animal health staff for training
   - Funding from FRDC was instrumental in allowing technical staff (who do not normally get the opportunity to attend meetings and workshops) to participate in workshop aimed specifically at aquatic animal health.

## Methods

**Objective 1**
*Provide additional skills in aquatic animal health to workshop participants.*

Presentations were made by a number of staff from DPIPWE Launceston in the disciplines of sample preparation, histopathology, bacteriology and virology. Some of the techniques presented were new and improved while other, more established techniques were provided to give participants an understanding of why it is important to follow published methods. DPIPWE is in a situation where it has the opportunity to collect field samples and to follow the samples, on most occasions, through a range of diagnostic tests to a final diagnosis and therefore has a number of staff involved in the various disciplines.

A number of participants from other institutes presented aspects of their work and outcomes. These presentations created comment and discussion during question times and throughout the workshop.

**Objective 2**
*Further develop the technical network already established.*

The workshop enabled participants from diagnostic laboratories, teaching institutions and other organizations working in the aquatic field to establish networks and improve their awareness of other activities being undertaken in the aquatic field. The further development of these established networks has resulted in some of the methods presented being implemented in other institutes.

**Objective 3**
*To provide a mechanism for dissemination of information to aquatic animal health technologists.*

The workshop, organised by Ms Lynette Williams in collaboration with staff at DPIPWE, Launceston; the workshop agenda prepared in consultation with potential participants.

The workshop was organised by Lynette Williams in collaboration with three DPIPWE, Launceston staff - Belinda Jones, Melissa Higgins and Martine Cornish. Discussion between other staff at the Fish Health Unit DPIPWE, provided valuable input into the structure of the workshop.

Initial discussion was based around the timing of the workshop (what was the best time for DPIPWE to accommodate the workshop) the number of participants that could be accommodated in the laboratory. After these details were decided and a draft workshop agenda planned, the workshop was advertised via various email distribution lists requesting expressions of interest to attend. Participant numbers were reached within two weeks of advertising.

Initially, the workshop agenda was prepared as a draft, after discussion by the committee, based on what DPIPWE were able to offer in terms of practical sessions, laboratory space and Fish Health Unit staff to make presentations. The **draft** agenda was widely circulated with the workshop notification. The draft agenda had outlines which included the first session with the necessary introductions and the host laboratory requirements, the laboratory practical sessions and the proposed afternoon field trip. Once the participant list was completed, participants were approached to make presentations on their work area, which the majority of the participants undertook.

On submission of presentation titles they were added to the agenda, making a good mix of overviews, topics, problems, disease issues and diagnosis. The agenda was finalized and circulated to participants in February.

**Objective 4**
*To provide support to aquatic animal health staff for training.*

Funding was obtained from FRDC via the FRDC/DAFF AAH Scholarship Program and provided a subsidy towards:

- travel expenses for 25 participants at the Launceston workshop
- workshop expenses for the host organization
- Field trip

## Results/Discussion

*Workshop Planning*

At the feed-back session at the completion of the 2010 workshop, participants from DPIPWE, Fish Health Unit, approached the forum coordinator, Lynette Williams and indicated that their laboratory would be interested in hosting the 2011 workshop. These people spoke to their supervisor and it was agreed that DPIPWE, Fish Health Unit in Launceston would be the venue for the next workshop. The venue and the laboratories could accommodate a maximum of 20 participants (also, an additional 5-8 people for specific presentations/demonstrations) for the audio-visual and laboratory practical sessions. Essentially all planning was carried out via email communication with three telephone "hook ups" where the 4 organising members were present (Coordinator at CSIRO, AAHL and 3 located at DPIPWE, see Appendix 2).

Initial points for consideration by the committee were;

- Location of workshop - including accommodation and transport to and from the accommodation and laboratory
- Number of participants that could be accommodated
- Workshop agenda - including invited speaker? and participant presentations
- Field trip or presentation from Industry representative for an overall view of the aquatic industry.
- To keep the costs involved reasonable and therefore the offering funds for reimbursement of participants travel and accommodation
- Workshop for three full days (Wednesday to Friday)
- Workshop to be held late March early April, depending when the laboratory could accommodate the group.

Essentially the planning of the workshop was via email and followed the time line in Table 1.

**Table 1. Planning time line**

| Approximate Date | Item |
|---|---|
| April 2010 | Discussion with DPIPWE Fish health Unit staff and laboratory supervisors to host the 2011 workshop. |
| May 2010 | Confirmation that the workshops would be hosted by DPIPWE, Launceston. |
| June 2010 | Telephone hook up to discuss what is required- based on previous workshop organisation and delegate tasks to the 4 people involved. |
| July- early August | DPIPWE staff discussing what can be offered in presentations and field trip to participants |
| Early August 2010 | Draft documents circulated to "committee" for comments. The documents were for General Information, Workshop Outline and Draft Agenda |
| August 2010 | Accommodation sourced and a fixed room price negotiated |
| Late August | Telephone hook up to discuss progress. Draft registration form circulated |
| Mid September | General Information, Workshop Outline and Draft Agenda- were distributed via email to the past participants (Lynette Williams) and "Health Highlights" (the FRDC AAH subprogram coordinator). information included the closing date of 10th December for registrations |
| Late September | Belinda Jones (DPIPWE) commenced receiving expression of interest. |
| 10th October 2010 | 10 expressions of interest had been received |
| Early November | Emailed registration forms to people that had expressed an interest in attending and also via Health Highlights. Registrees were encouraged to present work and this information was used to prepare the Draft workshop agenda. |
| 10th November | 20 participants had registered for the workshop. |

| | |
|---|---|
| February 2011 | Reminder emailed to registered participants re booking accommodation at "special conference rate" |
| February 2011 | Catering organised |
| Mid February 2011 | Draft workshop agenda prepared (based on participant presentations) and circulated to co-ordinators for comments |
| 10th February 2011 | Workshop Agenda distributed to participants |
| Mid March | Fish for practical sessions collected and transferred to Mt Pleasant laboratory fish holding facility |
| Mid March 2011 | Farms involved in workshops tour reminded of date and time |
| 15th March 2011 | Participant reminder emailed with details of what items they are required to bring to workshop. |

Email and the occasional phone "hook up" communication was successful for the workshop planning and was time efficient. With input from Lynette Williams who had organised the inaugural workshop, the committee was able to allocate tasks to each person and then communicate via email or phone "hooks ups" the outcomes.

Staff at DPIPWE essentially organised the workplace, this included any "housekeeping" that was required by the laboratory. DPIPWE staff also negotiated all accommodation details, catering and organised the field trip. The participants were responsible for booking accommodation, flights and transport daily to the laboratory.

General information documents (Appendix 3) were circulated in mid September with potential participants registering to attend.

*Workshop Schedule*

The initial workshop agenda was prepared and populated with sessions based on practical activities and presentations by DPIPWE staff. The agenda was circulated to potential participants and those prepared to make presentations were added, forming the final workshop agenda (see Table 2). Presentations were of approximately ten to fifteen minutes duration commencing with a welcome and induction into the DPIPWE laboratory.

The practical sessions provided participants the "hands on" opportunity to dissect a number of aquatic species. This was followed up with demonstrations in bacteriological culture and interpretation of results, histopathology – selecting appropriate sections and relevant processing techniques. The molecular laboratory and procedures were also demonstrated.

There was also the opportunity for small groups to examine with the pathologist, various histology sections.

Intentionally the agenda was not prepared under various disciplines ie bacteriology and virology for instance, but was a mixture of presentations and practical sessions daily. This approach provided variation and facilitated discussion and interaction within the group. In the event that participants were not familiar with a specific technique, the short duration of the presentations and the variety of topics ensured that people were not disinterested.

**Table 2. Final workshop Agenda**

| **Wednesday 30th March 2011** | | |
|---|---|---|
| **Time** | **Agenda Item** | **Presentor/s** |
| **9.00 am** | Welcome and introductions | |
| **9.30am** | Program outline | Nette Williams (AFDL) |
| **9.45am** | Induction | Toni Wagner (DPIPWE) |
| **10.00am** | Animal Health Labs - who we are and what we do | Stephen Pyecroft (DPIPWE) |
| **10.30am** | **Morning tea** | |
| **11.00am** | AAHL and its role | Nette Williams (AFDL) |
| **11.30am** | Comparison of Spin Column and Particle Processor Nucleic Acid Extraction, discussion of quality, quantity | Teresa Wilson (DPIPWE) |
| **12.00 noon** | Vaccine R & D | Richard Morrison/Martine Cornish |
| **12.20pm** | *Edwardsiella ictaluri* in catfish | Kitman Dyrting/ Nikki Elliott ( Berrimah Vet Labs NT) |
| **12.45pm** | General aquatic work at DEEDI | Virna Duffy (DEEDI) |
| **1.00pm** | **Lunch** | |
| **1.45pm** | Sample collection: how to collect a good sample including fixation, media selection, techniques etc | Stephen Pyecroft and Jeremy Carson (DPIPWE) |
| **2.15pm** | Fish dissection and sample collection including euthanasia, collecting bloods, wet preps, Micro, virology, histology, molecular. | |
| **3.45am** | **Afternoon tea** | |
| **4.10pm** | Thermal stress and its nutritional management in fish | Brett Glencross (CSIRO) |
| | Disease issues for tropical marine finfish | Robin DeVries/Paul Taverner (DEEDI) |

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|---|---|---|
| **4.45pm** | Round up and close | |
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| | | |
| **Thursday 31st March 2011** | | |
| **9.00am** | EAD Response - Abalone Viral Ganglioneuritis | Stephen Pyecroft (DPIPWE) |
| **9.35am** | Testing oysters response to stressors | Graeme Knowles (DPIPWE) |
| **9.50am** | WA Fish Kill Response Program | Tiffany Schenk (WA Fisheries) |
| | Shellfish hatchery health management | Michel Bermudes (Shellfish Culture) |
| | *Caligus epidemicus* infestation in Black Bream | Mark Hawes (DPI VIC) |
| **10.10am** | **Morning Tea** | |
| **10.30am** | Depart for Tamar Valley Aquaculture Facilities Tour | |
| **11.30am** | Seahorse World, Beauty Point | |
| **12.15pm** | **Lunch** | |
| **1.30pm** | Abtas Marketing, Clarence Point | |
| **3.15pm** | Van Diemen Aquaculture, Rowella | |
| **5.00pm** | Return to Mt Pleasant | |
| **7.00pm** | Forum dinner | |
| | | |
| **Friday 1st April 2011** | | |
| **9.00am** | Molecular Biology | Marianne Douglas (DPIPWE) |
| **9.20am** | Histological Handy Hints | Dane Hayes, Cath Marshall, Belinda Jones (DPIPWE) |
| **9.40am** | Microbiology | Jeremy Carson/Mel Higgins (DPIPWE) |
| **9.50am** | Development of an in situ hybridisation assay for the detection and identification of the abalone herpes-like virus | Ilhan Mohammad (DPI) |
| | In situ hybridization method used to detect the presence of *Neoparamoeba perurans* (causative agent of AGD) in gills | Karine Cadoret (UTAS |
| | Validation of a real time PCR for Whitespot syndrome | Joanne Slater (AAHL) |
| **10.10am** | Morning Tea | |
| **11.00am** | Prac groups: follow through on samples collected on Wed | |

| | | |
|---|---|---|
| | Split into 4 groups and rotate through histology, molecular biology, microbiology, path (slide review) ( approx 25 min each section | |
| **1.00pm** | Lunch | |
| **2.00pm** | Questions | |
| **2.15pm** | Wrap up session including comments, feedback, additional information. Where to from here? | Nette Williams |
| **3.00pm** | Farewell | |

*The Workshop*

The workshop was attended by 25 participants and 11 expert presenters (Appendix 2). At the commencement of the workshop presentations were made by a number of staff from DPIPWE in the disciplines of sample preparation, histopathology/pathology and bacteriology. During the afternoon of the first day, the group and demonstrators were located in the autopsy room to undertake dissections.

*Sample preparation*: "Hands-on" demonstration of dissection of Atlantic salmon and oysters was performed by the Fish Health Unit veterinarian pathologist. Internal organs were dissected and appropriate samples taken for histopathology, bacteriology and virology. Participants hd the opportunity to dissect either a fish, oyster or both and took samples for bacteriology and histopathology which were examined later in the workshop.

On the morning of day three participants and leaders were divided into four groups which then rotated around different areas of the laboratory (Bacteriology, Molecular Suite, Histology and examining histology sections).

*Histopathology*: The histopathology technicians demonstrated and explained some of the complex issues associated with aquatic specimens, preparing appropriate samples for processing from fixation of samples through to stained sections for examination by the pathologist. Some of these methods are quite unique to aquatic animals due to the nature of the samples, for example, small and delicate tissue which may go through the holes of the histology cassette, invertebrate shell which requires additional processing. In addition to the routine stains used (haematoxylin and eosin) the histology laboratory has a range of "special" stains which can be utilised to enhance certain features of histological sections to help with disease diagnosis. In addition, participants were shown a number of histological sections involving a range of diseases, with microscopic examination by the pathologist.

*Molecular suite*: Within the molecular suite, staff showed the group nucleic acid extractions using the KingFisher MME96 robot, and participants were shown the designated work areas and the work-flow through the appropriate areas. Polymerase chain reaction (PCR) is an extremely sensitive test and work-flow control is an important aspect of molecular diagnostics with respect to prevention of cross-contamination (risk of false positive results). Thus, due to

the nature of the work and the laboratory area there was not the opportunity for participants to perform any PCR testing.

*Bacteriology*: Bacteriological samples from dissections on the first day and cultured on appropriate media were subjected to further identification tests, prepared by DPIPWE staff, to demonstrate what other confirmatory tests can be undertaken to aid in diagnosis. There were a number of tests demonstrated, in addition to the initial agar plate cultures, that that could be used in identification of aquatic bacteria. Staff mentioned how important it is to culture samples on the appropriate agar depending on whether the aquatic animal originated from fresh or salt water. Temperature of incubation is also important and dependent on the temperature of the water from where the aquatic animal was sampled.

**Field trip to Tamar Valley Aquaculture Facilities**

On the second day participants went on a tour to three of the Tamar Valley aquaculture facilities. The first facility visited was Seahorse World at Beauty Point. This is a commercial company which is run by a group of very enthusiastic staff and is open to the public. Seahorse World provides a whole range of interactive educational events and offered the group the opportunity to see and find out about seahorses and other endangered marine species. At Seahorse World one of the endangered species which is part of the preservation, breeding and rearing program is the Pot Bellied Seahorse, *Hippocampus abdominalis*. A number of other *Hippocampus* species are also produced, the majority being for the export market. The facility also houses tanks of other aquarium ornamentals and local fish species, as well as interactive rockpools containing local marine life.

The second facility was an abalone farm, Abtas Marketing at Clarence Point. This facility is the largest producer of farmed abalone in Tasmania. The group was shown around the facility, including the spawning area (although it was not spawning season at the time of the visit), the spat ponds and finally the pump house and the large outdoor grow-out ponds. Aspects discussed included feeds, abalone life cycle, disease and environmental issues that affect abalone production (e.g. Abalone Viral Ganglioneuritis (AVG), salinity levels fluctuations due to rainfall, temperature etc.)

Van Diemen Aquaculture at Rowella was the last facility on the tour. This farm grows out Atlantic salmon (*Salmo salar*) for commercial production. The tour encompassed demonstrations of the automated feed plant where discussions centered on the differences between commercial feeds, nutrition, feed rates per day etc. The group also toured the floating fish farm area and observed manual and automated feeding of various age classes of fish and learnt about the salmon production cycle, disease and environmental issues of relevance to the salmon industry in Tasmania (e.g. salinity fluctuations, seal predation, jellyfish strikes etc.)

During the workshop there were a number of presentations about specific disease cases and associated diagnostic techniques in various disciplines, that participants had been working on. As the presentations were varied and not all associated with one specific disease or specific methods, the agenda reflected this during each session with a variety of topics and lengths of presentations. This was intentional as the Organising Committee preferred participants to feel comfortable to present their work and not be restricted to a certain time-frame. It was continually acknowledged and reinforced that although not all "aquatic" techniques are unique there are some aspects that are specific to aquatic technical skills and procedures. Some of the techniques presented were new and improved while others were established techniques to provide participants with an understanding why it is important to follow well-established and published methods. The enhanced skills and expertise gained by participants is likely to form an important part of laboratory training and competency development which are important aspects of the National Association of Testing Authorities (NATA) accreditation for veterinary testing laboratories.

The co-ordinator Lynette Williams, thanked DPIPWE staff for offering to host the event at the commencement of the workshop and also provided a program outline. At the end of each day's session DPIPWE staff ensured participants were aware of the dinner venue and transport, if required. On the last day, the wrap-up and discussion session was chaired by Lynette Williams.

The workshop participants have been added to the existing list of aquatic animal health technologists (Table 3, prepared after the 2010 workshop) that are forum members. There have also been requests via email, to be added to the distribution list of the AAHTF activities by people that could not attend the 2011 workshop, but were interested in further information and the potential for ongoing workshops and communications.

**Table 3. Email discussion group**

| Member | Organisation | Email address |
|---|---|---|
| Ellen Ariel | James Cook University | ellen.ariel@jcu.edu.au |
| Bradley, Tracey | DPI, Victoria | tracey.bradley@dpi.vic.gov.au |
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| Cadoret, Karine | University of Tasmania | kcadoret@amc.edu.au |
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| Stephens, Fran | WA Fisheries Department | fstephens@agric.wa.gov.au |
| Taverner, Paul | DEEDI, Cairns | paul.taverner@deedi.qld.gov.au |
| Taylor, Richard | CSIRO, Hobart | richard.taylor@csiro.au |
| Tweedie, Alison | University of Sydney | a.tweedie@sydney.edu.au |
| Vincent, Benita | CSIRO Marine and Atmospheric Research | benita.vincent@csiro.au |
| Williams, Nette | CSIRO, AFDL | lynette.williams@csiro.au |

*Wrap-up Session*

At the wrap-up session there was enthusiastic discussion within the group. Participants made some excellent suggestions that would be beneficial for future workshop planning.

Participants completed "workshop feedback forms" Appendix 5, at the completion of day three. The aim of the feedback form was to gather participant comments and assessment of the workshop (Table 5).

**Table 5. Summary of Workshop Discussion**

| ITEM | Excellent | Good | OK | Other |
|---|---|---|---|---|
| **Location and venue:** (Luanceston) | 23/25 | 2/25 | | |
| Other suggestions | Other fish lab with experience WA or Oonoonba<br>Rotate venues | | | |
| **Accommodation:** | 9/25 | 7/25 | | 9-not applicable |
| Other suggestions | Bus to and from accommodation to laboratory daily<br>Food available at accommodation | | | |
| **Date and duration:** | 19/25 | 5/25 | | 1-no comment |
| Other suggestions | 1 x No less than 3 days<br>1 x Longer than 3 days<br>1 x Good not in school holidays or clashing with other meetings | | | |
| **Format:**<br>• Presentations<br>• interaction | 21/25 | 4/25 | | |
| Other suggestions | 1x practical session great, complement to presentations<br>1 x more time in labs<br>1 x organise talks in order basic before more detailed for each discipline<br>Format based on lab techs and pathogens. Perhaps look at wider aspects of disease-environment, nutrition etc. Good to have industry presentations of issues that affect their stock/product | | | |
| **Program topics** | 17/25 | 4/25 | | 4 - no comment |

| | | | | |
|---|---|---|---|---|
| Other suggestions | 1 x parasites section<br>More on molluscs " hands on"<br>Field trip EXCELLENT<br>Case study? More hands on field sampling techniques<br>1 x too clinical more hands on fish based work | | | |
| **Length (2 and a half days- 3 days):** | 15/25 | 9/25 | | 1- no comment |
| Other suggestions | 1x longer workshop<br>1 x no less time for workshop | | | |
| **Food:**<br>• Morning breaks<br>• Lunches<br>• Afternoon breaks | 20/25 | 5/25 | | |
| | | | | |
| Comments | Plenty of excellent food<br>Lovely job<br>Good healthy variety "fantastic"<br>Fruit and vegetarian platter | | | |
| Would a "stand alone" workshop be better than one included in;<br>-FRDC conference<br>-AAVDL | **Agree- stand alone**<br>24/25 | **Disagree** | 1 x with AAVLD (no other comment with that ie due to travel/time constraints ? costs) | |
| Other comments | -learnt a lot<br>-great networking<br>-good overview/picture of what is happening in aquaculture<br>-great idea and well organised<br>-great platform for technical people<br>-variety of topics and activities- fantastic<br>-practical session were well received<br>-keep forum technical based<br>-important to keep the "scope" as a technical forum<br>-"stand alone" is what makes it so good for people to present/discuss their work<br>-thank you - excellent workshop with good networking capabilities<br>-aimed at the right sector of technical level | | | |

| | |
|---|---|
| | - enjoyed meeting other people and putting "faces to names"<br>-practical session were good and generated a lot of interest and enthusiasm<br>-fantastic job!!<br>-excellent organisational committee<br>- too much "stuff" going on in conference type situation- this is more appropriate<br>-networking is excellent and new found techniques to improve testing have been helpful<br>-great field trips and practical sessions. Will attend the next one and encourage colleagues to attend also<br>- farm visits and practical sessions made forum interesting |

In summary, the workshop participants provided very positive feedback, were very enthusiastic and there was a lot of discussion and interaction between participants which commenced in the first break of the workshop. The duration of the workshop- including travel time to Launceston and time of the year appeared to be suitable. The field trip was excellent and provided an insight into the operation of three very different aquaculture facilities. The majority of the participants had not had the opportunity to see these types of aquaculture operations and it was most beneficial for them to experience. To see first-hand the farms and what is involved in aquaculture and why it is so important to establish links between the farmers and the laboratory was clearly demonstrated at each location.

There was some minor modifications to the format suggested, for instance having the more basic presentations on techniques before the more detailed application to disease diagnosis. Participants are aware that some aspects of the format are dependent on the location of the annual workshop (Table 6).

**Table 6. Additional participant comments**

| Discussion point | Comments received |
|---|---|
| How did the workshop go? | Was well received and the three days were very interesting and informative with people appearing to be comfortable making presentations to the group |
| Presentations | The varying length or presentations worked well- structure was in place to form the agenda. Perhaps needed slightly longer with the practical sessions |
| Format | Suited the group. Start and end times were appropriate |
| Is it worth continuing on? | Overwhelming support from the group to continue on an annual basis |
| Stand alone or back-to-back with another AAH event | Stand alone workshop was the opinion from participants |
| Future funding? | Where to get future funding to continue was discussed |
| Location/venue of future workshops | Potentially South Australia, Townsville and CSIRO marine science. Also consider every 3 years or so to go to CSIRO AAHL, giving participants the opportunity to see that facility. |
| Timing | March-April was appropriate as there are not other conferences at the same time |
| Where to from here? | Get the word out to colleagues to participate and join the email list also. |

## Benefits

Since the first Aquatic Animal Health Technical Forum (AAHTF) in 2010 it has already been demonstrated that there has been the transfer of skills and knowledge to the next generation of aquatic animal health laboratory specialists. It has become evident on the completion of the second forum/workshop that technical staff at diagnostic laboratories, who were inaugural participants have developed the confidence and skills to present their work to others. The continued communication between members of this group, in some instances, has seen an improvement in some laboratory techniques and skills. Throughout the workshop it was evident that many of the emerging aquatic animal diseases are novel, and continue to be caused by previously unknown infectious agents e.g. abalone viral ganglioneuritis, oyster oedema disease, pilchard herpesvirus and some bacterial diseases of marine and freshwater fish. This workshop also had some participants from industry that presented an overview of their work and in return they were able to see what was involved at the laboratory level for disease diagnosis. A number of participants indicated that they were not aware that there was "this many people involved in aquatic animal health". Also, the opportunity for everybody to put faces to names and communicate openly in a non-threatening environment is quite unique.

The variety of presentations continues to confirm that the area of aquatic animal health does in fact have some unique aspects to disease diagnosis. Unlike terrestrial production systems where the significant diseases of production animals are well-established, well-known and documented with well-described tests, with the expansion of aquaculture in Australia, aquatic diagnosticians are presented with novel material and often struggle to understand what they are testing for and why the results are so often equivocal.

Membership to the forum is increasing, via workshop participation and by word of mouth. This year there was a number of people interested that, unfortunately, could not attend due to various reasons. Membership and participation is more than likely to contribute to staff development and training aspects of NATA accreditation. The reimbursement of some of the participant costs from the funding was welcomed by the participants but was not the reason that they attended. The exchange of technical skills and methodology will enable diagnosticians to respond more effectively to disease outbreaks. Consequently, the negative impact of disease outbreaks on industry productivity and profitability will in all likelihood be reduced. In addition, the younger generation of less experienced technologists will benefit from interaction with their more experienced colleagues.

This project will continue to contribute to the establishment and development of an aquatic animal health technical network. The network will facilitate interaction between State and Commonwealth diagnostic laboratories and University departments involved in aquatic animal health and will build on the Network of Aquatic Animal Diagnostic Laboratories that had been recommended previously (see FRDC Project No. 2005/621).

Thus the skills and knowledge (e.g. diagnostic capabilities) of the forum participants will be enhanced not only to the benefit of themselves but also of their host institutes, and the local industries they service.

## Further Development

The email discussion group requires further development and input from the participants. At this stage there are in excess of 40 contacts on the list. Development of the electronic discussion group could be achieved by perhaps appointing an administrator who prompts participants to contribute and thus keeping communication active. This may also encourage others to be involved - when they see the relevant content of the discussion group.

The AAHTF and its effectiveness would benefit from further promotion and advertising. Currently, there are approximately 30 forum members and the group could potentially increase to greater than 50 participants. The increase in participants is evident by the number that attended the 2011 workshop and the interest that was shown by others who unfortunately could not attend. The group would consist of aquatic animal health specialists with varying degrees of experience and areas of expertise. There is also interest from other areas of aquaculture that have staff doing some degree of laboratory work and who have been able to implement strategies they have learnt at the workshop.

The forum workshops that have been conducted have indicated that the workshop concept should become an essential and regular activity, if funding is available, and be conducted on an annual basis.

The workshop concept could be further enhanced by:

Rotating the venue – to allow others (all local technologists) access to the workshop. This was well received and also reinforced that the location did not have to be a laboratory entirely focused on aquatic animal health. The participants would bring the expertise with them.

- the workshop duration to extend to 3 full days (travel to and from outside the 3 days)
- Incorporating practical and theoretical sessions - depending on the venue and also a field trip if possible as it was so informative at this workshop.
- Refine the agenda and potentially include more disciplines and group presentations under areas of interest and relevant presentations.
- Keeping the cost down to participants (e.g. host institutes to provide in-kind support such as meeting room and laboratory space)
- Continuation of funding or subsidising travel and accommodation costs
- Having an invited speaker
- Publish the presentations as a technical manual.

## Planned outcomes

The objectives of the project were met in that the second Aquatic Animal Health Training Scheme - Aquatic Animal Health Technical Forum and Skills training Workshop was conducted in late March 2011. The workshop further developed the forum by an increase in participant numbers and further building rapport and trust among the forum participants such that there is a collegiate atmosphere within the current technical network. Forum participants are enthusiastic and actively participated in discussions on how the AAHTF can be further developed. Some recommendations to the workshop have been made in this report to further expand the workshop and the target participants. Thus the planned outcomes have been achieved and it is anticipated that the forum will continue to grow as its existence continues to become more widely known. The development of this network should provide tangible benefits to the participants, their organisations and the aquatic animal sectors they service.

## Conclusion

The main objective of this project was to conduct the second Aquatic Animal Health Technical Forum (AAHTF) workshop at DPIPWE, Launceston and increase the participation numbers. The nature and structure of the workshop would encourage interaction and information transfer of a technical nature between forum participants. It would encourage participants to present aspects of their work and that was of a particular interest or technique. The agenda was intentionally not structured under specific disciplines to accommodate the wide variety of presentations. The participants were from a number of institutes and varied in aquatic animal health experience. This ensured that the younger generation of aquatic animal health scientists benefitted from the 20+ years experience and expertise of some of the more mature aquatic animal health scientists who are on the brink of retirement.

The organisation of the workshop by the committee was essentially done using email and this proved to be a very successful method. For future workshops, this means that the host laboratory is not responsible for undertaking all the organization and that it can be carried out remotely by the Organising Committee.

Participants provided candid feed-back and discussion during the wrap-up session. The overall message was that they appreciated the relaxed and non-competitive nature of the workshop and the wide range of presentations. They informed the organisers that they would recommend participation to other aquatic animal technologists. The less experienced technologists found the forum friendly and would be keen to make a presentation in such a forum rather than at a “more formal” scientific conference. On a number of occasions it was mentioned that the original scope of the AAHTF needed to be kept in sight and that the workshops is for technicians working in the aquatic animal health field and that it is an opportunity for them to make presentations of their work.

Apart from providing a forum for information exchange, participation in the AAHTF workshop has further developed a larger technologists’ network, building rapport and trust between laboratories and individuals, and providing experience in making presentations.

Thus in reviewing the effectiveness of the forum (e.g. level of participation and participant feedback on benefits for professional development) it can be concluded that the participants had a positive experience and found the workshop beneficial to their professional and personal development. It is anticipated that, providing adequate support is obtained to continue the AAHTF, membership to the forum will expand thus increasing its effectiveness. Following on from the 2011 DPIPWE, Launceston workshop, participants were enthusiastic about forth-coming workshops that could be convened at other venues around Australia.

## References

Landos M, Dhand N. and Whittington R. 2006. Aquatic Animal Health Subprogram: Establishment of a national aquatic animal health diagnostic network. Final Report FRDC Project No. 2005/621.

Landos M, Dhand N, Jones B. and Whittington R. 2007. Aquatic Animal Health Subprogram: Current and future needs for aquatic animal health training and for systems for merit-based accreditation and competency assessments. Final Report FRDC Project No. 2005/641.

Williams LM. and Crane MStJ. 2010. Tactical Research Fund: Establishment of the Aquatic Animal Health Technical. Final Report FRDC Project No. 2008/357.

## Appendix 1: Intellectual Property

While no intellectual property arising from this project has been identified, the professional development of AAHTF participants has been beneficial to the participating individuals, their organisations and to industry stakeholders.

## Appendix 2: Project Staff

| Name | Organisation |
|---|---|
| Lynette Williams | AAHL Fish Diseases Laboratory, CSIRO Livestock Industries |
| Belinda Jones | DPIPWE, Launceston, Tasmania |
| Martine Cornish | DPIPWE, Launceston, Tasmania |
| Melissa Higgins | DPIPWE, Launceston, Tasmania |
| Stephen Pyecroft | DPIPWE, Launceston, Tasmania |
| Jeremy Carson | DPIPWE, Launceston, Tasmania |
| Richard Morrison | DPIPWE, Launceston, Tasmania |
| Mark Crane | AAHL Fish Diseases Laboratory, CSIRO Livestock Industries |
| Nick Moody | AAHL Fish Diseases Laboratory, CSIRO Livestock Industries |

## Appendix 3: General Information

General Information – Aquatic Animal Health Technicians Forum
30 March – 1 April 2011

PROGRAM
The forum for 2011 is being hosted by the Fish Health Unit, DPIPWE Tasmania in Launceston and will run over 3 full days from Wednesday 30 March – Friday 1 April 2011. Days will run roughly from 9am to 4.30pm.
The program for the 3 day forum will be a mixture of theory (presentations), some practical laboratory sessions as well as a visit to some commercial aquaculture facilities located within the Tamar Valley.
One of the aims of the forum is to encourage informal discussions and transfer of knowledge. Therefore, participants are encouraged to prepare a presentation, to be presented in a welcoming environment where "no question is a stupid question". Presentations of 5-15 minutes 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.

TRANSPORT
Flights in and out of Launceston are available on Jetstar, Virgin Blue and Qantas Link.
The "Airporter Shuttle Bus" operates from Launceston Airport to the CBD at a cost of $14 per person each way. Contact 03 63436677 for reservations and enquiries.
Taxis also meet all flights into Launceston airport.
Fish Health Unit DPIPWE is located within the Mt Pleasant Laboratories complex, 165 Westbury Road, Prospect, Launceston.
ACCOMODATION
20 rooms are held at Quest Apartments Launceston (located in the CBD) under the booking name of DPIPWE for the 3 night period, checking in Tuesday 29 March and out Friday 1 April 2011.

Participants will need to contact the **hotel directly** and state that they are part of this **booking group**, provide their names, contact and credit card details to secure their booking.

Quest Apartments Launceston
16 Paterson Street
Launceston TAS 7250
Phone 03 63 333 555

There are 4 x studio apartments available at a rate of $129 per night, and 16 x 1 bedroom apartments at a rate of $144 per night. (2 bedroom apartments are also available at the hotel should you prefer to share, but they are not being held as part of this booking. If you advise

reception when you contact the hotel that you are part of the DPIPWE booking group they should be able to provide you with government rates).
At this stage the 20 rooms are being held at this rate until the **31 December 2010.**

"Breakfast on the go" packs are available in rooms for $8.50 (price current August 2010), as well as local cafes and bakeries within one city block.

MEALS
Wednesday and Thursday dinner will be at **your** expense, but a venue will be selected that is reasonably priced and within walking distance of accommodation for participants.
Meals Provided
Morning tea, lunch and afternoon tea; Wednesday- Friday inclusive

CONTACTS for more information:

Nette Williams – AAHL Lynette.Williams@csiro.au

Belinda Jones – DPIPWE TAS Belinda.Jones@dpipwe.tas.gov.au

Mel Higgins – DPIPWE TAS Melissa.Higgins@dpipwe.tas.gov.au

"*Aquatic Animal Health Technical Scheme Forum and Skills Training Workshop*"

**30th March – 1st April 2011 (3 days)**
**Hosted by DPIPWE. Launceston, Tasmania**

**Planned focus of the workshop**
The focus of the workshop is for technical staff and new scientific staff to:

(1) gain familiarity and experience with a variety of diagnostic techniques use for the detection and identification of aquatic animal pathogens;
(2) extend their network to include diagnostic and research staff working in the area of aquatic animal health.

**Key issues discussed/worked through**

1. Technical issues

- Current aquaculture disease issues - this would include presentations by participants of current techniques and interesting diagnostic cases from within their own jurisdiction
- Highlighting and discussing new and emerging diagnostic techniques
- Practical session

2. Future development of AAHTF

- Developing initial or further contacts with others in the aquatic animal health discipline
- Future funding and support for further workshops
- Location and duration of workshops

The forum also provides the participants with professional and personal development opportunities. The enhanced skills and expertise gained by participants in the forum is likely to form an important part of laboratory staff training and competency development which are important aspects of National Association of Testing Authorities (NATA) accreditation for veterinary testing laboratories.

**Invitation list**

Invitation list to include (1) technical staff on the AAHTF email circulation list (2) FRDC Aquatic Animal Health Subprogram distribution list and (3) Australian subscribers to *Health Highlights*.

**The workshop can accommodate a maximum of 20 participants.**

**Please register your attendance to Belinda.Jones@dpipwe.tas.gov.au by Friday 10th December 2010.**

**Workshop facilitators**

At the 2010 AAHTF workshop three attendees volunteered to help to organise further workshops, Melissa Higgins and Belinda Jones (DPIPWE Launceston) and Nette Williams (AFDL, CSIRO AAHL).

**Participant subsidy**

Participants will be subsidised approximately $350 each. This will depend on the participant numbers.

## Appendix 4: 2011 AAHTF workshop participants and contact details

| Name | Organisation | Position |
|---|---|---|
| Belinda Jones | DPIPWE, Tasmania | Fish Health Unit Technical Officer |
| Martine Cornish | DPIPWE, Tasmania | Technical Officer (Fish Health Unit) |
| Karine Cadoret | University of Tasmania | Fish health lab manager & technician |
| Melissa Higgins | DPIPWE, Tasmania | Fish Microbiologist |
| Nikki Elliot | Berrimah Veterinary Laboratories, NT | Technician |
| Kitman Dyrting | Berrimah Veterinary Laboratories, NT | Veterinary Officer/Pathologist |
| Ilhan Mohammad | DPI Victoria | Technician |
| James Helsham | DPI Victoria | PhD candidate |
| Mark Hawes | DPI Victoria | Veterinary Pathologist |
| Julian Motha | DPI Victoria | Virologist |
| Rachel Hodgeman | DPI Victoria | Technologist |
| Tracey Bradley | DPI Victoria | Veterinarian |
| Joanne Slater | CSIRO, AAHL, Geelong, Victoria | Senior Technical Officer |
| John Hoad | CSIRO, AAHL, Geelong, Victoria | Senior Technical Officer |
| Ben Maynard | CSIRO, Marine Science, Hobart | Aquaculture Molecular Biologist |
| Richard Taylor | CSIRO, Marine Science, Hobart | Aquaculture Biologist |
| Brett Glencross | CSIRO, QLD | Stream Leader - Feed Technologies. |
| Paul Taverner | DEEDI, Cairns | Fisheries Technician |
| Robin DeVries | DEEDI, Cairns | Fisheries Technician |
| Virna Duffey | DEEDI, Townsville | |
| AlisonTweedie | University of Sydney, Aquatic Animal Health Unit | Technician |
| Tiffany Schenk | WA Fisheries | Technologist |
| Stephen O'Connor | NSW Dept Industry and Investment | Fisheries Technician |
| Michel Bermudes | Shellfish culture, Tasmania | Fisheries Technician |
| | | |
| **Expert Presenters** | | |
| **Name** | **Organisation** | **Position** |
| Dr Stephen Pyecroft | DPIPWE, Tasmania | Principal Veterinary Pathologist/Manager Diagnostic Services Branch |
| Dr Mel Higgins | DPIPWE, Tasmania | Microbiologist |
| Dr Richard Morrison | DPIPWE, Tasmania | Senior Research Microbiologist (Vaccine R&D) |
| Dr Teresa Wilson | DPIPWE, Tasmania | Molecular Biologist |
| Dr Jeremy Carson | DPIPWE, Tasmania | Principal Research Microbiologist |
| Marianne Douglas | DPIPWE, Tasmania | Molecular Biologist |
| Belinda Jones | DPIPWE, Tasmania | Technical Officer (Fish Pathology) |
| Martine Cornish | DPIPWE, Tasmania | Technical Officer (Fish Vaccine R&D) |
| Ms Nette Williams | AAHL Fish Diseases Laboratory | Senior Technical Officer |

| | | |
|---|---|---|
| Dane Hayes | DPIPWE, Tasmania | Medical Scientist (Histology) |
| Cath Marshall | DPIPWE, Tasmania | Technical Officer (Histology) |
| Graeme Knowles | DPIPWE, Tasmania | Veterinary Pathologist |

## AAHTF Workshop participants email contacts

| Name | Organisation | State | Email address |
|---|---|---|---|
| Alison Tweedie | Sydney Uni | NSW | Alison.Tweedie@sydney.edu.au |
| Stephen O'Connor | NSW Dept Industry and Investment | NSW | stephen.o'connor@dpi.nsw.gov.au |
| Nikki Elliott | Berrimah Vet Lab | NT | Nikki.Elliott@nt.gov.au |
| Kitman Dyrting | Berrimah Vet Lab | NT | Kitman.Dyrting@nt.gov.au |
| Robin DeVries | DEEDI | QLD | Robin.Devries@deedi.qld.gov.au |
| Brett Glencross | CSIRO | QLD | Brett.Glencross@csiro.au |
| Paul Taverner | DEEDI | QLD | Paul.Taverner@deedi.qld.gov.au |
| Virna Duffy | DEEDI | QLD | virna.duffy@deedi.qld.gov.au |
| Belinda Jones | DPIPWE | TAS | belinda.jones@dpipwe.tas.gov.au |
| Melissa Higgins | DPIPWE | TAS | melissa.higgins@dpipwe.tas.gov.au |
| Martine Cornish | DPIPWE | TAS | martine.cornish@dpipwe.tas.gov.au |
| Ben Maynard | CSIRO | TAS | Ben.Maynard@csiro.au |
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| Richard Taylor | CSIRO | TAS | Richard.Taylor@csiro.au |
| Karine Cadoret | UTAS | TAS | kcadoret@amc.edu.au |
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| Lynette Williams | AAHL | VIC | Lynette.Williams@csiro.au |
| John Hoad | AAHL | VIC | John.Hoad@csiro.au |
| Jo Slater | AAHL | VIC | Joanne.Slater@csiro.au |
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| Mark Hawes | DPI Attwood | VIC | Mark.Hawes@dpi.vic.gov.au |
| Rachel Hodgeman | DPI Attwood | VIC | Rachel.Hodgeman@dpi.vic.gov.au |
| Julian Motha | DPI Attwood | VIC | Julian.Motha@dpi.vic.gov.au |
| Tracey Bradley | DPI | VIC | Tracey.Bradley@dpi.vic.gov.au |
| Tiffany Schenk | WA Fisheries | WA | tiffany.schenk@agric.wa.gov.au |

**AAHTF Workshop participants, DPIPWE, Launceston, 30 March- 1 April 2011**

The group photographed during the field trip at Seahorse World on the Tamar River, Tasmania

Photo supplied by Julian Motha

## Appendix 5: Workshop Participant Review Form

| ITEM | Excellent | Good | OK | Poor |
|---|---|---|---|---|
| **Location and venue:** (Launceston) | | | | |
| Other suggestions | | | | |
| **Accommodation:** | | | | |
| Other suggestions | | | | |
| **Date and duration:** | | | | |
| Other suggestions | | | | |
| **Format:**<br>• Presentations<br>• Interaction | | | | |
| Other suggestions | | | | |
| **Program topics** | | | | |
| Other suggestions | | | | |
| **Length (2 and a half days- 3 days):** | | | | |
| Other suggestions | | | | |
| **Food: (suitable, good, bad, enough…)**<br>• Morning breaks<br>• Lunches<br>• Afternoon breaks | | | | |
| Comments | | | | |
| Is the "stand alone" workshop better than one included in;<br>-FRDC conference<br>-AAVDL | **Agree** | **Disagree** | | |
| Other comments | | | | |