

FINAL REPORT



**Aquatic Animal Health Subprogram:
enhancement of the emergency disease
management capability in Victoria – adapting
Victoria's arrangements for the management of
aquatic animal disease emergencies**

**Mehdi Doroudi, Peter Appleford, John Galvin,
Kit Button,**

June 2004

FRDC Project No. 2002/665



Australian Government
Department of Agriculture,
Fisheries and Forestry



Australian Government
Fisheries Research and
Development Corporation



M. Doroudi, P. Appleford, J. Galvin, K. Button

Aquatic Animal Health Subprogram: enhancement of the emergency disease management capability in Victoria – adapting Victoria’s arrangements for the management of aquatic animal disease emergencies

ISBN: 1 74146 274 6

© Fisheries Research & Development Corporation & The State of Victoria, Department of Primary Industries

This work is copyright. Except as permitted under the Copyright Act 1968 (Cth), no part of this publication may be reproduced by any process, electronic or otherwise, without the specific written permission of the copyright owners. Neither may information be stored electronically in any form whatsoever without such permission.

The Fisheries Research and Development Corporation plans, invests in and manages fisheries research and development throughout Australia. It is a federal statutory authority jointly funded by the Australian Government and the fishing industry.

Printed by Department of Primary Industries, Victoria

Disclaimer: This publication may be of assistance to you but the State of Victoria and the Australian Government and their employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication.



**Aquatic Animal Health Subprogram: enhancement of the
emergency disease management capability in Victoria –
adapting Victoria’s arrangements for the management of
aquatic animal disease emergencies**

**Mehdi Doroudi, Peter Appleford, John Galvin,
Kit Button,**

June 2004

FRDC Project No. 2002/665

TABLE OF CONTENTS

NON-TECHNICAL SUMMARY	5
ACKNOWLEDGEMENTS	7
BACKGROUND	7
NEED	8
OBJECTIVES	9
METHODS	9
RESULTS/DISCUSSION	10
BENEFITS AND ADOPTION	14
FURTHER DEVELOPMENT	14
PLANNED OUTCOMES	14
CONCLUSION	15
APPENDIX 1 – INTELLECTUAL PROPERTY	16
APPENDIX 2 – STAFF	17

NON-TECHNICAL SUMMARY

2002/665	Aquatic Animal Health Subprogram: enhancement of the emergency disease management capability in Victoria – adapting Victoria's arrangements for the management of aquatic animal disease emergencies
-----------------	---

PRINCIPAL INVESTIGATOR:

Anthony Forster
Fisheries Victoria
Department of Primary Industries
Phone: 03 9412 5710 Fax: 03 9412 5770
Email: anthony.forster@dpi.vic.gov.au

CO-INVESTIGATOR:

Dr Andrew Cameron
Chief Veterinary Officer's Unit
Department of Primary Industries
Phone: 03 9217 4235 Fax: 03 9217 4322
Email: andrew.cameron@dpi.vic.gov.au

OBJECTIVES:

1. To build capacity within Victorian Department of Primary Industries (VDPI) in the area of management of emergency disease incidents,
 - 1.1. To improve awareness of participants roles and responsibilities in an emergency disease response situation,
 - 1.2. To increase the participants' knowledge of the communication routes to be used in an emergency disease response by working through a scenario which mimics a real emergency,
 - 1.3. To examine and test the skills and abilities of the participants in group problem solving and decision making skills,
 - 1.4. To improve the participants' ability to manage tasks by prioritising a number of competing demands during the operational phase of an emergency response
 - 1.5. To increase participants' understanding of the operational effects of specific requests to field staff operating at infected premises
2. To test the VDPI Manual – Victoria's Arrangements for the Management of Aquatic Animal Disease Emergencies,
3. To develop interactions between animal health staff and fisheries staff within VDPI.

NON TECHNICAL SUMMARY:**OUTCOMES ACHIEVED TO DATE**

1. Increased awareness and ownership of the Victorian Control Centre Manual (Victoria's Arrangements for the Management of Aquatic Animal Disease Emergencies) within VDPI.
2. More effective emergency response procedures within VDPI for the control and or eradication of emergency diseases in Victorian waters.
3. The integration of various divisions of VDPI (Fisheries Victoria, Animal Health Operations Branch, regional Catchment and Agricultural Services staff and the Chief Veterinary Officer's Unit) in this project established a working relationship towards dealing with disease emergency outbreaks.
4. Development of increased expertise within VDPI to conduct and evaluate simulation exercises on aquatic animal disease emergency response.
5. Because of the generic nature of exercise, both aquaculture and fisheries sectors are beneficiaries of this project.

In the past 20 years, many fisheries and aquaculture industries around the world have suffered major production losses through the impact of disease epidemics. To date, Australia has avoided many of these epidemics and retains a favourable disease status, which facilitates international trade and the receipt of premium prices for Australian seafood exports.

Exercise Rainbow was designed to extend on the previous emergency disease simulation exercise conducted in Victoria during Exercise Tethys in November 2003 by providing training in emergency management to a wider group of Fisheries staff and Animal Health staff.

The aim of the exercise was to build capacity within the divisions of the VDPI to appropriately deal with aquatic animal emergency disease response procedures. The simulation was developed over the period from February 2004 to May 2004. Exercise Rainbow was successfully conducted on 5-6 May 2004 with approximately 20 Fisheries staff and 15 Animal Health staff participating.

Evaluation of the outcomes of the exercise and jurisdictional performance highlighted that there is a good general awareness of emergency disease management procedures within VDPI but there exists a number of potential opportunities for further improvement and or development of the existing systems. This was particularly true in adapting terrestrial animal disease management systems for use in disease incidents in aquaculture and fisheries.

This project resulted in a number of recommendations that aim to improve pre-existing frameworks and resources in order to develop more robust procedures for management of the response to an emergency disease incident.

KEYWORDS: **aquatic animal health; aquaculture; disease emergency preparedness; emergency disease response.**

ACKNOWLEDGMENTS

Dr Mehdi Doroudi and the other authors are grateful to the VDPI staff who provided technical input and participated in training workshop during the completion of this exercise. Special thanks is extended to Annette Radford, Bill Lussier, Peter Lawson, Mike Hosking and Dr Sally Ridge.

The financial support of the Fisheries Research and Development Corporation is gratefully appreciated. The authors also wish to thank Dr Iain East and Dr Linda Walker, Exercise Directors, Australian Government - Department of Agriculture, Fisheries and Forestry for developing and facilitating the exercise. Their report is used as framework for this final report.

BACKGROUND

Many fisheries and aquaculture industries around the world have suffered major production losses through the impact of disease epidemics. Australia, to date, has avoided many of these disease epidemics. In 1995, a major disease incident resulted in the death of a substantial proportion of the Australian pilchard population. In response, the Federal government conducted several inquiries into the management of aquatic animal health. The subsequent reports (Nairn Report, Report of the National Taskforce on Imported Fish and Fish Products) revealed that Australia's emergency response capability was limited and *ad hoc* in nature. To enhance and coordinate Australia's emergency response capability the Federal Government developed AQUAPLAN - Australia's National Strategic Plan for Aquatic Animal Health 1998 - 2003. AQUAPLAN includes eight programs that address all aspects of aquatic animal health.

The Federal Budget Initiative 'Building a National Approach to Animal and Plant Health' was announced in May 2000. This comprises projects funded out of \$3m available over four years for aquatic animal health research into the following four program areas:

1. Diagnostic capability
2. Emergency preparedness (AQUAVETPLAN manuals)
3. Emergency preparedness (training, eg simulation exercises)
4. Establishment of a joint industry/ government body for aquatic animal health management

The AQUAVETPLAN Control Centres Management Manual 2001 was prepared under program two (released in February 2002). At the State/Territory level the AQUAVETPLAN Control Centres Management Manual 2001 must be:

"adapted to local legislative and administrative requirements by each State/Territory jurisdiction responsible for the management of aquatic animal disease emergencies;" and "a State/Territory disease control headquarters, with responsibility for strategic management of the disease outbreak, must be established, and it must ensure that appropriate interdepartmental and interstate relations and communications are in place."

To address the above, the VDPI has developed Victoria's Arrangements for the management of Aquatic Animal Emergencies with funding from the Aquatic Health sub-program of the FRDC.

The conduct of simulation exercises was ranked as a high priority because the relative absence of emergency disease events in the Australian fishing and aquaculture industries has meant that government staff have had relatively little exposure to emergency management policy and

procedures. Simulation exercises provide a valuable tool to test Victoria's Arrangements for the Management of Aquatic Animal Disease Emergencies, an adaptation of the AQUAVETPLAN Control Centres Manual to local legislative and administrative requirements. Simulation exercises also ensure that the appropriate interdepartmental relations and communications are in place. Simulation exercises are recognised as a tool in developing emergency preparedness under program three above.

Over the past four years, the Office of the Chief Veterinary Officer (OCVO) within the Australian Government Department of Agriculture, Fisheries and Forestry (AG-DAFF) has conducted a program of simulation exercises designed to enhance the ability of all State/Territory jurisdictions to respond to an emergency disease event. This program has now conducted seven exercises with individual States focussing on particular aquaculture industries within that State and three further exercises with participants from a range of jurisdictions focussing on aspects of management of disease emergencies at a national level.

Members of the VDPI benefited from participation in the Exercise Tethys simulation however Tethys focussed on establishing an effective communication system whereas the proposed exercise focussed on disease management in the field. A specific simulation exercise conducted with VDPI will develop Victoria's capability in management of emergency industry incidents. The proposed exercise will also address the need for more members of the VDPI to receive training in the area of disease management.

NEED

As few major disease incidents have occurred in Australian aquaculture, State/Territory Departments have relatively little experience in incident management for emergency aquatic animal diseases. No jurisdiction, to date, has conducted a large-scale response to eradicate exotic disease in aquaculture and thus expertise in these areas is limited. In the absence of real-life emergency events, simulation exercises provide a practical alternative to expose staff to aspects of emergency management.

The development of Victoria's Arrangements for the Management of Aquatic Animal Disease Emergencies established the roles and responsibilities for DPI staff, however, implementation success will require extensive training and discussion. Simulation exercises will improve staff awareness and ownership, capacity and communication. The need for these exercises can be summarised as follows:

1. Both Government and Industries have relatively little experience with real emergencies.
2. In Victoria, there is a lack of clarity about the roles and responsibilities of various individuals and Departments especially where fisheries are managed separately from terrestrial animal industries.
3. The further development of Victoria's Arrangements for the Management of Aquatic Animal Disease Emergencies will be enhanced by testing the arrangements under simulated disease management conditions.
4. Lack of experience with emergency management will invariably lead to a delayed response to a disease emergency that in turn could lead to a greater spread of disease, loss of Australia's disease free status and severe impacts on export industries.

All simulation exercises are initiated by requests from clients. VDPI has requested the proposed exercise and actively supports the proposal. VDPI proposed the simulation exercise as a priority to the ABG and the sub-committee of the FHMC who approved the proposal, and the proposal was funded through the Aquatic Animal Health sub-program of the FRDC.

OBJECTIVES

The objectives of this exercise were:

1. To build capacity within VDPI in the area of management of emergency disease incidents,
 - 1.1. To improve awareness of participants roles and responsibilities in an emergency disease response situation,
 - 1.2. To increase the participants' knowledge of the communication routes to be used in an emergency disease response by working through a scenario which mimics a real emergency,
 - 1.3. To examine and test the skills and abilities of the participants in group problem-solving and decision-making skills,
 - 1.4. To improve the participants' ability to manage tasks by prioritising a number of competing demands during the operational phase of an emergency response, and
 - 1.5. To increase participants' understanding of the operational effects of specific requests to field staff operating at infected premises,
2. To test Victoria's Arrangements for the Management of Aquatic Animal Disease Emergencies,
3. To develop interactions between Animal Health and Fisheries staff within VDPI.

METHODS

A one-day training workshop was developed to provide the regional Fisheries and Animal Health staff with training in emergency management of aquatic animal disease outbreaks based on Victoria's Arrangements for the Management of Aquatic Animal Disease Emergencies. The daily workshops were conducted over a period of four days from 27th to 30th April 2004 with most Fisheries staff and five Animal Health staff from each region (Gippsland, North, Southwest and Port Philip Bay). The major subjects of the training workshop were:

- Fish disease - emergency response arrangement
- Fish-kill investigations
- Responses to emergency fish disease
- Fisheries Victoria's role in an emergency response

The simulation was developed over a three-month period from February 2004 to May 2004. In February, Dr Iain East and Dr Linda Walker of AG-DAFF visited Melbourne, Alexandra and Snobs Creek for initial discussions with VDPI staff and for a familiarisation trip to the Snobs Creek facilities and the Eildon Rainbow Trout Farm. The basic parameters of the exercise were established during that visit. AG-DAFF staff subsequently designed the simulation and the associated documentation was developed with the assistance of Dr John Galvin, Animal Health Operation Branch, VDPI. Dr Mehdi Doroudi, Chief Veterinary Officer's Unit, VDPI and Bill Lussier, Fisheries Victoria managed administrative details and organization within VDPI.

The basic scenario for this exercise was a disease event on a fictional trout farm in the Snobs Creek area. The scenario also involved occurrence of the disease within the adjacent natural waterway, Snobs Creek. This geographic site was chosen because the farm was sited upstream of a significant proportion of the Victorian trout industry. The simulation was called *Exercise Rainbow* after the Rainbow Trout, the predominant species of trout grown in the area.

The exercise was held at the Department of Sustainability and Environment offices at Alexandra and the Snobs Creek hatchery. The exercise commenced at 10 am and concluded at 5.30pm on the first day and commenced at 8.30am and concluded at 3pm on the second day. During both days of the exercise, officers from AG-DAFF acted as exercise controllers.

Seven days prior to the exercise each participant received a preliminary document, *Instructions for Participants*. This document included details that explained how the exercise would be conducted and explained the basic scenario and events that had occurred between the first observation of mortalities and the day of the exercise. Additional briefing notes were provided to the LDCC controller, Dr Sally Ridge, Chief Veterinary Office, VDPI and the Planning Manager (fish vet), Dr Mehdi Doroudi.

The first day of the exercise commenced with an initial meeting of the Incident Management Team at a time immediately after report of the fish mortality incident. Simultaneously, a diagnostic team was dispatched to the farm reporting the fish mortality and two additional teams were sent to investigate dangerous contact premises. The second session on the first day represented a subsequent time period after laboratory confirmation of the disease had been received and the SDCHQ had decided to proceed with eradication of the disease by slaughtering out the three properties. The second session was extended into the second day to allow completion of each team's destruction and disposal plans. The final session of the exercise represented a time period seven days later when the surveillance program had revealed that the disease had spread to wild fish in Snobs Creek.

Various inputs (documents, phone calls etc) designed to direct the exercise and introduce particular issues were introduced by the exercise controllers throughout the two days.

For each session of the exercise, the exercise controllers had a checklist detailing a pre-determined list of communications and actions that the exercise directing team had identified as necessary components of the response. The checklists included space to record whether each item was completed, the time at which it was completed and whether the jurisdiction needed prompting to complete the item. The checklists were designed based on the response activities described within Victoria's Arrangements for the Management of Aquatic Animal Disease Emergencies and the AQUAVETPLAN Control Centres Management Manual.

The debriefing and evaluation methods included a range of techniques that were designed to determine whether the aim and objectives of the exercise had been successfully addressed. In addition to the assessment through the checklists and observations of the exercise directing team, a debriefing was held with participants at the conclusion of the exercise. The debriefing process allowed personal experiences of the participants to be captured and assessed. The debriefing also allowed an assessment of the qualitative performance of activities i.e. their efficacy and efficiency during the exercise.

RESULTS/DISCUSSION

The design of Exercise Rainbow identified three formal objectives to be the basis of the exercise. The Exercise Directors assessed the performance of participants against each of these formal objectives.

Objective 1 - To build capacity within the Victorian Department of Primary Industries in the area of management of emergency disease incidents

Prior to the first day of the exercise, only three of the Fisheries staff participating in the exercise had previously participated in either a real disease emergency or an emergency disease simulation exercise. None of the Animal Health staff other than Dr. Mehdi Doroudi had experience with disease management in aquaculture. In addition, the majority of the participants had not previously met. Despite these limitations, the participants settled into their roles very quickly and performed to a high standard. The Animal Health staff were able to instruct the Fisheries staff in the requirements of each position.

After a review of the first day of the exercise, the second day of the exercise was modified to allow each field team to complete the destruction and disposal plan that they had commenced on the afternoon of the first day. This revamping of the exercise required the staff involved to develop detailed plans and costings and thus became a much more useful training event because potential obstacles could not be easily dismissed.

The most obvious limitation on capacity observed by the Exercise Directors was that of direct experience with fish health. Whilst the department's fish vet, Dr. Mehdi Doroudi, excelled in his role, there was no clear alternative if Dr. Doroudi was not available. In an extended response, staff would need to be rotated and identification of an alternate staff member to replace Mehdi may prove difficult.

The interaction of Fisheries and Animal Health staff was beneficial to both groups and also identified several areas where the standard procedures used in management of disease events in terrestrial animals are not directly applicable to aquaculture. These included:

- Diagnostic and surveillance teams used both the standard terrestrial animal ANEMIS forms and the Fish Kill forms. Whilst useful, the ANEMIS forms need modification to be directly applicable to aquaculture. For instance, the form should require diagnostic teams to gather information on water source, flow and disposal and whether water discharge can be stopped without adverse impacts on the farm. The source and type of feed used on the farm should also be recorded. Field teams were also briefed prior to leaving the LDCC on the type of information that they needed to collect. The use of one consolidated form rather than the current two would be preferable.
- Imposition of quarantine on properties with a design that includes a flow-through water system is impractical without immediate impacts on the stock. Thought needs to be given to the nature of quarantine and whether it is appropriate to apply quarantine to such properties before diagnosis of an emergency disease is confirmed. If disease is present in such a system, it is likely to have spread downstream before detection of the disease.
- Infection in a wild population of fish introduces problems in the issuing of notices and the control of disease. The owner of such stock is likely to be the Crown and there was uncertainty as to whom notices should be issued. Some debate as to the roles of Murray Goulburn Water, the Catchment Management Authority and the National Parks was held without resolution of the issue.

On several occasions, the staff needed to consult the EPA / DSE to seek advice on issues such as the control of bird access to the infected premises and the use of chemicals such as rotenone in open waterways. An EPA officer on site would have made these consultations easier and quicker. In addition, involvement of the VDPI Chemical Standards Branch in emergency aquatic animal

disease responses would also be useful. Although an extension officer was placed in the LDCC to liaise with the affected industry, an industry member within the LDCC would have provided a ready source of such information.

There was a concern that participants did not file all of the appropriate documents as required in a real-life emergency. During the exercise, the media unit arranged a press briefing prior to the Industry Liaison Officer informing industry members of the disease outbreak. There is a need for greater communication between groups within the LDCC. Another example of communication problems arose when details of the laboratory results were filed without a copy going to the surveillance and tracing teams.

Fisheries staff participating in the field teams were uncertain of conducting several required actions, for example, they did not impose quarantine on the infected premise or dangerous contact premises during their initial visit. This could be because of not being familiar with the Livestock Disease Control Act 1994. Each field team was lead by a gazetted, experienced Animal Health Officer. It was within the powers of the AHO's to impose quarantine. There was no explanation provided as to why these officers did not impose quarantine on the infected premise during the first visit. This could be because of the fact that the diagnosis was not confirmed.

Knowledge provided by local Fisheries Officers suggested that effective control of fish movement by the recreational fishing industry could be most effectively undertaken by the positioning of Fisheries Officers to police movement at local boat ramps.

Recommendations

1. That VDPI Veterinarians be encouraged to gain experience in the area of fish health to provide additional expertise in the event of a major disease emergency in fisheries and aquaculture.
2. That VDPI's standard operating procedures for emergency disease management of terrestrial animals be reviewed to ensure that these procedures are suitable for use in diseases of aquatic animals.
3. That a list of equipment necessary for the establishment of an LDCC be created and measures undertaken to ensure that this equipment is immediately available for use when a LDCC is established.
4. That the staffing of the LDCC be reviewed to consider inclusion representatives of:
 - the EPA,
 - the appropriate Catchment Management Authority and
 - the affected industry.
5. That the fish kill kits provided to Fisheries and Animal Health staff include appropriate laboratory packaging for submission of samples.
6. That LDCC staff consult other members and teams within the LDCC prior to completing proposed actions.
7. That training of Fisheries staff be reviewed to ensure that they are aware of their powers with respect to emergency animal disease incidents under the *Livestock Disease Control Act 1994* and have greater understanding of chemicals and their uses in disease emergencies.
8. That LDCC staff ensure that, in an emergency, they record all appropriate information and file it as required.

Objective 2 - To test the VDPI Manual – *Victoria's Arrangements for the Management of Aquatic Animal Disease Emergencies*

The VDPI manual is a support tool for conducting a proper response to the disease outbreak. The staff before the exercise response generally reviews the manual; therefore, it has been used very little during the exercise. The LDCC director had prepared specific task lists for each team within the LDCC based on the job cards in the manual and specifically tailored to this exercise.

- During the design of the exercise, several mistakes were found in the manual, these included:
 - Although the text of the manual (p.18) refers to the fish kill proforma, the proforma is not included at Appendix 9 as indicated.
 - On page 18, the manual refers to Appendices to 10 and 11, this reference should be to Appendices 9 and 10.
 - On page 18 of the manual, reference is made three times to roles described in appendices 5, 6 and 7. In each case, the text should read appendices 6, 7 and 8.
 - On page 18, the text refers to “*actions to be taken by the Incident Controller*”, none of the cited appendices makes reference to the role of an incident controller.
 - There is no consistency in the use of the terms infected place and infected area and references should be consistent throughout.
 - There are no job cards for any administrative support officers to assist the controller with secretarial and records management functions.
 - There are no job cards for members of the Resources Team.
- Thought should be given to include the representatives of affected industry, other government departments eg Environment Protection Agency (EPA) in the LDCC to facilitate EPA clearance of chemical usage, disposal etc. Other representatives such as those representing local government may also be appropriate under certain conditions.

Recommendations

9. That the Victorian manual “*Victoria's Arrangements for the Management of Aquatic Animal Disease Emergencies*” be updated on an regular basis and that the discrepancies listed above and any others found be corrected.

Objective 3 - To develop interactions between animal health operations staff and fisheries staff within VDPI

The exercise brought together approximately 20 Fisheries and 15 Animal Health staff. The two groups worked cooperatively throughout the exercise and a degree of trust and mutual respect was established during the exercise. The training session prior to the exercise also provided an opportunity for these two groups of staff to interact.

The design of the exercise with each LDCC position being held by an Animal Health staff member shadowed by a Fisheries Officer worked well with the combined expertise allowing each pairing to effectively and efficiently complete their roles in the exercise. The controller quickly produced a list of names, roles and mobile phone numbers so that participants were aware of the individuals taking on each of the roles in the LDCC team.

Recommendations

10. That VDPI continues the practice of conducting exercises involving both Animal Health and Fisheries staff to build participants skills in emergency aquatic animal disease management and continue to build relationships between the two groups.
11. That for the purpose of fish disease emergencies, VDPI appoints specified trained Fisheries staff as Stock Inspectors to provide them with the powers necessary to conduct inspections on properties, impose quarantine of farms etc while they are not accompanied with Animal Health staff.

BENEFITS AND ADOPTION

The exercise established a working relationship between the divisions of the VDPI (Fisheries Victoria, Animal Health Operations Branch, regional CAS staff and the Chief Veterinary Officer's Unit) that would be involved in the response to an emergency aquatic animal disease incident.

Fisheries Victoria staff received valuable training in emergency disease management principles and familiarity with their job descriptions within the Local Disease Control Centre through the training workshops and simulation exercise. Animal Health staff received valuable training in aquatic animals and the aquatic environment. This will lead to improved management of emergency disease events involving aquatic animals in Victoria. This project generally allowed application across to other aquaculture and fisheries industries in Victoria as the skills developed by VDPI, in large part, are generic.

Improved control of disease introduction and spread, reduces the risk of serious impacts on the aquaculture industry, seafood market, seafood consumers and conservation of diversity of wild stocks. The improved ability of VDPI staff to detect and manage disease outbreaks has a National benefit for maintenance of trading status through demonstrable animal health programs.

FURTHER DEVELOPMENT

Evaluation of the outcomes of the exercise highlighted that there is a good general awareness of emergency disease management procedures but there are a number of potential opportunities for further improvement and or development of the existing systems. The VDPI will utilise the recommendations from this project to improve its capability to deal with disease emergency outbreaks.

PLANNED OUTCOMES

The planned outcomes achieved from this project are:

1. Increased awareness and ownership of the Victoria's Arrangements for the Management of Aquatic Animal Disease Emergencies within VDPI.
2. More effective emergency response procedures for the control and eradication of emergency

diseases in Victorian waters.

3. The integration of various divisions of VDPI (Fisheries Victoria, Animal Health Operations Branch, regional CAS staff and the Chief Veterinary Officer's Unit) in this project established a working relationship towards dealing with disease emergency outbreaks.
4. Development of increased expertise within VDPI to conduct and evaluate simulation exercises on aquatic health disease emergency response.
5. Because of the generic nature of exercise, both aquaculture and fisheries sectors are beneficiaries of the project.

CONCLUSION

The exercise resulted in 20 Fisheries staff being introduced and or further trained to the various components of and roles within the emergency disease management system. In addition, 15 members of the Department's Animal Health staff were introduced to the specific problems associated with disease management in aquatic systems. The exercise demonstrated that the participating government staff have a good knowledge of disease management procedures.

The exercise also served to foster/establish a working relationship between the divisions of VDPI that would be involved in the response to an emergency aquatic animal disease incident, and in doing so raised the awareness of government officers to the contribution that each group can make to a combined response team.

A number of minor issues were identified during the exercise that, if addressed, would assist in the effective management of emergency disease incidents. These issues are addressed in the recommendations made within this report.

APPENDIX 1: INTELLECTUAL PROPERTY

The FRDC believes that making project results available is in the best interests of the Australian fishing industry and community. No intellectual property has been identified for protection or confidentiality in this project.

APPENDIX 2: STAFF

Exercise Participants

Fisheries Victoria

Craig Murdoch, Ray Gilby, Murray Burns, Paul Shea, Natashar Wills, Mike Hosking, Fern Hames, David Trickey, Greg Sharp, Eain McRae, Erin Webb, Errol Parmigiani, Paul Bodsworth, Dick Brumley, Peter Lawson, Scott Falconer, Matt Ward, Georgie Raby, Bill Lussier, Scott Boreham.

Chief Veterinary Officer's unit

Mehdi Doroudi, Sally Ridge

Animal Health Operation / Regional CAS

Belinda Grace, Jeff Cave, Stephen Nee, Aileen Eccles, Bob Lambell, Sue Vaughan, Duncan Worsfold, Paul Tulk, Stuart Arms, Martin Wesols, Dean Bellingham, Anthony Monteith

Exercise Observers

John Galvin, Kit Button, Peter Appleford, Department of Primary Industries, Victoria

Exercise Directors

Iain East, Linda Walker, Australian Government – Department of Agriculture, Fisheries and Forestry