

Aquatic Animal Disease Preparedness Assessment

Final Report

**Mark S. Crane
Grant T. Rawlin**

**FRDC Project Number:
95/087**



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PROJECT TITLE

Aquatic Animal Disease Preparedness Assessment

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95/087

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NON-TECHNICAL SUMMARY

95/087

Aquatic Animal Disease Preparedness Assessment

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OBJECTIVES:

1. To assess the current fish disease legislation in each state, territory and New Zealand.
2. To recommend improvements in the current legislation and lines of command in the event of a serious fish disease outbreak.
3. To determine the requirement for chemicals/vaccines for use during a fish disease outbreak.

NON-TECHNICAL SUMMARY:

Prior to the initiation of this project, it was recognised that while State/Territory, as well as Commonwealth, legislation is well-developed for the management of traditional stock animal diseases, legislation has not addressed adequately issues concerning aquatic animal diseases and their control. Thus animal health policy makers established a working party to assess the effectiveness of State/Territory aquatic animal disease legislation in the face of hypothetical, severe fisheries disease outbreaks in public waters, aquaculture sites, in finfish and in aquatic invertebrates.

Accordingly, the Working Party visited each State/Territory to discuss with those officials responsible for managing aquatic animal disease outbreaks, the current status of State legislation, whether the legislation is appropriate and whether the State has adequate resources and legislative support to manage effectively aquatic animal disease emergencies. In this way the strengths and weaknesses of each State/Territory with regard to aquatic animal disease preparedness were identified for further consideration by the local authorities. Over the past two years significant progress on aquatic animal health policy development at the Commonwealth and State/Territory levels has been made and is outlined in this report.

Major outcomes of the project include a significant raising of the profile of aquatic animal disease. At both State/Territory and Commonwealth levels the issue of aquatic animal disease, even in the face of the emergence of newer fisheries industries and a growth in fisheries production, had attracted relatively little attention and hence few resources. During the course of the project, there have been interaction with other projects and activities, coordinated by the Department of Primary Industries and Energy, which has had a synergistic effect on the progress of the issue. Recently, there has been very significant progress on aquatic animal health policy development at State/Territory and Commonwealth Government levels.

In the majority of States/Territories, either new or revised legislation has been enacted, is currently being enacted or current legislation is being reviewed to determine whether revised/new legislation is required. Thus, most of the States/Territories have addressed, or are addressing, the legislative issue.

In addition to ensuring appropriate legislation is in place, each State/Territory is responsible for ensuring the legislation is invoked as needed and effective management of aquatic animal disease emergencies is undertaken. Regardless of the scale of the incident the State/Territory should be notified, and should then make an assessment of appropriate action, ensuring that such action is in accordance with national policy.

Management of an aquatic animal disease emergency will require a collaborative approach and will, primarily, involve expertise in aquatic animal biology and aquaculture systems which would normally reside in State Departments of Fisheries or the equivalent, as well as expertise in animal diseases and epizootiology normally available from State Departments of Agriculture or the equivalent. In some cases, this expertise resides within one department (e.g. Departments of Primary Industries and Fisheries) and coordination of the response presents little difficulty. In other cases, the expertise is not centralised and coordination of the response becomes a more complex issue.

A major achievement, clearly evident, was the bringing together of the principal decision makers required in the event of an aquatic animal disease emergency. In some States/Territories these meetings represented the first instance in which this had occurred for the purposes of aquatic animal disease emergency contingency planning. Hence, together with the respective roles and responsibilities, important linkages were immediately put in place which later formed the basis for development of an action plan. In each State/Territory, a theoretical scenario, an aquatic animal disease emergency relevant to the particular State/Territory, was presented and worked through to its conclusion. This illustrated the resources, responsibilities and roles required for effective management of the emergency.

In most cases, the status of the State/Territory legislation was reviewed and any gaps were identified. In general, the interaction between the various State Departments represented at the meetings and with the Working Party was very positive. The meetings were effective at re-enforcing the States/Territories commitment to aquatic animal disease contingency planning.

It was noted repeatedly that there is a severe lack of resources at not only the level of policy development but also at the operations level in relation to aquatic animal health. Clearly, this lack of resources has had a significant negative impact on the pace of aquatic animal health policy development. Moreover, in the event of an aquatic animal disease emergency this lack of resources will be even more evident and the effectiveness of the response will be reduced. For example, at the State/Territory and Commonwealth levels there is such a deficiency in well-trained aquatic animal health professionals that in some agencies, if they exist at all, it is the same few officers who are largely responsible for policy development as well as for operations. Thus, during an emergency, these people, as part of the disease control centre, will be expected to plan, coordinate and supervise as well as participate in field activities such as collection of samples and undertaking disease diagnosis.

A further issue which was raised during discussions with several States/Territories related to jurisdiction, in the event of an aquatic disease outbreak over Commonwealth land/water within State/Territory boundaries. Under normal circumstances, responsibility for these regions/areas resides with Environment Australia (formerly the Australian Nature Conservation Agency) and is covered by Commonwealth legislation. However, since Environment Australia does not have available any animal disease expertise or related resources there needs to be mechanism to ensure that aquatic animal disease emergencies in these locations are effectively managed. Negotiations are proceeding on these matters.

ACKNOWLEDGMENTS

The authors wish to acknowledge the time and effort provided by officers of State and Territory Governments, officers of the Commonwealth Government and other Agencies. The generosity of these professionals in giving their valuable time and expertise to the project is much appreciated. The authors noted the 'collegiate' that has developed within the professionals concerned with disease control in aquatic animals is one of the great strengths of the group. It is through their assistance that this project has been completed; but rather than acknowledge them individually here, the names of all those people who have been involved with this project to a greater or lesser degree are provided in Section 14.

In addition, during part of this project one of the project leaders, Dr Grant Rawlin, was employed with DNRE, Victoria. The support of this organisation to the project is gratefully acknowledged.

1 EXECUTIVE SUMMARY

1.1 Introduction

As recommended by Sub-Committee on Fish Health 4 (SCFH4), Animal Health Committee (AHC), now renamed as Veterinary Committee (VC), and Advisory Committee on Live Fish (ACOLF), AHC and Standing Committee on Agriculture and Resource Management (SCARM) endorsed the formation and funding approach for a *Working Party on Aquatic Disease Preparedness Assessment*. The Terms of Reference of the Working Party were:

To assess the effectiveness of State/Territory aquatic animal disease legislation in the face of hypothetical, severe aquatic animal disease outbreaks in public waters, aquaculture facilities, in fin fish and in aquatic invertebrates.

The Working Party objectives, formulated by SCFH4, were as follows.

1. To assess the current fish disease legislation in each State, Territory and New Zealand.
2. To recommend improvements in the current legislation and lines of command in the event of a serious fish disease outbreak.
3. To determine the requirement for chemicals/vaccines for use during a fish disease outbreak.

1.2 Disease Preparedness

Each State/Territory has recognised that, in the past, legislation has not addressed adequately issues concerning aquatic animal diseases and their control. While State/Territory, as well as Commonwealth, legislation is well-developed for the traditional stock animals and their diseases, either aquatic animals are not recognised as “stock” and are excluded from this legislation, or the legislation relating to fisheries matters does not address the issue of aquatic animal diseases. This state of affairs prompted SCFH4 to propose the formation of the Working Party as noted above.

Accordingly, the Working Party visited each State/Territory to discuss with officials responsible for managing aquatic animal disease outbreaks, the current status of State legislation, whether the legislation is appropriate and whether the State has adequate resources and legislative support to manage effectively aquatic animal disease emergencies. Before the Working Party visit, State/Territory officials, guided by a series of pertinent questions, reviewed the current legislation so that, during the discussions, the basis of an action plan to deal with aquatic animal disease emergencies was developed.

1.3 Outcomes

Major outcomes of the project include a significant raising of the profile of aquatic animal disease, at both State/Territory and Commonwealth levels, as an issue which, in the face of the emergence of newer fisheries and aquaculture industries and a growth in fisheries production, had, until now, attracted little attention and hence few resources. Thus, during the course of the project, there has been several interactions with other projects (e.g. *National Task Force on Imported Fish and Fish Products*, the *Task Force on Managing Incursions of Exotic Pests, Weeds and Diseases* and other activities of the Fish Health Coordinating Group (FHCG) of SCARM and the Standing Committee on Fisheries and Aquaculture (SCFA)) that have had a synergistic effect. In addition recently, there has been significant progress on aquatic animal health policy development (e.g. the *National Aquatic Animal Disease Contingency Planning Workshop*) at the State/Territory and Commonwealth Government levels.

At the State/Territory level, either new or revised legislation has been enacted, is currently being enacted or current legislation is being reviewed to determine whether revised/new legislation is required. Thus, most of the States/Territories have addressed, or are addressing, the legislative issue. In addition to ensuring appropriate legislation is in place, each State/Territory is responsible for ensuring the legislation is invoked as needed and effective management of aquatic animal disease emergencies is undertaken. Three broad levels of incidents can be envisaged.

- (I) An incident can occur within a single facility but is contained. In this situation, following notification to appropriate authorities, it is often the responsibility of the proprietor of the facility to rectify the problem and State/Territory officials should ensure that the problem is resolved satisfactorily.

- (II) If the incident is not contained within a single facility, it is likely that management of such an incident by the State/Territory will probably require significant resources. It is essential that all aspects of the provision of those resources is detailed in an *action plan* that should be fully documented.
- (III) If the incident involves an infectious agent that causes a serious disease that could spread beyond State/Territory boundaries a *national* response may be required.

Regardless of the scale of the incident the State/Territory should be notified and will then make an assessment of appropriate action. The coordination and management of the national response has been addressed by a separate but related project (*Managing the National Response to Fisheries and Aquaculture Emergencies*, a report commissioned by FHCG and prepared by TEM Consultants for the Department of Primary Industries and Energy).

Management of an aquatic animal disease emergency will require a collaborative approach and will, primarily, involve expertise in aquatic animal disease, aquatic animal biology and aquacultural systems which would normally reside in State/Territory Departments of Fisheries or the equivalent, as well as expertise in animal diseases and epizootiology from State/Territory Departments of Agriculture or the equivalent. In some cases, this expertise resides within one department (e.g. Departments of Primary Industries and Fisheries) and coordination of the response presents little difficulty. In other cases, the expertise is not centralised and coordination of the response becomes a more complex issue.

A major achievement, clearly evident, was the bringing together of the principal operators required in the event of an aquatic animal disease emergency. In some States/Territories these meetings represented the first occasion when this had occurred for the purposes of aquatic animal disease emergency contingency planning. Hence, together with the respective roles and responsibilities, important linkages were immediately put in place and formed the basis for development of an action plan. In each State/Territory, a theoretical scenario — an aquatic animal disease emergency relevant to the particular State/Territory, was presented and worked through to its conclusion — illustrating the resources, responsibilities and roles required for effective management of the emergency.

1.4 Conclusions

In most cases, the status of the State/Territory legislation was reviewed and any gaps were identified. In general, the interaction between the various State/Territory Departments represented at the meetings and with the Working Party was very positive. The meetings were effective at re-enforcing the States/Territories' commitment to aquatic animal disease contingency planning which was evident further by the response by both government and industry at the National Aquatic Animal Disease Emergency Contingency Planning Workshop. Over the past two years and in a number of fora (e.g. National Task Force on Imported Fish and Fish Products, Task Force on Managing Incursions of Exotic Pests, Weeds and Diseases, National Aquatic Animal Disease Emergency Contingency Planning Workshop) it has been noted repeatedly that there is a severe lack of resources at not only the level of policy development but also at the operations level.

Clearly, this lack of resources has significantly slowed the pace of aquatic animal health policy development. Moreover, in the event of an aquatic animal disease emergency this lack of resources will be even more evident and the effectiveness of the response will be reduced. For example, at the State/Territory and Commonwealth levels there is such a deficiency of well-trained aquatic animal health professionals that in some agencies, if they exist at all, it is the same few officers who are responsible for policy development as well as operations. Thus, during an emergency, these people, as part of the disease control centre, would be expected to plan, coordinate and supervise as well as participate in field activities such as collection of samples and undertaking disease diagnosis.

A further issue raised during discussions with several States/Territories related to jurisdiction in the event of an aquatic disease outbreak over Commonwealth land/water within State/Territory boundaries. Under normal circumstances, responsibility for these regions/areas resides with Environment Australia (formerly the Australian Nature Conservation Agency) and is covered by Commonwealth legislation. However, since Environment Australia does not have available any animal disease expertise or related resources there needs to be mechanism to ensure that aquatic animal disease emergencies in these areas are effectively managed.

2 BACKGROUND

2.1 Introduction

One of the goals of the Animal Health Committee (AHC) Sub-committee on Fish Health (SCFH) for the period up to and including 1996 and endorsed by the Standing Committee on Agriculture and Resource Management (SCARM), was to 'draft model disease control legislation for fish' (SCFH4, 1994). To date, there is no clear national policy concerning aquatic animal diseases.— individual States and Territories are responsible for management of fisheries, including disease control, within their own borders. At that time, within each State/Territory, there was legislation That could be invoked during a serious aquatic animal disease outbreak. However, it was, and remains, unclear how effective this legislation would be should such an event occur. Moreover, it is unlikely that each State/Territory has a comprehensive, integrated action plan that identifies all available resources and would be activated during a disease outbreak. In many States/Territories, which are either heavily involved in aquaculture or are in the process of expanding their aquacultural activities, such a disease outbreak would have significant socio-economic consequences. In addition, where watersheds cross State/Territory borders it is important to have a clear understanding of the legal implications with respect to the neighbouring States/Territories. There needs to be a process by which individual and industry (private sector) and State/Territory and Commonwealth (public sector) interests are protected.

A recent incident of mortality in pilchards around the southern coast of Australia (Cox *et al.*, 1995; Crane & Hyatt, 1996; Fletcher *et al.*, 1996; Hyatt *et al.*, 1997, Whittington *et al.*, 1997) illustrated the difficulties in communications between agencies within States/Territories (i.e. at the State/Territory level) and between States/Territories (i.e. at a national level) with respect to management of aquatic animal disease outbreaks. It became clear that responses, at both the State/Territory and the Commonwealth levels, to an aquatic animal disease emergency were inadequate. Moreover, in most cases, a severe lack of resources had a significant impact on the effectiveness of the response.

One hypothesis, which has not been proven, on the origin of the herpesvirus identified in the gill tissue of affected pilchards (Hyatt *et al.*, 1997) implicated imported pilchards used as feed for farmed tuna in South Australia. Although the origin of the herpesvirus has not been elucidated the possibility that it was of exotic origin raised questions concerning the use of imported product. Consequently, this incident was one of the precipitating factors towards the establishment of the *National Task Force on Imported Fish and Fish Products* (1996), which was to review 'all relevant matters relating to aquatic uses of imported fish and fish products in Australia' and to report jointly to the Ministerial Council for Forestry, Fisheries and Aquaculture and the Agriculture and Resource Management Council of Australia and New Zealand (ARMCANZ).

The timing of the present project, which was coincident with the *National Task Force on Imported Fish and Fish Products*, was of benefit to both these projects in that aquatic animal disease outbreaks and their management gained a high profile within State/Territory and Commonwealth Governments, as well as with industry peak bodies such as the Australian Prawn Farmers Association (APFA) and the Australian Tuna Boat Owners' Association. As members of the Working Party of the *National Task Force on Imported Fish and Fish Products*, the authors received both support and valuable input from industry and government representatives, illustrating the perceived need and commitment by both public and private sectors to changes in areas related to aquatic animal health policy.

At about the same time as the pilchard mortality, the national committee structure had undergone a review and both the SCFH and ACOLF were terminated. Their responsibilities were encompassed by a newly formed committee, the Fish and Environmental Health Committee (FEHC). AHC recommended that a Fish Health Coordinating Group (FHCG) be established, assume responsibility for some of the major aquatic animal health policy matters (See Appendix 17.1 for FHCG Terms of Reference) and report jointly to SCARM and SCFA. Mechanisms to address exotic incursions into the aquatic environment were given high priority. In 1995, the FHCG commissioned a consultancy to investigate appropriate mechanisms to coordinate national responses to aquatic animal health and pest issues. The consultant, Mr Roger Jones (TEM Consultants), accompanied the authors during their interactions with aquatic animal health authorities in Tasmania and Queensland. Thus, effective communication between the various stakeholders during the development of the two projects was ensured. In this way, Mr Jones became familiar with examples of State/Territory operations with respect to their approach to aquatic animal disease emergencies, facilitating development of his project. The executive summary of the report,

Managing the National Response to Fisheries and Aquaculture Emergencies, can be found in Appendix 17.2

In addition, a SCARM Task Force on Incursion Management for Pests, Weeds and Diseases with three Sub-Committees (Animals, Fish and Plants) was established in 1996 to facilitate further development of policy dealing with animal, aquatic animal and plant diseases and pests, and terrestrial and aquatic weeds. The chair of the Fish Health Coordinating Group (FHCG) was made responsible for reporting to the Task Force on aquatic animal diseases and aquatic pests. The authors were coopted by FHCG to assist in the development of a response to the Task Force. With the assistance of the FHCG and BRS, the authors planned, organised and chaired a *National Aquatic Animal Disease Contingency Planning Workshop*, which was funded by Fisheries Resources Research Fund (FRRF). Most States/Territories had been primed by the authors' present project to the needs of contingency planning for emergency situations and the communications required for effective management of such situations. Hence, State/Territory and Commonwealth Government and industry bodies such as the Australian Seafood Industry Commission (ASIC) were enthusiastic participants at this national workshop, the outcomes of which formed the basis for the FHCG (Task Force Fish Sub-committee) report to the Task Force on Managing Incursions (Appendix 17.3) and further extends the outcomes of this project.

During the period of this project, partly due to the fostering of inter-departmental communications at the State/Territory level, changes in State/Territory legislation in various States/Territories have occurred. This communication was effected by the meetings and discussions associated with this project. In all cases, the States/Territories found the exercise extremely useful by identifying areas where there were adequate resources and capabilities and areas where there were deficiencies (for example, human resources with specialist skills). Although most States/Territories were aware of their responsibilities with respect to disease diagnosis, legislation and logistics, they were also aware that there were limitations to their capabilities.

Deficiencies in legislation and preparedness identified in this report by participants in this process should not be regarded as criticisms — especially considering the recent rapid growth of the aquacultural industries in Australia, especially in certain States/Territories, and the increasing importance of aquatic animal diseases and their control. Instead, this report should be used as a focus for subsequent improvement in legislation and preparedness as is already occurring through the development of new aquatic animal disease legislation and development of contingency plans in several States/Territories. It should be noted that while the aquaculture sectors of the fishery industry in States/Territories has been expanding there has been in many cases a contraction in State/Territory animal health services which has exacerbated the lack of resources available to aquacultural ventures.

2.2 Working Party on Aquatic Disease Preparedness Assessment: Terms of Reference

SCFH 4 recommended that VC and Advisory Committee on Live Fish (ACOLF) endorse the formation and funding of a *Working Party on Aquatic Disease Preparedness Assessment*.

Terms of Reference for the working party are:

To assess the effectiveness of State/Territory aquatic animal disease legislation in the face of a hypothetical severe fisheries disease:

1. in public waters
2. at an aquacultural site
3. in finfish and
4. in shellfish

The original reporting requirements were to:

- i. prepare a report for SCFH, AHC and ACOFL with assessment of legislative preparedness of States and provide recommendations for improvements in legislation and lines of command
- ii. produce a line of command and operations understanding for each State/Territory, to be referred to in event of aquatic animal disease emergencies, and

- iii. prepare a proposal to National Registration Authority (NRA) for the use of unregistered chemicals in emergency situations.

Subsequently, and during the course of this project, several changes in the committee structure within DPIE have occurred which has impacted on the project. For example, SCFH and ACOLF have discontinued, and so reporting will be to FHCG, and thence to VC, FEHC, SCARM and SCFA.

3.1 Introduction: Aquatic Animal Disease Preparedness in the States/Territories

Disease preparedness is an issue for both wild-caught fisheries and aquacultural facilities. Aquaculture in most States/Territories is growing with an increase in the number of aquaculture sites and an increase in the number of aquatic animal species, both vertebrate and invertebrate, being cultured. The States/Territories have recognised the importance of aquaculture as a growing and significant industry contributing to the socio-economic welfare of the State or Territory (e.g. by providing additional rural income, increased employment, regional development, increased exports). Moreover, as aquaculture grows and intensifies, the risk of aquatic animal disease increases — resulting in not only potentially serious financial losses to the industry but also possibly posing a threat to wild fisheries resources. Detection of disease is more likely in aquacultural facilities as the stock are under closer supervision than has been possible in wild-caught fisheries.

There is a need for clear and effective legislation to ensure that appropriate action such as declaration of quarantine, disinfection and, if deemed necessary, destruction of stock, takes place in a planned and orderly manner in the event of a serious disease outbreak. For many States/Territories, until recent revision of legislation, diseases of aquatic animals were not covered by existing Stock Diseases, Fisheries or other relevant Acts and Regulations. Furthermore, the recent nature of the revisions means that the new or revised legislation is, in many cases, untried and the linkages and responsibilities for advice and operations have not been adequately developed in most States/Territories.

3.1.1 Fishery Industries and Aquatic Animal Health Policy

There is a long history of fishing in Australian waters, with a wide variety of species being harvested from wild populations. The current annual value of the wild-caught fishing industry is estimated as \$12,900 million (ABARE 1996), with rock lobster and prawns accounting for almost half of production. While fisheries production has been increasing, the proportion of wild-caught product has remained more or less constant with the increase in production accounted for by aquaculture.

It is well-established that current world demand for seafood products exceeds current supply of wild-caught fish and shellfish provided by traditional fisheries. Attempts to take advantage of this short-fall have led to a tremendous expansion of aquaculture world-wide. Apart from freshwater trout, Sydney Rock oyster and pearl oyster culture, Australia is a relative late-comer into this arena. Nevertheless, in many respects, Australia is ideally placed to take full advantage of this expanding market; Australia's close trading partners in South East Asia are the world's largest market for seafood and aquacultural products and Australia has one of the largest coast-lines in the world, with a range in climates from tropical through temperate to cold-water and thus, has the potential to produce a wide range of aquaculture products. Reverse seasonality with the northern hemisphere creates additional market opportunities. As with land-based farming, Australia's isolation and strict quarantine policies have restricted the impact of diseases on aquaculture; Australia's aquacultural product has a 'clean and green' reputation and commands a premium price on the world's markets. In relative terms (dollars or tonnes), Australia supplies only 0.5% of the world's aquaculture products and thus there is a clear opportunity for further growth. On the downside, the vast majority of Australia's population is coastal, placing pressure on the coastal environment. Consequently, there is intense competition from an array of other activities for 'ownership' of the coast-line. The perceived negative impact of aquaculture on the environment is often cited as good reason to limit the growth of the aquacultural sector.

All States/Territories in Australia are experiencing an increase in the number of applications for licences for aquaculture enterprises. In the newer ventures, there are numerous small, family-type businesses with very few well-established proven companies. Although the States/Territories and Commonwealth recognise that development of aquaculture offers many benefits (economic and employment growth, additional income for the rural sector, regional development, increased exports etc). (Working Group on Aquaculture, 1994), competition for appropriation funds from other areas has restricted government support for aquaculture. An exception is the Atlantic salmon industry in Tasmania, where a successful partnership between government and industry has resulted in growth of an industry from a venture that was operating at a loss during the 1980s to one that is currently yielding a profit of some \$60 million p.a. This bottom-line is expected to grow to \$100 million by the year 2000. The principal Tasmanian product is fresh, chilled (not frozen) Atlantic salmon, 50% of which is exported to Japan, while the rest supplies the

domestic market, mainly up-market, urban restaurants. The industry provides significant employment and is an important source of income for the State.

Historically, the rate of development of Australian aquaculture has exceeded the development of appropriate aquatic animal health policy (legislation and regulation) and operations (diagnostic and research services) to support these industries. Although government (State/Territory and Commonwealth) policy for aquatic animal health is currently under development, it is lagging behind equivalent policy development for terrestrial animals. Nevertheless in recent years — due in part by activities such as this and other related projects — there has been very significant progress in this area.

One characteristic of aquatic animals is associated with the diverse nature of the Australian environment. Aquatic animals have specific temperature ranges (being poikilothermic) and also specific environmental ranges (for example, marine versus freshwater). Rather than only a few major species, there is thus a diverse range of aquatic species and aquaculture in each State/Territory is based on its own range of species. Each State/Territory, depending on its specific climate and environment, has a different range of aquatic animals (wild and farmed) and hence a different range of husbandry operations and disease problems. Hence, there is a diverse range of diseases, some of which are common to several States/Territories while others are peculiar to certain States/Territories.

As fisheries industries (including aquaculture) have developed throughout Australia, different needs have become apparent due to the various species and husbandry systems involved. The priority given to the sectors in each State/Territory also varies with the relative size, or potential size of the industry compared to other industries. Other factors, such as organisational structures within the States/Territories and the relative size of other industries, may also play a role in setting this priority. Recently, several States/Territories have made an active effort to establish or augment newer (especially aquaculture), fisheries enterprises for example tuna ranching in South Australia.

As well as the food-based fishing and aquacultural industries, large industries are based on recreational fisheries and raising fish for the pet (aquarium or ornamental fish) trade. Australia's geographical isolation has led to the development of a largely unique aquatic fauna of great importance to the nation both financially and ecologically. Although it is encouraged to take advantage of these opportunities to enhance the welfare of Australians, such enterprises should be undertaken in a responsible, sustainable and environmentally friendly manner that in turn requires appropriate legislation and regulations.

3.1.2 State/Territory Departments of Agriculture vs Departments of Fisheries

Historically, State/Territory veterinary services (tasked with control and passive surveillance of animal diseases) have developed within the Departments responsible for Agriculture. However, in many States/Territories, aquaculture — which primarily requires expertise in fish biology, ecology and husbandry techniques — has historically come under the care of Departments responsible for Fisheries. Generally, Fisheries Departments have developed to manage wild-caught fisheries and recreational fisheries resources, and the intensification associated with aquaculture is a relative late-comer to their brief.

The greater focus on disease status of aquatic animals associated with the development of 'farmed' aquatic animals has been a new challenge to be faced by the State/Territory Departments. Several approaches have been used to bridge the gap between fisheries knowledge and veterinary knowledge. Several State/Territory Departments hold both areas within the same portfolio so cross-links have been readily developed. In other States/Territories where the two areas fall into different portfolios, the approach has been either to form links between departments or to operate independently of each other.

Officers involved in State/Territory technical services and policy roles have also had to adapt rapidly to new technologies with little formal training. Generally "fish biologists" had little, if any, training in diseases and associated technologies and veterinarians received little training in fish biology and medicine. The professional officers now employed in each State/Territory often represent a phenomenon that has developed during the past 10 years. Most of these officers received most of their training 'on the job'. This development stage is now changing with several tertiary institutions within Australia offering specialist training in both aquatic animal diseases and aquatic animal biology.

For effective management and control of aquatic animal disease emergencies, it does not matter where the ultimate responsibility resides. However, it is essential that there is good communication between

disease experts (who usually reside in the Departments of Agriculture) and fisheries/aquaculture experts (who usually reside in the Departments of Fisheries). Clearly, legislation needs to empower the agency with ultimate responsibility to ensure effective control and management of the disease emergency situation. In the event of a disease emergency, industry consultation is desirable since, in the face of limited government resources, its cooperation is required. As major stakeholders, industry should be involved in the development of contingency plans. As beneficiaries of any disease emergency management, industry should also expect to contribute to the funding required.

3.1.3 An International Focus on Aquatic Animal Health

Australia is not the only country which has experienced a need for rapid development of policy for aquatic animal diseases. Over the past decade, many aspects of aquatic animal disease legislation, reporting and control have been addressed and adopted by significant segments of the international community. The *Office International des Epizooties* (OIE) has included fish and shellfish diseases in its notifiable disease lists. The European Union has also formalised protocols for reporting and, in some cases, control of diseases of aquatic organisms. Further information on international developments can be found in Appendix 17.4.

3.2 Disease Emergency Action Plans

Traditional livestock industries have played and continues to play a significant role in Australia's socio-economic development. Thus infectious disease of livestock presents a serious threat. In recognition of the vulnerability of farmed animals (and therefore the associated industries) to major exotic diseases the Commonwealth Government in association with the States/Territories and industry initiated production of formal contingency plans, AUSVETPLAN, for those livestock diseases deemed to threaten the associated industries and hence the economic welfare of Australia. Subsequently, the EXANDIS program managed the revision and production of further manuals, with the second edition being released in 1993, including detailed field manuals and training videos.

Due to its perceived lower priority in the past, the production of equivalent plans for aquatic animals and aquatic animal diseases did not take place. In today's economic and policy climate, funding to support the development of such plans is scarce. With the further development of less traditional fishery industries, the profile of aquatic animal diseases has increased and the development of contingency plans has become a higher priority both at the State/Territory level and the Commonwealth level.

Current interest, especially from industry bodies, in developing plans for specific sectors is high. Recent disease outbreaks (e.g. in pilchards and prawns) has not only fuelled this interest but also highlighted the problems associated with the management of disease emergencies of aquatic animals and the need for rapid development of specific aquatic animal health policy. An industry-funded project is currently developing operational frameworks for disease control (Fisheries Research and Development Project 97/214).

3.3 Legislation

Legislation related to the aquatic animal health area tends to be either under-developed, in the process of development, or being revised. During the process of development, it would seem appropriate that those States/Territories, at least, with common watersheds or common open waters should have legislation that is consistent between the States/Territories involved (c.f. Kaney, 1987). Similarly, since diseases are not limited by State/Territory boundaries, there should also be a consistent approach to disease management. Clearly, some States/Territories are further developed than others in their preparedness to manage aquatic animal disease emergencies with respect to legislation and contingency planning, and this probably reflects the stage of development of the fishery industries within the individual States/Territories. For a coordinated effort in the face of an emergency, it is important that individual States/Territories have similar approaches to management of aquatic animal disease emergencies.

4 OBJECTIVES

SCFH formulated the following project objectives as listed in the original application:

1. To assess the current aquatic animal disease legislation in each state, territory and New Zealand.
2. To recommend improvements in the current legislation and lines of command in the event of a serious aquatic animal disease outbreak; and
3. To determine the requirement for chemicals and vaccines for use during a aquatic animal disease outbreak.

Due to the reorganisation of the committee structure for the management of animal health at the national level, the visit originally planned for New Zealand was cancelled.

In addition, the issue of the use of chemicals in aquaculture is now the subject of a separate project. As part of that project, a workshop on the use of chemicals in aquaculture was held in Canberra (August 1996). Dr Steve Percival as coordinator of the workshop on the use of chemicals in aquaculture, participated in the Aquatic Animal Disease Contingency Planning Workshop and presented a progress report. A summary of the proceedings of the aquaculture chemical registration seminar can be found in Appendix 17.5.

Apart from these two changes the project objectives have been achieved. In every State and Territory, the profile of aquatic animal disease preparedness has been raised such that new or amended legislation has been introduced or is being prepared. This project, with related projects at the State/Territory level and the Commonwealth level, has helped to progress the development of policy for aquatic animal health at both the State/Territory and Commonwealth levels.

In addition, roles, responsibilities, lines of communication, and resources required in the face of an aquatic animal disease emergency have been identified and discussed with State/Territory agencies. All States/Territories are now committed to further development of contingency plans for aquatic animal disease emergencies.

Because this project is unlike a traditional laboratory, or field-based research project, there are no extensive methods and technologies used to address the objectives. As outlined below, the approach taken appeared to be effective from the very start and required little modification during the course of the project.

The authors arranged meetings with officers responsible for activation of aquatic animal disease legislation for each State, Territory or Commonwealth agency. In most States/Territories this involved, at least, the Chief Veterinary Officer, Director of Fisheries/Aquaculture, and Aquatic animal Pathologists. In most cases the authors made contact with the Aquatic animal Pathologist of the State/Territory/organisation so that a meeting could be arranged with all relevant 'players' in each State/Territory. In this way, relevance to the circumstances of each organisation or State/Territory was ensured. Hence numbers of attendees varied with the needs and/or interest in each State/Territory or organisation.

Discussions were held over a period of one to two days, using a number of directing questions (Appendix 17.6) to help define the legislative powers and organisational structures within each State/Territory. A scenario relevant to the specific State/Territory was then posed to illustrate the strengths and weaknesses peculiar to each State/Territory in the event of an aquatic disease emergency. A graphical representation was prepared during the latter stages of the meeting to clarify organisational structures and linkages within and between the various agencies/organisations in each State/Territory, and their relevance to a national context (Figure 1). As needed, the authors provided advice on approaches being developed in other States/Territories to enable the participants to review their own approaches.

To ensure accuracy, draft reports were forwarded to State/Territory authorities and other relevant agencies for their review and comment, before preparation of this final report.

6 RESULTS: STATE/TERRITORY REPORTS

6.1 SOUTH AUSTRALIA

6.1.1 Introduction

6.1.1.1 Current Operations

South Australian fisheries production includes crustaceans (mostly rock lobster and prawns), molluscs (mainly abalone) and various finfish. In addition, there are aquaculture operations which include production of farmed yabbies, marron, oysters, abalone, salmonids and farmed southern bluefin tuna which tend to be high value, niche market products.

Recent estimates (ABARE 1996) value South Australian fisheries production at \$186 million of which rock lobster accounts for approximately one third of this total and aquaculture close to \$50 million. The aquaculture total includes southern bluefin tuna valued at around \$40 million.

6.1.1.2 Disease Threats

Aquaculture operations utilising intensive production techniques which, under certain conditions, can precipitate disease outbreaks and facilitate disease spread. To date, there have been few aquatic animal emergencies (c.f. 1996 tuna mortality) but, as aquaculture operations expand, it is inevitable that disease occurrences will increase and preparedness for the inevitable is desirable. Moreover, there are a number of known serious diseases, especially of oysters (various parasitic diseases) and salmonids (e.g. the exotic diseases furunculosis, viral haemorrhagic septicaemia) which would have a serious negative impact on the industry.

The recent mortality event in which upto 50% losses (with a conservative estimate of the value at \$20 million) of farmed southern bluefin tuna occurred was not an infectious disease outbreak. However, it emphasised the need for a high level of aquatic animal disease preparedness of which well-considered and practised contingency plans are an integral part.

6.1.2 Situation Report

The response of South Australia to this project was enthusiastic and encouraging. The meeting was well-attended and included the State CVO, the Chief Veterinary pathologist, the Manager of Aquaculture and a senior fisheries officer (see Appendix 17.7.1 for a record of the meeting). However, South Australia was one of the first States to be visited by the working party and since that time there have been quite significant changes to the State personnel and the management systems. The following report attempts to provide an overview of the current situation.

6.1.2.1 Legislation

Until recently, control of exotic fish and aquatic animal diseases was covered by the *Fisheries Act 1982*. A list of notifiable diseases of aquatic animals is provided under the Act's Regulations. In addition, the Act and Regulations appeared to provide comprehensive powers of disease control including quarantine, treatment and slaughter. Other legislation, the *Stock Diseases Act 1990*, is the primary legislation concerned with control of diseases, including exotic diseases. The Act covers domestic animals and birds but not escaped or feral animals of the same species nor aquatic animals which are not included as 'stock' under the Act.

These powers have been rationalised by the introduction of new legislation to be proclaimed in 1997, the *Livestock Act 1997*, which, in addition to control of "stock diseases", will include control of aquatic animal diseases.

6.1.2.1.1 The Livestock Act 1997

The rationalisation of the legislation by introduction of a more encompassing Act, the *Livestock Act 1997*, under which management of disease outbreaks of both "stock animals" and "aquatic animals" are regulated can be viewed as a major improvement.

6.1.2.2 Infrastructure

Primary Industries South Australia (PISA) is the authority which has the legislative responsibility for the control of an exotic or severe disease. Within the Department of Primary Industries, VetLab provides a diagnostic service for all livestock including farmed aquatic animals. A full-time aquatic animal pathologist is considered a high priority and, recently, resources to fund such a position have been made available. Currently, local government is working with industry in an attempt to develop a funding model to provide animal health services in support of aquaculture activities. However, aquaculture is perceived as a competitive activity to fisheries confusing the issue of State (appropriation) funding vs. cost recovery. In reality, aquaculture is a young, developing industry with considerable potential to grow into a significant asset for the State. It could be argued that government assistance for this developing industry would represent an investment by the State which in the longer term would be mutually beneficial.

Furthermore, it is noted that the various activities [field services, policy, laboratory services and research] essential for efficient provision of veterinary services are fragmented into sub-organisations [Animal Health, VPS/VetLab (commercial provider of veterinary services, Fisheries, Aquaculture (recent restructuring has created Fisheries and Aquaculture as two separate groups within PISA), South Australia Research & Development Institute (SARDI)] within the State department. As a consequence, there is a need to coordinate responsibility for responses to aquatic animal health emergencies. For example, in order to provide the best possible diagnostic service a certain amount of research and development is required and should involve input from diagnosticians to ensure the best possible outcome. As a consequence of recent State Government policy to outsource diagnostic services personnel have left the organisation including many of the participants in the meeting.

Due to the number of diagnostic and research laboratories used by the aquaculture industries as points of contact, procedures for disease reporting were considered problematical. Although primary diagnosis is the responsibility of VetLab (now - VPS), due to limited resources other laboratories are often used by industry. These other facilities may not have a good understanding of the State's responsibilities with regard to disease reporting and there is a lack of good communication between the various diagnostic services providers. There is a need to identify clearly VetLab as the central reporting laboratory to where all information concerning disease outbreaks should be communicated in a timely manner.

The discussions were particularly useful in identifying those areas where practices and resources were adequate in addition to those areas where it was recognised that, currently, there are weaknesses which the State needs to address. As in other States it was often a matter of inadequate resources (e.g. too few personnel with expertise in aquatic animal disease matters) due to the recent rapid expansion of aquaculture industries within the State. Recently, State funding for extra personnel dedicated to aquatic animal health has been approved.

6.1.2.3 Recent Developments

As alluded to, since the original meeting (December 1994) there has been significant developments in the legislation and structure within PISA which impacts on aquatic animal disease response. The Government of South Australia has recently committed \$5.2 million to the development of the farmed seafood sector. Provision has been made for the establishment of a Fish Health Service to progress a fish health management framework.

The roles and responsibilities, as related to fish health, of the PISA Aquaculture Group, PISA Fisheries Group, SARDI and VPS/VetLab are to be subject of a major review.

6.1.3 Conclusions

The State personnel were very cooperative and were appreciative of the need to strengthen the links between the relevant State Departments and with the Commonwealth. A major positive outcome was greater awareness of State personnel concerning the roles and responsibilities of the various State Departments and the importance of aquatic animal disease preparedness development.

Of some concern is the disperse nature of the services related to aquatic animal health. For example, under the Minister for Primary Industries there are two separate organisations viz. Primary Industries South Australia (PISA) and the South Australian Research and Development Institute (SARDI). Within

SARDI there is a Fisheries group and although SARDI is concerned mainly with research it is difficult to separate some diagnostic and research activities. For example, in-depth disease investigation and research should be an integral part of the process to develop expertise pertinent to the newer aquaculture animal species and their diseases and, moreover, may be considered essential for the development of reliable diagnostic procedures. Likewise, within PISA, there are separate areas such as Fisheries (wild), Aquaculture (farmed fisheries) and VetLab (aquatic animal disease diagnosis) each involved with aspects of fisheries and aquatic animal diseases with no clear boundaries for the respective roles and responsibilities. Without clear definitions of roles and responsibilities within the organisation it is possible that duplication of effort in some areas and in other areas there will be no effort at all (recent restructuring - see section 6.1.2.3 above - is attempting to address this problem. In broad terms SARDI is responsible for research, VetLab/VPS for diagnosis and PISA for policy and management). Superimposed on this State structure is a network of other aquatic animal health providers such as private veterinary services and other institutes such as the universities and colleges.

6.1.4 Summary

The new *Livestock Act 1997*, to be proclaimed in 1997, provides the State with good legislative powers for the management of aquatic animal disease emergencies. Within the various sections of PISA concerned with fisheries, there is now a better understanding of the roles and responsibilities of the State and the interactions between fisheries professionals and animal health professionals required to provide effective management of aquatic animal disease emergencies. It is critical that industry and private aquatic animal health providers understand the role of VPS/VetLab and PISA Aquaculture as the central reporting agencies. Without this understanding of the various roles and responsibilities, effective management of aquatic animal disease emergencies could be compromised.

6.2 WESTERN AUSTRALIA

6.2.1 Introduction

6.2.1.1 Current Operations

Western Australia fisheries production is dominated by rock lobster and pearls but also includes prawns and scallops as other significant products.

Crustacean products account for approximately 50% of the total value (approx. \$500 million) of fisheries production with the rock lobsters valued at approximately \$226 million and prawns worth around \$50 million. Mollusc production (mostly abalone and scallops) is valued at \$46 million and fin fish production is similar at around \$47 million. Of the aquaculture products (total value of \$125 million), pearls account for \$121 million (ABARE 1996).

6.2.1.2 Disease Threats

There are relatively few known diseases of the two major products from Western Australia, i.e. rock lobster and pearl oysters. However, due to the size of these sectors, an outbreak of a serious disease problem would have very significant negative impacts on the industry.

6.2.2 Situation Report

Since the early date of the Western Australia meeting there has been a change in the State personnel responsible for administering legislation concerning aquatic animals and aquatic animal diseases. A record of the meeting is contained within Appendix 17.7.2. Recent discussions with the State officers in Western Australia indicate that despite changes in personnel there remains a strong commitment to aquatic animal disease emergency contingency planning.

6.2.2.1 Legislation

Subsequent to the visit to Western Australia new legislation has been introduced which essentially covers all animals including aquatic animals.

Aquatic animal diseases are covered by the *Stock Diseases Regulations Act 1968* in WA. The regulations pertaining to the Act have been re-drafted as have the regulations under *the Pearling Act 1990* through the *Pearling Act (General) Amendment Regulations*. There have also been changes to the *Enzootic Diseases Regulations*. Other legislation pertinent to issues raised are the *Fisheries Resources Management Act 1994* and the *Exotic Disease of Animals Act 1993*.

6.2.2.1.1 The Stock Diseases Regulations Act 1968

At the time of the first meeting the *Stock Diseases Regulations Act (1968)* was in use, however the discussions were used in the further drafting of the new Act which is now empowered.

Under the *Stock Diseases Regulations Act 1996* the State CVO is empowered to control any real or suspected disease outbreak, order stock into quarantine and can require stock to be tested before importation to the State. The Act can apply to aquatic animals but only those gazetted as “stock” under the Act. Currently, this includes most aquaculture species. Notifiable diseases of aquatic animals (see Appendix 17.10) include an “exotic disease” list and a list of diseases which are of “special significance to the State”. The Act applies to both land and water. There is a good understanding between the CVO and the Manager of Fisheries for communication in the event of a disease event.

6.2.2.1.2 The Fisheries Resources Management Act 1994

The *Fisheries Resources Management Act 1994* is not intended for direct use in the event of a disease outbreak, however its powers can be used to restrict the transport of aquatic animal species through the State and to require cleaning of fishing equipment.

6.2.2.1.3 The Exotic Disease of Animals Act 1993

The *Exotic Disease of Animals Act 1993* has broad powers and is designed to enable control of exotic diseases within the State. The Act lists the 12 major “cost-sharing” terrestrial exotic diseases, however other, aquatic animal diseases can be included quickly by the Minister, if necessary, through the gazetting process. The Act applies to both land and water.

6.2.2.2 Infrastructure

The ties and understanding between the Department of Agriculture and the Department of Fisheries appeared strong and well-practiced. The two Departments operate under the same Minister and so communication is encouraged. Communication is further facilitated by the Aquatic animal Pathologist who is an employee of the Fisheries Department being based within the central diagnostic laboratory of the Department of Agriculture which is at the same site as the State CVO.

A list of notifiable diseases has been produced and agreements and lines of communication have been developed between the two Departments which enable Fisheries input into the control of a aquatic animal disease occurrences to be coordinated by the CVO using the *Stock Diseases Act Regulations Act 1996*. There is understanding between the CVO and the Manager of Fisheries as to the roles each plays in the event of a disease outbreak, and lines of communication for decision making are agreed.

The subject of disease contingency planning is being actively addressed between government and some segments of industry. There is currently a contingency plan in draft form addressing the pearl oyster industry.

Within the State agencies, there are several field officers, involved in aquaculture, who provide passive surveillance for disease in their areas. Moreover, the aquatic animal health service has been instrumental in providing a surveillance program for the pearl oyster industry. To facilitate disease control, the Aquatic animal Pathologist is both a “Stock Inspector” and a “Pearling Inspector”, with all the powers of such people under their respective Regulations.

The State plans to use personnel and infrastructure from Departments of both Fisheries and Agriculture in the event of a disease emergency, with the majority of the work-force provided from Fisheries staff but working cooperatively with Agriculture staff in areas such as emergency management and epizootiology. As alluded to, the aquatic animal pathologist, although employed by Fisheries, is situated within the central animal health laboratories of the Department of Agriculture, an arrangement which facilitates provision of peer support of allied professionals which is essential, especially in a disease emergency situation. There are two technical officers supporting the one Aquatic animal Pathologist. The CVO is also located within this campus so communication lines are facilitated.

The participants recognise that although there are good reserves within the fisheries service to provide staff for a control program, the specialist aquatic animal health unit is quite small being limited to one scientist and one technician which, in the event of a disease outbreak, could be a limiting factor, certainly in the short-term. However, due to the positioning of the unit within the Animal Health laboratory there is the possibility of allied professional backup being readily available.

Further training of Fisheries staff is being considered by including them in terrestrial animal training to provide more fisheries-trained staff with an understanding of the principles of disease control. Moreover, further investigation into inclusion of other emergency personnel into plans was to be undertaken. As has been noted in reports for other States/Territories, there are limited numbers of specialist aquatic animal health professionals available within Western Australia. In the event of a major disease emergency it would be difficult for the aquatic animal health personnel to ‘cover all bases’.

6.2.3 Conclusions

The staff interviewed were most helpful and regarded the ongoing development of aquatic animal disease preparedness as a high priority. Although Dr. M. Hine has been replaced by Dr. B. Jones as the State aquatic animal pathologist, recent informal discussions with both Dr. Jones and Dr. Edwards, CVO, Western Australia, have confirmed that the situation of cooperation between the two Departments (Fisheries and Agriculture) still occurs and is developing further.

6.2.4 Summary

The legislation and communication links between the Department of Fisheries and the Department of Agriculture in Western Australia are well-developed. The staff responsible for the area of aquatic animal disease control and exotic disease control are pro-active in planning for this occurrence. Progress in this area is on-going but limited due to a lack of resources.

6.3 TASMANIA

6.3.1 Introduction

6.3.1.1 Current Operations

Tasmanian fisheries production (total value of \$180 million) is dominated by rock lobster valued at \$47 million, abalone valued at \$49 million and in the aquaculture sector by Atlantic salmon (approx. value of \$59 million) and oysters valued at \$10 million (ABARE 1996).

6.3.1.2 Disease Threats

Due to the intensive nature of the aquaculture sector, diseases of Atlantic salmon (and other salmonids) and oysters would be of most concern. This concern is reflected in the lists of notifiable diseases of aquatic animals included in the State Regulations.

6.3.2 Situation Report

The response of Tasmania to this project was outstanding which is a reflection of the strong commitment to contingency planning for aquatic animal disease emergencies and the importance of fisheries industries to the State. A record of the meeting is documented in Appendix 17.7.3. Several State officers attended the meeting and the outcomes were considered highly relevant since Tasmania were already in the process of developing contingency plans for aquatic animal disease emergencies. In this respect it was also useful that Mr. Roger Jones, TEM Consultants, participated in the meeting to introduce his project and activities with respect to the further development of aquatic animal disease management at the National level rather than the State/Territory level which is the focus of this project.

6.3.2.1 Legislation

The *Animal Health Act 1995* and the *Inland Fisheries Act 1995* are recent legislation which supersede previously existing Acts such as the *Salt-Water Salmon Culture Act 1985* and, at the time of the meeting, were about to be implemented. Thus, discussions at the meeting related to the new legislation rather than the then current Acts.

6.3.2.1.1 The Animal Health Act 1995

The *Animal Health Act 1995* covers all animals (including aquatic animals, molluscs and bees etc.) and animal diseases in general. There is no definition of severe disease but the Act encompasses exotic disease and enzootic disease situations. The definitions of "fish" and "disease" under the Act are very broad; there are a number of disease categories:

List A

All diseases exotic to Australia and/or Tasmania and are reportable immediately.

List B

All diseases enzootic in Tasmania which are in need of control and which are reportable.

New Disease

Any disease which is not, at that time, known to occur in Tasmania.

Unknown Disease

Any disease where the type of disease or cause of disease is unknown or not recognised. Even where no "recognised disease" is suspected, action such as quarantine can be taken immediately by a DPIF Officer, provided that officer has been appointed by the Secretary of DPIF, as an inspector under the Act.

Thus the new legislation recognises the importance of aquatic animal diseases and the need to control the movement of aquatic animals or order their treatment or destruction. Under the new Act, which reflects the importance of aquatic animal and shellfish aquaculture to the State, all animals are treated equitably.

6.3.2.1.2 The Inland Fisheries Act 1995

The Inland Fisheries Act 1995, implemented 1 June 1996, is not intended for use in the event of a disease outbreak but rather deals with movement of aquatic animals into and within the State. Under the Act, it is an offence to possess noxious aquatic animal species (this is actually in the *Living Marine Resources Act 1995*, Part 5, Division 5). The *Inland Fisheries Act* is concerned with control fish and it is illegal, without the written consent of the Inland Fisheries Commission, to introduce into the State any aquatic animal species which is capable of living and breeding in Tasmanian inland waterways. The *Living Marine Resources Act* has legislation to cover the introduction of noxious fish into Tasmanian marine waterways.

6.3.2.2 Infrastructure

Fisheries and Agriculture are combined in one Department - the Department of Primary Industry and Fisheries (DPIF) - which has a central diagnostic facility, Mount Pleasant Laboratory at Kings Meadows, Launceston. Head Office is located at Hobart. Thus, diagnostic services for aquatic animal diseases are fully integrated in the State's central diagnostic and research facility. The laboratory diagnostic services have well-developed pathology and bacteriology facilities; aquatic animal samples for virology are forwarded to the AAHL Fish Diseases Laboratory (AFDL). Primary diagnosis is the responsibility of DPIF and there is an excellent understanding and working relationship with AAHL for exotic disease diagnosis.

There are good communication lines between DPIF and other State agencies and a general understanding of each of the agency's roles in the event of an aquatic animal disease emergency. However, it is recognised that formalisation of these procedures within a documented action plan will ensure clarification of the roles of each agency and facilitate implementation of the action plan during an emergency situation.

Under the new Act, the Office of the CVO has legislative responsibility for the control of exotic or severe diseases of animals including aquatic animals and has broad powers including declaration of a number of different categories of controllable areas (see Act for details). Fisheries and disease expertise reside within the same Department (DPIF) and therefore communication and co-ordination of activities during an emergency situation would be greatly facilitated. There are 4-5 veterinarians with epidemiology skills who would be available to supervise and coordinate activities. Thus there exists within the Department expertise and capability to establish and operate a Local Disease Control Centre (LDCC).

The new *Animal Health Act* covers all State territories, including up to the 200 nautical mile limit to the south of Tasmania as detailed in the *Off-shore Constitutional Settlement Agreement* with the Commonwealth, which includes management of marine resources. Although this agreement is in place it is clear that the responsibilities covered by the State and by the Commonwealth are not fully understood and that liaison with the appropriate Commonwealth officer (within DPIE, Canberra) is recommended to clarify State and Commonwealth responsibilities.

In addition, it is notable that the State and industry are pro-active in the joint development of aquatic animal disease preparedness including action plans in the event of a serious disease outbreak. There is a good understanding of the responsibilities with regard to disease reporting. Also, the State Authorities, in collaboration with the salmonid aquaculture industry, have instigated a Salmonid Health Surveillance Program, funded in part by industry. Sampling and laboratory testing is undertaken by staff at DPIF and also utilises the resources at AAHL for the virology component. Recently, it has been proposed to include surveillance of wild fisheries in the program. There is also a surveillance program for Pacific oysters, the other major aquaculture species. Other sectors within fisheries are not as well organised, as yet, but education of these sectors forms part of the overall contingency planning agenda.

It is anticipated that aquaculture will continue to grow in Tasmania, for example, farmed Atlantic salmon production is expected to be as high as 10,000 tonnes liveweight by the year 2000 (see Brown *et al.*, 1997). As alluded to, DPIF has a good cooperative relationship with the industry and, together, they have been pro-active in regard to disease contingency planning. In 1994, a workshop on the prevention and response to disease emergencies in aquaculture in Tasmania was sponsored by the Tasmanian Fish Health Advisory Committee, SALTAS, the Tasmanian Oyster Research Council, DPIF, the School of Aquaculture (University of Tasmania) and the Inland Fisheries Commission (one of the authors (MC) participated in this workshop). A summary of the proceedings is attached (Appendix 17.8). Subsequently,

DPIF has progressed development of documented Fish Health Emergency Management Plans which are now in place.

6.3.3 Conclusions

The number of State personnel which attended the meeting is a reflection of the high priority aquatic animal disease preparedness has in Tasmania. There is continued communication and interaction between the industry, State authorities and Commonwealth authorities with respect to the further development of aquatic animal disease contingency plans in Tasmania.

It was exceptionally useful having Mr Roger Jones attend this meeting to present to Tasmanian authorities draft recommendations on managing the *national* response to fisheries and aquaculture emergencies. Thus the State could consider these recommendations and their integration during the further development of any State disease emergency plans. In addition, Roger Jones obtained first-hand knowledge on the type of approach to contingency planning from a State with a high commitment to such planning for aquatic animal disease emergencies.

6.3.4 Summary

Tasmania is addressing the issue of contingency planning in a well-organised manner which involves broad consultation with industry, with State authorities and with the Commonwealth Government. As in all States, funding is a limiting factor and thus progress may not be as advanced as government and industry would have desired.

6.4 VICTORIA

6.4.1 Introduction

6.4.1.1 Current Operations

Victorian fisheries production is valued at approximately \$80 million of which more than half is accounted for by molluscs of which abalone is valued at around \$37 million. The aquaculture sector is worth approximately \$9 million and is dominated by salmonids (mainly trout) which are valued at around \$6 million (ABARE 1996). Mollusc and crustacean aquaculture is valued at approximately \$0.5 million each (ABARE 1996).

6.4.1.2 Disease Threats

Victoria has a salmonid recreational fishery and freshwater aquaculture industry. These sectors would be at risk to various salmonid diseases some of which are included in the notifiable animal disease list. The majority of wild-caught fishery is marine and includes both finfish and shellfish, particularly scallops and abalone. Shellfish aquaculture is a relatively small sector but with growth potential.

6.4.2 Situation Report

The meeting was attended by the State CVO, Manager of aquaculture and the chief veterinary pathologist and a record of the meeting is documented in Appendix 17.7.4.

6.4.2.1 Legislation

6.4.2.1.1 The Livestock Disease Control Act 1994

With the introduction of recent legislation (*Livestock Disease Control Act* and the *Fisheries Act 1995*), Victoria is provided with clear and comprehensive powers for the management of aquatic animal disease emergencies including the power to declare protected and quarantine areas, to authorise treatment, disinfection, control of movement and destruction of livestock.

With the agreement of the Fisheries Department, fish and shellfish have been included in the definitions of 'livestock' under the Act. Historically, aquatic animal diseases were part of the *Fisheries Act, 1968*. In 1994, agreement was reached between the then separate Department of Conservation and Environment (Fisheries) and the Department of Agriculture as to interim action in the face of disease outbreaks until the new Act was proclaimed in 1995. It is planned to review the notifiable disease list which is part of the Regulations of the Act.

Exotic diseases of finfish, crustaceans and molluscs, require immediate notification under current legislation. Such diseases include bacterial (e.g. BKD), viral (e.g. IHN, SVC) and parasitic (e.g. whirling disease) diseases of salmonids, fungal diseases of crustaceans (e.g. crayfish plague) and viral (e.g. iridovirus) and parasitic (e.g. marteiliosis) diseases of molluscs. Other diseases of salmonids (e.g. EHN) and molluscs (e.g. bonamiosis) which are enzootic to Victoria require notification within seven days. It is noteworthy that IPN, an exotic viral disease of salmonids, does not appear on the list of notifiable diseases. Action to rectify this situation is underway.

6.4.2.1.2 The Fisheries Act 1995 and The Wildlife Act 1975

The *Fisheries Act 1995* and the *Wildlife Act 1975* are concerned with management of wildlife resources and are not designed for use in the event of aquatic animal disease control.

6.4.2.2 Infrastructure

The Department of Natural Resources and Environment now includes both Fisheries and Animal Health areas, however, at the time of the interview, the sections were in different Departments. The amalgamation has made little alteration to the arrangements as ties in regard to aquatic animal health already existed between the Departments. Funding for a position of aquatic animal health officer has been provided by Fisheries in the government animal health laboratory since 1992. A full-time aquatic animal health technician is based in north-east Victoria and provides field surveillance capabilities including a fish

health accreditation scheme based on surveillance in the majority of the State's freshwater aquaculture facilities. There appears a good understanding between the CVO and Fisheries and Aquaculture managers as to their roles in the event of a disease outbreak. Moreover, there is a good relationship between Fisheries/Aquaculture and Agriculture and between State Authorities and Commonwealth Agencies (AAHL, DPIE/AQIS) with a clear understanding of the State's responsibilities with regard to disease reporting.

The operational and laboratory areas of the fisheries and animal health services are currently undergoing restructuring into business units. Currently, disease diagnostic, health certification and specialist advisory services are provided to the Division of Fisheries by the Victorian Institute of Animal Science under a service agreement. Negotiation will be required to ensure current services are maintained under the new structure.

6.4.3 Conclusions

Expertise and resources for the management of disease emergencies within the Department of Agriculture would be readily accessed in the event of an aquatic animal disease emergency. Control and management of the disease outbreak would be undertaken as a joint effort between Fisheries and Agriculture and coordinated through the Office of the Chief Veterinary Officer.

6.4.4 Summary

There was a clear understanding between Fisheries and the Chief Veterinary Officer as to the roles required in the face of an aquatic animal disease occurrence.

The *Livestock Disease Control Act 1994*, is a relatively recent Act designed specifically for the control of animal disease and has strong powers of quarantine and investigation. Aquatic animals are considered "livestock" under the Act and thus diseases of aquatic animals are covered by the Act.

6.5 QUEENSLAND

6.5.1 Introduction

6.5.1.1 Current Operations

Queensland fisheries production is valued at a total of \$228 million of which \$100 million is accounted for by wild-caught prawns and crabs and approximately \$50 million by a range of fin fish species. Scallops also provide a significant income. The aquaculture sector is worth approximately \$45 million and is dominated by farmed prawns valued at approximately \$30 million. Other aquaculture species include barramundi (ABARE 1996).

6.5.1.2 Disease Threats

In Queensland, a major concern involves the various viral diseases of prawns and other crustaceans. Due to the recent rapid expansion of prawn aquaculture, world-wide including Australia, there has been a number of new or emerging diseases of the various penaeid species used in aquaculture and which are of viral aetiology. These viral infections may or may not lead to serious disease outbreaks; the viral agents are not well-characterised; diagnostic techniques are not well-developed; the epizootiology of these diseases is not well-understood; consequently, the response to outbreaks of these or similar viral infections cannot be well-defined. The lack of diagnostic tools for viral diseases of prawns is a serious obstacle to effective disease management (Crane & Bernoth, 1996). The need for diagnostic tools for viral diseases of prawns is being addressed by a number of research projects involving QDPI, James Cook University, AIMS and CSIRO.

6.5.2 Situation Report

In addition to the main meeting held at QDPI Head Office, Brisbane, other supplementary meetings were arranged with the Manager, Diagnostic Laboratory, Animal Research Institute (ARI), Yeerongpilly and also with staff at universities such as University of Queensland, Brisbane. The main reason for this arrangement was, due to the size of the State, agencies other than QDPI may be involved in disease investigations and need to be made aware of developing aquatic animal health policy. Appendix 17.7.5 is a documented record of meetings held in Queensland.

6.5.2.1 Legislation

Recently, the State has reviewed its legislation with regard to fisheries and aquatic animal diseases; the *Fisheries Act 1994* and the *Fisheries Regulations 1995* provide the legislative power to control movement and release of aquatic animal and aquatic animal products into and within Queensland as well as various aspects of aquatic animal disease management.

6.5.2.1.1 The Fisheries Act 1994

Importation, possession, rearing, selling and buying of noxious or non-indigenous aquatic animal and aquatic animal products are well-controlled under the *Fisheries Act 1994*. In addition, under the Act, the State is empowered to control aquatic animal disease outbreaks through the declaration of diseases, quarantine areas, emergency quarantine situations, stock treatment or destruction. Currently, there is no list of notifiable diseases of aquatic animals (NOTE: Disease lists are presently being developed to be included in the Regulations). Indeed the State Authorities recognised the Working Party as a potential resource to consult in regard to the development of such a list (during the preparation of this report a draft list was released for public comment - see below).

In summary, the *Fisheries Act 1994* provides for emergency disease or quarantine declarations and the declared Disease List (when finalised) will enable non-emergency quarantine declarations and the enforcement of other legislative powers under the Act relating to importation, sale and disposal of disease fisheries resources.

6.5.2.1.2 The Fisheries Regulations 1995

As alluded to, there are, as yet, no lists of notifiable diseases for aquatic animals declared in the *Fisheries Regulations 1995*; a declared Disease List is in preparation. One of the reasons for this situation involves

prawn aquaculture and prawn diseases. Over the past 5-10 years, prawn aquaculture world-wide has been expanding. This growth has been accompanied by major outbreaks of infectious disease caused by a variety of previously unknown agents, mainly viruses. Thus, these emerging diseases of farmed prawns and the aetiological agents are relatively uncharacterised and few reliable diagnostic procedures are available. Without a clear definition of the diseases and their causative agents it is difficult to construct a comprehensive list of notifiable diseases. Quarantine areas can be declared only as an “emergency” which may not be appropriate in all cases. Thus, QDPI is in the process of establishing lists of notifiable diseases of aquatic animals under the Act and, currently, have produced a draft list for consideration by stakeholders. It is recognised that many important diseases are unable to be accurately identified at present and that some diseases which may be important have not been detected. For these reasons the draft Declared Disease List includes a contingency for unidentified diseases and will enable QDPI to react to these outbreaks if State aquatic animal health experts deem them to be significant.

6.5.2.2 Infrastructure

6.5.2.2.1 Roles of Universities and Consultants

Due to the size of the State, it was recognised that Universities, other Agencies and private consultants are a valuable resource to be utilised appropriately and which could be used in disease investigations. Thus, during disease investigations, the need to incorporate activities of these service providers into a reporting scheme, with QDPI as the central reporting agency, was emphasised. It was noted that because Queensland does not have a list of notifiable aquatic animal diseases and it was thought that reporting was not mandatory. Reporting of disease or suspected disease outbreaks is mandatory under the *Fisheries Act 1994*. Moreover, the desirability of an efficient aquatic animal disease network with a central State laboratory responsible for disease reporting was recognised. Early reporting to the central State laboratory is required so that the full resources of the State and Commonwealth can be mobilised as quickly as possible, if needed.

The requirement for close collaboration between the various diagnostic and research providers to the aquaculture industries was also discussed in the sense that there needed to be a pooling of resources so that there was no duplication of work and that all interested parties would benefit from the varied skills available at different institutions e.g. QDPI, CSIRO, universities and others e.g. Australian Institute of Marine Science, QDPI Bribie Island facility.

6.5.2.2.2 Queensland Department of Primary Industry

Aquatic animal (which includes all fisheries resources) disease diagnosis is provided as a service to industry at both northern and southern health centres. Although random testing is not current, there are significant numbers of samples provided by the aquaculture industry for disease and health testing. During the visit to the Animal Research Institute (ARI), Yeerongpilly, it was noted that, currently, there was not a significant amount of aquatic animal disease diagnosis undertaken at ARI; although there is parasitology, bacteriology and virology (fish cell lines and viruses maintained in frozen storage) capability, there is no longer any depth of expertise or experience available within the laboratory. The majority of aquatic animal work involves investigation of fish kills which, for the most part, appear to be linked with pollution of waterways.

The main meeting was held at QDPI Head Office, Brisbane. The structure of QDPI is of a matrix-type, organised into three tiers:

- I. *Groups* e.g. Resource Management group which includes Land, Fish, Forestry and Water.
- II. *Programs* e.g. Resource Management (Water, Fish), Agriculture (Animal Health Bureau) and Industry Sectors which would include Aquaculture.
- III. *Regions* - North, Central, West, South and South-east.

As expected, the Brisbane office is concerned with policy, management and planning for the various fisheries industries and the regions are more concerned with operations.

The outcome of this type of organisational structure is that some projects can span different groups, programs and regions e.g. Fisheries vs Aquaculture. It was noted that this type of structure can have

its advantages and disadvantages. It was also noted that the State had plans to review this organisational structure.

With this structure, there are well-developed linkages between Fisheries and Agriculture between the State and various Commonwealth agencies (such as AAHL and DPIE/AQIS) and a good understanding of the State's responsibilities to disease reporting. As with other States, Queensland recognised that, with the current level of resourcing, there were limitations to the State's capabilities especially in consideration of the large geographical area involved. Recently (subsequent to our discussions), Queensland has funded extra positions which are targeted specifically for servicing the aquaculture sector. There is, now, an additional veterinarian, based at Oonoonba RVL serving north Queensland aquaculture and a further veterinarian based in Brisbane serving the south region. In addition, there is a general understanding that veterinary and stock officers would be available for aquatic animal disease emergencies and authority to utilise these resources would be through line management.

Mr. Roger Jones, TEM Consultants, employed by the FHCG to undertake a review of the *national* response to fisheries and aquaculture emergencies, accompanied the Working Party at this meeting. As part of the consultancy and to assist with coordination between States, Roger Jones presented draft recommendations regarding the *national* response to disease emergencies and solicited responses. Including Roger Jones in these meetings provided him with an insight to how aquatic animal disease emergencies are likely to be handled at the State level and provided the State with an opportunity to discuss the recommendations of a draft of the report *Managing The National Response to Fisheries and Aquaculture Emergencies* (TEM Consultants, 1995; Appendix 17.2).

6.5.2.2.3 The Australian Prawn Farmers Association

During the course of this project, the Australian Prawn Farmers Association (APFA) has become pro-active in progressing the issue of aquatic animal disease preparedness. The Executive Committee of APFA views disease as a major factor limiting the growth of the industry and have implemented some initiatives to address the growing disease issues. For example, at the Annual Meeting of the Australian Prawn Farmers Association, Cairns, July, 1996, a forum was organised where there was a detailed discussion on aquatic animal disease preparedness, contingency planning and lists of notifiable diseases between APFA members and guests and a panel of disease experts including Dr. Ian Anderson, QDPI, Dr. Leigh Owens, James Cook University, Dr. Peter Walker, CSIRO Tropical Agriculture, Dr. Mark Crane, CSIRO AAHL Fish Diseases Laboratory, Dr. Gardner Murray, Commonwealth Chief Veterinary Officer. APFA is continuing in this pro-active role and has agreed to participate in the process of developing generic contingency plans for disease emergencies of aquatic animals, a project (Project 97/214) partly funded by FRDC.

6.5.2.2.4 Other issues

There appears to be good linkages and communication among and between the various research and health services providers and the industry on an informal basis. It is clear that the system would benefit from more formal linkages to be established with clear definitions of roles and responsibilities of all parties. The development of a disease emergency action plan would provide the formal linkages recommended.

A disease emergency action plan for QDPI has been developed and is currently undergoing finalisation.

A potential problem noted, involved, during State disease emergencies, State access to Commonwealth lands such as army training areas. State legislation does not have precedence over Commonwealth legislation. The Working Party undertook to contact the relevant Commonwealth agencies and to initiate resolution of these issues.

In addition, the size of the State is an issue in that it can create logistical problems with respect to reaction to reports of fish kills. Such kills can occur in remote locations and thus investigation can be delayed. It is likely that, in the main, such kills will be due environmental problems such as pollution rather than infectious disease. In the investigation of fish kills it would be desirable that both water quality problems and potential infectious disease occurrence are progressed in parallel which is not always possible due to a lack of available resources.

6.5.3 Conclusions

Queensland has a well-developed network of research and animal health services providers. The reporting system needs to be formalised, with QDPI as the central reporting agency. A list of notifiable diseases is being developed with sufficient flexibility so that it can be comprehensive even without some diseases specified. For example, instances of unexplained significant mortality is specifically addressed, but would otherwise be covered under section 100 (disease reporting) of the *Fisheries Act 1994*.

6.5.4 Summary

Tropical aquaculture is perceived to be an expanding industry with considerable potential. In this respect contingency planning for aquatic animal disease emergencies has a relatively high priority and, recently, additional resources have been made available to this sector. In most instances, the legislation has broad powers relating to aquatic animal disease investigation and control. It is interesting to note that in developing new legislation, Queensland has opted for including aquatic animal disease issues in the *Fisheries Act* and *Fisheries Regulations* rather than a *Stock Act* or *Exotic Diseases of Animals Act*.

6.6 NEW SOUTH WALES

6.6.1 Introduction

6.6.1.1 Current Operations

New South Wales fisheries production is valued at approximately \$113 million and includes several species of wild-caught crustaceans, molluscs and fin fish and an aquaculture sector which is worth approximately \$34 million which is dominated by edible oysters valued at \$28 million (ABARE 1996).

6.6.1.2 Disease Threats

As with other States which have declared notifiable diseases, lists of notifiable diseases for New South Wales reflects the range of fish and other aquatic animals which are important fisheries resources. Thus, the lists include all known exotic fungal, viral, bacterial and parasitic diseases of fin fish, crustaceans and molluscs as well as certain enzootic diseases and other “environmental diseases” or aquatic pests such as the northern pacific seastar and toxic dinoflagellates.

6.6.2 Situation Report

The meeting, held at Fisheries Head Office, Sydney Fish Market, involved staff from the Department of Fisheries as well Department of Agriculture which was appropriate and very useful considering that both Departments appeared to have responsibility for the control of aquatic animals and diseases thereof. Dr. Paul O'Connor (Director, Fisheries Management) and Dr. Rick Fletcher (Director, Fisheries Research) addressed the meeting and expressed their support for preparation of disease emergency contingency documentation (see Appendix 17.7.6).

6.6.2.1 Legislation

As alluded to, legislative powers for the control of movement and use of fish and fisheries products and for the management of disease outbreaks is contained within several Acts which are administered by either the Department of Agriculture, i.e. *Exotic Diseases of Animals Act 1991* and *Stock Diseases Act 1923* or the Department of Fisheries, i.e. *Fisheries Management Act 1994* and *Fisheries Management Act (Aquaculture) Regulations 1995*.

NSW has well-developed legislation (*Exotic Diseases of Animals Act 1991*, *Stock Diseases Act 1923*, *Fisheries Management Act 1994*, *Fisheries Management Act (Aquaculture) Regulations 1995*) for the control of serious disease outbreaks in stock animals including aquatic animal. These various Acts provides the State with the power to declare disease, quarantine controls such as restriction of movements of personnel, stock and equipment, vaccination of animals, disinfection, destruction of stock etc.

It was noted that while the list of notifiable diseases and many control mechanisms came under the *Fisheries Management Act (Aquaculture) Regulations 1995* administered by State Fisheries, aquatic animal diseases are also covered by the *Exotic Diseases of Animals Act 1991* and the *Stock Diseases Act 1923* administered by the Department of Agriculture. Negotiations are in progress to remove fish, crustaceans and molluscs from the definition of stock under the *Stock Diseases Act 1923* thus leaving the administration of enzootic disease control under Fisheries. However, it is also proposed that aquatic species will be left in the *Exotic Diseases of Animals Act, 1991* (administered by the Agriculture department) for use in the face of an exotic disease. Thus, if this arrangement continues, there is a clear requirement for close formal linkages between the two State Agencies but, currently, are under-developed. Liaison at an operations level appears to be good. Both State Departments recognised the benefits of pooling their resources especially in the event of a serious aquatic animal disease outbreak and are committed to developing aquatic animal disease emergency plans. Further discussions between the two departments are needed to ensure linkages essential to effective aquatic animal disease management are in place.

6.6.2.1.1 The Exotic Diseases of Animals Act 1991

This Act covers fish, crustaceans and molluscs under its definitions and has been specifically designed on the 'Kaney-style' to provide suitable powers for control of exotic diseases in animals.

6.6.2.1.2 The Stock Diseases Act 1923

Although fish are currently defined as 'stock' under the Act there are no notifiable diseases listed. It is proposed that fish are removed from the Act in the near future and powers for enzootic disease control will fall solely under the *Fisheries Management Act*.

6.6.2.1.3 The Fisheries Management Act 1994

The disease control section of this Act is aimed at mainly aquaculture premises. Many of the disease control aspects e.g. reporting, destocking etc, are covered under licensing requirements for aquaculture premises. Control areas have already been proclaimed under the Act to help control Epizootic Haematopoietic Necrosis (EHN) virus in southern NSW. The officers operating with the Act believe it is adequate for controlling most endemic disease situations. In the event of an exotic disease incursion the *Exotic Diseases of Animals Act* has been made available for use by the Department of Agriculture.

6.6.2.2 Infrastructure

At an operational level there is a long history of co-operation between Agriculture and Fisheries staff, for example the fisheries-employed aquatic animal health specialist is based at an Agriculture laboratory (Wollongbar RVL), and there is history of EHN research and disease diagnosis of aquatic animals based from Agriculture's Elizabeth MacArthur Agricultural Institute (EMAI) laboratories. The role of EMAI is largely decreasing in aquatic animal matters as Fisheries increases its role in the area.

6.6.3 Conclusions

The existence of several Acts with overlapping legislation and responsibilities is not desirable nor appropriate. It is understood that the current emphasis on aquatic animal diseases and associated legislation has prompted NSW to review this situation and modify the legislation to clarify the roles and responsibilities of the Departments involved - Fisheries and Agriculture. Recent discussions with the aquatic animal veterinary pathologist within the State Department of Fisheries indicated that, following a review of the State legislation, responsibility for disease control in aquatic animals will soon devolve to the Department of Fisheries.

6.6.4 Summary

Although overlapping legislation may serve to confuse roles and responsibilities (policy matters) of the State Departments involved, NSW has a well-developed network of research and diagnostic facilities for animal health (operational matters). Linkages between Fisheries and Agriculture are established in many instances and it is recommended that an action plan for the management of aquatic animal disease emergencies should be formally documented detailing the roles and responsibilities of all State agencies which would be required in the event of such an emergency.

6.7 NORTHERN TERRITORY

6.7.1 Introduction

6.7.1.1 Current Operations

Northern Territory fisheries production is valued at approximately \$60 million, the majority of which is accounted for by the aquaculture sector valued at \$46 million and includes pearls, prawn, barramundi and aquarium fish (ABARE 1996).

6.7.1.2 Disease Threats

With the recent growth of aquaculture in the Northern Territory the threat of aquatic animal disease has become more of a concern especially since most of the aquaculture species are also native e.g. barramundi, to the Territory and/or adjoining States.

6.7.2 Situation Report

The CVO, Assistant Director of Fisheries, Assistant Director, Aquaculture, senior veterinary pathologist and senior Fisheries Officers attended the meeting, a record of which is presented in Appendix 17.7.7.

6.7.2.1 Legislation

Current legislation relevant to the management of aquatic animal disease outbreaks is contained within two Acts, the *Stock Diseases Act 1954* and the *Fisheries Act 1995*.

6.7.2.1.1 The Stock Diseases Act 1954

For matters concerning aquatic animals, the *Stock Diseases Act 1954* only comes into play if the aquatic animal in question is declared as an "animal" under the Act, otherwise the Act does not apply to aquatic animal species.

6.7.2.1.2 The Fisheries Act 1995

The powers covered by the Act are very broad and relate to the movement of aquatic animal and aquatic animal products into and within the Territory and the control of diseases, including exotic disease. Thus, the importation of exotic or noxious aquatic animal species is under strict control and there are regulations concerning the movement and release of diseased aquatic animals. With respect to management of disease outbreaks, Regulations under the Act grant the power to declare quarantine areas as well as protected areas, thus controlling the movement of aquatic animal and aquatic animal products, people, vehicles and equipment to and from such areas. The Territory can order the treatment or destruction of diseased aquatic animals or feed, water, equipment and anything else that may transmit and spread a disease.

6.7.2.2 Infrastructure

Fisheries and Animal health agencies in the Northern Territory fall within the same Department, the Department of Primary Industry and Fisheries, and thus facilitates communication between the relevant agencies. Historically, there are close ties between the animal health and fisheries areas. For example, the majority of aquatic animal disease diagnosis occurs within the Animal Health central laboratory at Berrimah. Although there are no formal funding ties with this laboratory, aquatic animal diseases are diagnosed on a case-by-case basis. Depending on the expertise required, cases for disease diagnosis may also be referred to other laboratories mainly in Queensland. The use of the Animal Health Laboratory and the relative small size of the government structure ensures communication of significant disease occurrences between fisheries and animal health areas.

The geographical size of the state was seen as a significant operational problem. A potential communication problem was identified between the State services and Commonwealth parks administration (Environment Australia). Prompted by the Working Party, Environment Australia is currently investigating this with a view to establishing protocols in disease investigation and communication for all its parks.

6.7.3 Conclusions

There are well-developed links between the Fisheries and Animal Health areas within the Northern Territory. The *Fisheries Act 1995* has powers relevant to disease control. In addition, linkages between Fisheries and Animal Health are sufficiently well-developed that, if necessary, aquatic animal species could be quickly included in the *Stock Diseases Act 1954*, to facilitate management and control of the disease outbreak.

The size of the personnel work-force of NT veterinary service is such that there is limited expertise and facilities for aquatic animal disease diagnosis e.g. expertise and facilities for aquatic animal virus isolation. However, there are established links with other government and academic agencies, in Queensland and, if needed, in Geelong, for assistance with disease diagnosis.

6.7.4 Summary

The *Fisheries Act 1995* appears to have sufficient powers to operate in a disease control situation. However, if further powers are required, there is the opportunity and links to bring the disease in question under the *Stock Diseases Act 1954*.

6.8 AUSTRALIAN CAPITAL TERRITORY

6.8.1 Introduction

6.8.1.1 Current Operations

The Australian Capital Territory (ACT) does not have any commercial fisheries apart from pet and aquarium retailers. Other aquatic animals are housed within the National Aquarium. Other activities include recreational fisheries; there are no aquaculture activities within the Australian Capital Territory.

6.8.1.2 Disease Threats

Due to the lack of commercial fisheries, especially aquaculture, within the Australian Capital Territory, disease matters are more concerned with the introduction of diseases, with subsequent negative impacts, to the natural environment rather than the outbreak of diseases due to the intensive husbandry conditions imposed by aquaculture activities.

6.8.2 Situation Report

Due to the special circumstances of the ACT, Parks and Conservation officials as well as the Chief Veterinary Officer were represented at the meeting. A record of the meeting is presented in Appendix 17.7.8.

6.8.2.1 Legislation

As alluded to, due to the lack of commercial fisheries within the ACT, the *Stock Act 1993* and the *Animal Diseases Act 1993* which are concerned with management of animal disease do not include fish or aquatic invertebrates. The relevant legislation which are concerned with wild fisheries resources and their conservation is contained within the *Nature Conservation Act 1980* and the *Fishing Act 1967*. These Acts have not been designed for the control of aquatic animal disease, so there would be difficulties in implementing activities such as quarantine of premises, destocking and information gathering. The officials are interested in investigating the inclusion of aquatic animal diseases under the *Animal Diseases Act 1993* which has been designed for control of disease. Its effectiveness over water as well as on land was to be investigated but it was considered likely that, in its current form, the Act would not support effectively, for example, declaration of quarantine areas involving water bodies.

6.8.2.1.1 The Nature Conservation Act 1980

The *Nature Conservation Act 1980* has authority over freshwater and prohibits the release of anything which may be detrimental to the environment such as an aquatic animal disease. This may be useable in the face of an outbreak/emergency but, due to the Act being designed for environmental rather than health issues, its use would be limited.

6.8.2.1.2 The Animal Diseases Act 1993

This act is specifically designed to facilitate the control of diseases in terrestrial animals and is designed on the "Kaney" style. Presently, the Act does not cover aquatic animals although Territory officials are keen to investigate the possible inclusion of fish/aquatic invertebrates under the Act. It is intended that a list of notifiable diseases would be included.

6.8.2.2 Infrastructure

The ACT is relatively small in both population and geographical terms. The ACT government service is, likewise, small. Both Fisheries and Animal Health Services are part of the Department of Parks and Conservation. The Animal Health Service consists of one veterinarian and 'Fisheries' consists of two officers. The Fisheries Service, due to the needs of the Territory, is mainly concerned with environmental issues rather than commercial interests.

The small size of the Territory and the Animal Health Service facilitates the formation of linkages and good and easy communication. It should be noted that the Territory has no diagnostic laboratory capability and so refers the more complicated diagnostic problems to either Elizabeth MacArthur Agricultural

Institute or Wollongbar Regional Veterinary Laboratory, Department of Agriculture, NSW, for laboratory investigation and diagnosis.

Although the ACT has emergency protocols for terrestrial animal diseases, aquatic animal disease protocols are yet to be developed.

6.8.3 Conclusions

Aquatic animal species and diseases thereof are not included in legislation concerned with the management of animal disease emergencies. Clearly, either aquatic animals should be included with other animals in the *Animal Diseases Act 1993* or new legislation should be developed to cover aquatic animal diseases.

6.8.4 Summary

State personnel are well-informed concerning their roles and responsibilities with respect to management of animal disease emergencies. However, the lack of appropriate legislation would limit their power in the event of an aquatic animal disease emergency.

6.9 COMMONWEALTH WATERS

6.9.1 Introduction

6.9.1.1 Current Operations

Commonwealth fisheries production is currently valued at approximately \$303 million and is dominated by the northern prawn fishery (with a value of \$114 million), the south-east trawl (with a value of \$50 million) and the southern bluefin tuna fishery (with a value of \$47 million) (ABARE 1996). Commonwealth fisheries are managed by a statutory agency, the Australian Fisheries Management Authority (AFMA)

6.9.1.2 Disease Threats

At present, there are no aquaculture enterprises in Commonwealth waters, so any disease problems are most likely to occur in the wild-caught fisheries. As such, there is likely to be little action possible, apart from monitoring, restriction of fishing and disinfection of equipment in the event of an infectious disease outbreak (cf. the 1995 pilchard mortality event). There is a particular concern in the northern fisheries as to the interaction of wild and farmed prawns in the event of a disease outbreak spreading from an aquaculture facility to wild populations.

6.9.2 Situation Report

A meeting was arranged with senior officers of AFMA and is documented in Appendix 17.7.9.

6.9.2.1 Legislation

The Australian Fisheries Management Authority (AFMA) is a government/industry body which operates under the *Fisheries Management Act 1991*. The Act does not address directly aquatic animal disease, however, it can be used to restrict fishing areas in the short-term.

6.9.2.2 Infrastructure

AFMA is a management body and as such has limited operational resources. Much of the operational issues such as disease diagnosis would become the responsibility of the State/Territory in which the catch is landed. However, as noted in discussions with States/Territories, the boundaries of responsibilities between States and Commonwealth are not clear.

AFMA is outside the animal disease communication network of the Commonwealth and States and action to rectify this problem should be undertaken as quickly as possible.

The management of AFMA is relatively new to the requirements of aquatic animal disease reporting and control and further definition of the communication lines to Commonwealth and State systems is needed. AFMA is currently investigating this problem.

6.9.3 Conclusions

Although AFMA officers were unfamiliar with many of the concepts presented during the interview, they did express an enthusiastic willingness to seek clarification of their role in both communications and operations in the event of a disease event.

6.9.4 Summary

Several needs became apparent from the interview with AFMA officers. There is a recognised need for development of communications lines at both the State and Commonwealth levels (possibly through the Commonwealth Chief Veterinary Officer and Fisheries and Aquaculture Branch, Commonwealth Department of Primary Industries and Energy).

The roles of AFMA and State organisations need further definition with respect to needs of monitoring and operations in Commonwealth waters.

Two meetings were held with Ms. Kathy Colgan, Assistant Director, Wildlife Management Directorate, Environment Australia, Belconnen, ACT. At the first meeting, members of the Commonwealth DPIE and FHCG were present and general aspects and needs of disease preparedness were discussed. After this meeting, it was noted that there was a lack of information concerning contingency plans for disease emergency outbreaks in Commonwealth waters and Ms Colgan offered to co-ordinate gathering of information from various stewards of Commonwealth property e.g. Airports, Reserves, Ports, CSIRO, Parks, Defence Force etc, to ascertain what provisions, if any, were in place.

At the second meeting, Ms. Colgan informed us that there were no protocols at present for communications or action in the face of an aquatic animal disease outbreak on many areas of Commonwealth land. In some areas there are local arrangements between park staff and State diagnostic services, however, there is no official policy at present and, hence, no documented action plan. She reported that there was generally a lack of understanding of the issues and that Environment Australia (EA) recognised this as a gap which needs to be addressed.

Various strategies to repair this gap were discussed. Environment Australia has undertaken to organise a workshop for representatives of Commonwealth land stewards so the issues and needs can be identified and a way forward be defined. After discussion it would appear many of the problems are likely to be resolved by increased communication between State and Commonwealth agencies. The authors have been invited to assist at this meeting/workshop.

Aquatic animal health can have a significant environmental impact and EA believes they are not included in the information loop. This is likely a symptom of a problem in communication between the aquatic animal health processes (jointly under SCARM and SCFA) and environmental processes (under ANZEC). Although EA considers it does not require an active role in the aquatic animal disease process it should be confident that it is included in cases where a disease occurrence may have a significant environmental impact. This requirement may be addressed by ensuring the inclusion of an EA representative in the CCEAD (or similar) process, where necessary. Greater common understanding of aquatic animal health issues and their environmental impacts could be fostered by further informal or formal contact between ANZEC or EA and the FHCG.

The lack of definition and formalisation of the roles and responsibilities of Commonwealth and State/Territory agencies in the face of an aquatic animal disease outbreak in Commonwealth waters within States/Territories is a major problem which needs to be addressed with the utmost urgency.

8 OTHER COMMONWEALTH AGENCIES

8.1 The Role of the Office of the Commonwealth Chief Veterinary Officer, DPIE

During the event of a terrestrial animal disease emergency, the Office of the Chief Veterinary Officer (OCVO) provides coordination using the communication network known as CCEAD (Consultative Committee for Emergency Animal Diseases). This committee is comprised of the Chief Veterinary Officer of each State and Territory, staff from OCVO, senior management from CSIRO Division of Animal Health and, as needed, other experts on the disease constituting the emergency. This committee does not meet at regular intervals but is convened on an as needed basis, usually by telephone conference, to discuss current animal disease emergencies. The staff of OCVO provide advice or facilitation where needed and provide a conduit to overseas interests using the Department of Foreign Affairs networks. As such OCVO provides an important communications role between States during animal disease emergencies, including those of aquatic animals, as was demonstrated during the pilchard mortality event of 1995 and the report of bonamiosis in 1991.

The officers of OCVO have a well-developed understanding of disease control and related issues and are active in the development of aquatic animal health policy. However, OCVO has no operational role as this is well-understood to be a State/Territory role during a disease outbreak.

During outbreaks, expert knowledge may be sourced from other Commonwealth Agencies such as Bureau of Resource Sciences and CSIRO as needed.

8.2 The Role of Fisheries and Aquaculture Branch, DPIE

The Fisheries and Aquaculture Branch (FAB) within the Commonwealth Department of Primary Industries and Energy (DPIE) has a coordination role. During the 1995 pilchard mortality this role included input into the CCEAD network and coordination of reporting. In this respect, FAB has a liaison function between the States and the Commonwealth but, as such, has no operational role as this is, clearly, the responsibility of the States/Territories in which the disease emergency has occurred. It is possible that, to facilitate diagnosis, FAB would coordinate, via CCEAD, transfer of samples between States to laboratories with specific expertise, even to States (with permission from the CVO of that State) where the disease may be exotic. Recently, FAB has been tasked with the establishment of a CCEAD-style group for aquatic animal diseases. The roles of branches of DPIE such as the OCVO, Bureau of Resource Sciences and FAB are currently being defined in respect to the development of aquatic animal health communication and policy development.

8.3 The Role of CSIRO AAHL

The Australian Animal Health Laboratory (AAHL), located at the CSIRO Division of Animal Health in Geelong, Victoria, plays an important role in the management of animal disease emergencies especially at the operational level. It is at AAHL that diagnostic procedures for exotic animal diseases are developed and validated before they can be used in the field. Much of the developed technology, once validated, is transferred to State laboratories which are responsible for primary disease diagnosis, in most instances. In those cases where an exotic disease is suspected, there are clear protocols which are followed concerning the submission of samples to AAHL (Appendix 17.9). Recently, there have been several examples where this arrangement has been particularly successful in the management animal disease emergencies. The recent equine morbillivirus outbreak and its control effected by the collaborative activities of the Queensland Department of Primary Industry (QDPI) and AAHL is such an example.

The AAHL Fish Diseases Laboratory (AFDL) is an integral part of CSIRO AAHL and, in much the same way as AAHL plays a vital role in the management of terrestrial animal disease emergencies, AFDL has a similar role in the management of aquatic animal disease emergencies and the same protocols concerning the submission of diagnostic samples to AAHL apply. Thus, AFDL is responsible for the diagnosis of exotic diseases of aquatic animals, including the development of improved diagnostic procedures, and testing for suspected outbreaks of exotic disease.

Specific groups consulted during the course of the project included staff at Queensland universities who are actively involved with the fisheries industry, are part of the network of aquatic animal health service providers in that State, and often act as consultants on aquatic animal health matters. Many of these health professionals were participants in the *National Aquatic Animal Disease Contingency Planning Workshop* convened in August 1996. As co-organisers of the Workshop, members of the Working Party ensured that the list of participants included representatives from State and Commonwealth agencies, industry associations, peak bodies and private consultants with specific expertise in aquatic animal health. Organisations represented at the Workshop included, CSIRO, NSW Fisheries, QDPI, OCVO (DPIE), BRS (DPIE), FAB (DPIE), LPD (DPIE), ASIC, Aquaculture CRC, APFA, Oyster Farmers Association of NSW, TSGA, PIJAC, DNRE Victoria, Department of Agriculture NSW, Department of Primary Industries SA, Department of Primary Industries & Fisheries Tasmania, Department of Agriculture WA, Tuna Boat Owners' Association, SARDI, RecFish Australia, Environment Australia (formerly ANCA), FEHC, FRDC, TEM Consultants. A list of the participants and a summary of the outcomes are given in Appendix 17.3

In addition to the Workshop, a member of the Working Party (Mark Crane) was invited to the 1996 Annual Meeting of APFA to address its membership on aquatic animal disease contingency planning and to participate as a member of an expert panel in a forum to discuss aquatic animal health policy issues with the general membership and guests (see Section 6.5.2.3; Appendix 17.11).

By implementing this broad consultation process at an early stage, all major stakeholders have been primed to the requirements for the development of contingency plans and their implications. It was encouraging to note that the response by both the public (State/Territory and Commonwealth governments) and private (industry) sectors has been enthusiastic.

The aim of aquatic animal health legislation is to facilitate the surveillance and control of aquatic animal diseases. Accepting this as a basic premise, the project has demonstrated that the aim can be achieved by different means under different circumstances. The relevant legislation may lie within the powers of either Fisheries or Agriculture agencies or both. Moreover, the study has demonstrated the most important aspects are not where the legislation lies but rather the contents of the legislation and then the communication and understanding established between the 'operative' arms and the 'legislative' arms.

The important aspects of an effective legislation for the purposes of control of animal diseases can be broken down as follows:

- Power to allow entry to premises
- Power to enforce quarantine
- Lists of notifiable diseases
- Power to enforce notification of diseases
- Power to require treatment of diseased stock
- Power to require disinfection of fittings and surroundings
- Power to obtain information
- Power to seize and destroy diseased stock
- Power to require testing

The relevant legislation of the vast majority of States/Territories now contain the above powers or are currently being reviewed (see appendices 17.12 and 17.13).

Responsibility for aquatic animal health resides within the agricultural portfolios in Victoria, Tasmania and South Australia. In Queensland, New South Wales and Western Australia, Northern Territory responsibilities lay within different portfolios such as Fisheries or responsibilities overlap between portfolios (Fisheries and Animal Health/Agriculture). Clearly, in all States/Territories, no matter where the responsibility lies, in the event of an aquatic animal disease emergency, there is a need for close cooperation between the fisheries and agricultural areas. Expertise from both areas is required for effective control.

In several States/Territories the linkages between 'Agriculture' and 'Fisheries' have been enhanced by amalgamation of the Departments e.g. Victoria. However, the approach where the two areas are separated can also be effective if the operational linkages and understandings between the authorities are present e.g. Western Australia.

Due to the current increased interest in aquaculture and aquatic animal diseases there have been many developments in legislative approaches to the control of aquatic animal diseases in the States/Territories. In most States/Territories, recent changes to the existing legislation have either incorporated the issue of aquatic animal disease emergency management e.g. Victoria, or new legislation has been drafted to directly address the issue e.g. Queensland. Five years ago the legislation for aquatic animal diseases was, in some States, quite rudimentary. This is no longer the case. There were notable exceptions which reflected the relative importance of aquatic animal diseases to particular regions. The ACT and EA have no direct capabilities in aquatic animal disease legislation. Both are now addressing this problem. The authors have been invited to continue to assist these agencies in development of action plans or legislation, as required.

Although the legislation is in place, in most instances, it is not well-practiced and, in the face of a disease emergency, most States/Territories recognise that a formal action plan detailing linkages and resources would facilitate effective management. The basis for an action plan was discussed during the meetings using a theoretical scenario which would be relevant to each State/Territory. These discussions led to the development of a generic plan of the necessary linkages for effective management of emergency aquatic animal disease outbreaks and is shown in Appendix 17.15.

Following development of an action plan, training exercises involving all relevant agencies are essential and are likely to identify deficiencies in the action plan. In this respect, a review process is also a critical component of any contingency plan.

Of course, legislation can be challenged legally and unexpected issues may arise during disease outbreak situations and unforeseen 'holes' may appear in legislation. This problem is more likely to occur in the case of new, untried legislation rather than in legislation which has been exercised in other disease situations. The chances of legal challenge during a disease control situation is more likely to occur in actions without industry support, so it is imperative that industries should be closely involved in both planning exercises and in real situations.

An issue which arose in all States/Territories was the small number of trained personnel both in government and private sectors with expertise in aquatic animal disease control in contrast to the expertise available for terrestrial animal disease control. In many States/Territories, there was a single aquatic animal health professional who would be severely over-extended in the face of a major disease outbreak. Having made that comment, most States have planned to use allied personnel from either fisheries or agriculture sectors in an attempt to address this deficiency. The shortfall of specific disease expertise may be partially solved by multi-skilling of other officers in techniques likely to be needed. e.g. familiarisation of veterinary officers with the operational techniques of aquaculture in their areas. Another possible solution is to treat the problem more on a national basis so that specialised expertise can be drawn from other States when needed, as has been practiced in terrestrial animal disease outbreaks in the past.

During these discussions, several States/Territories raised the issue of disease control on Commonwealth land within State/Territory boundaries. The States/Territories have no legislative authority to enter Commonwealth land. However, the agency responsible for managing Commonwealth land and waters within the States/Territories, Environment Australia has no operational resources for the management of any disease outbreak. Thus, linkages between Environment Australia and State/Territory diagnostic facilities should be strengthened, and some formal arrangements established, underpinned by legislation and documented contingency action plans.

Further work is proceeding at both the National and State levels in the formulation of aquatic animal disease contingency plans to firm the links within government and private sectors for action in the face of a serious disease event. Priority has been given to this task by the FHCG of EHC and SCARM/SCFA. Funding has been provided by Commonwealth government and Industry research funds to continue this work.

Finally, it is important to determine whether individual State/Territory policies (legislation) and operations (disease control mechanisms) are compatible with other States/Territories. For example, it is important that diseases which are likely to cross jurisdictional boundaries are allocated the same status in each jurisdiction, are diagnosed using reliable, sensitive and standardised tests, and are managed in the same manner across jurisdictions. Further work, currently in progress and coordinated by DPIE, involves establishing a national approach to management of aquatic animal disease emergencies so that there is consistency among the different States and Territories and between these agencies and Commonwealth agencies (see section 13).

It is anticipated that the benefits and beneficiaries will not differ from those identified in the original project application. Each State and Territory has reviewed its legislation and has a clearer understanding of the current status of its legislation as it applies to management of aquatic animal disease. Current resources available to deal with an aquatic animal disease emergency within each State/Territory were identified as were any serious shortfalls. The State/Territory authorities responsible for management of aquatic animal disease outbreaks have identified the strengths and weaknesses within each of their systems. Thus, it is anticipated that the agencies that regulate and service the fisheries industries in each State/Territory will be better prepared to manage aquatic animal disease emergencies. Each industry sector, especially those threatened by disease outbreaks, now recognises it is a stakeholder in any further development of disease preparedness such as aquatic animal disease contingency planning. Many fisheries industry sectors were involved in the *National Aquatic Animal Disease Emergency Contingency Planning Workshop* convened in August 1996 and it is expected that various industry sectors will continue their involvement in the further development of aquatic animal health policy. It is clear that State/Territory and Commonwealth agencies and industry understand the benefits and costs of contingency planning, and are keen to work together to facilitate this process.

A *national* approach to these issues is important to ensure consistency between individual States and Territories. It is essential that Australia is perceived by our trading partners to have established an appropriate aquatic animal health policy with effective operational systems. In Australia, the potential benefits to fisheries industries are well-recognised and a collaborative process has now been established between industry and government (State and Commonwealth) to develop aquatic animal health policy, and to resolve issues such as disease reporting and compensation.

This project is not a typical research project from which 'intellectual property-type outcomes' may be expected. This project has not generated intellectual property that, for example, could be protected by patent or that is of direct, commercial significance.

Although there is no intellectual property outcomes *per se*, this project has assisted in raising the profile of aquatic animal health and infectious diseases of aquatic animals so that some of the deficiencies in aquatic animal health policy at the State/Territory level as well as the Commonwealth level are, now, being addressed.

Some issues raised in this report are of a sensitive nature which could have an impact on, for example, international trade policy and therefore this report should be treated appropriately.

During the course of this project, it has been encouraging to note that both industry and government sectors have increased their awareness of aquatic animal disease and the threat that it poses to fisheries industries and natural resources. It is important to capitalise on this relatively recent development to ensure that, as the fisheries industries, (and especially aquaculture), develop, appropriate developments in aquatic animal health policy at the State/Territory and Commonwealth levels also occur. Unless both private and public sectors evolve in concert with good cooperation and communication with respect to aquatic animal disease preparedness, both government and private investment in the industries will remain at risk.

Other recent developments confirm that both government and industry are enthusiastic partners in progressing aquatic animal disease preparedness. For example, at the *National Aquatic Animal Disease Contingency Planning Workshop*, (August 1996), it was clear that State/Territory and Commonwealth Governments and the various industry sectors supported further and rapid progress in this area. Indeed, with the outcomes of that workshop in mind, the next stages in aquatic animal disease contingency planning are being developed with full support from FRDC (FRDC Project 97/214: *Development of generic contingency plans for disease emergencies of aquatic animals*). To build on the program to date and the ensure continued commitment and enthusiasm by both private and public sectors it is important to progress these developments as soon as possible.

Recently, FHCG membership has been expanded (see Appendix 17.14) to reflect more appropriately its current role with respect to aquatic animal health matters and, in addition, it has been announced that a new group, the Fish Health Policy Unit, within DPIE, has been established to address other issues related to aquatic animal health policy development (Department of Primary Industries and Energy, 1997).

Apart from the original Working Party, staff from State and Commonwealth agencies have been directly involved in this project and are listed below.

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Dr John Edwards, Chief Veterinary Officer, WA

Dr Mike Hine, Senior Fish Pathologist, WA (until 1995)

Dr Brian Jones, Senior Fish Pathologist, WA (from 1995)

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Dr Geoff Neuman, Manager, Animal Health, Chief Veterinary Officer, SA

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Mr Bill Palmer, Legal Officer, Australian Fisheries Management Authority
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- 17.3** 1996 Melbourne Workshop Report: Summary of Outcomes
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- 17.8** Report on the Workshop on the Prevention of and Response to Disease Emergencies in Aquaculture in Tasmania, Rokeby, July 1994: Summary
- 17.9** AHC Protocols: Diagnostic Submissions to AAHL
- 17.10** State/Territory Lists of Notifiable Diseases
- 17.11** Program: 1996 APFA Workshop & Annual General Meeting, Cairns, 26-28 July 1996
- 17.12** Summary of Current Legislation with Relevance to Aquatic Animal Diseases in Australia
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- 17.15** Generic Flow Diagram illustrating Linkages for the Management of Aquatic Animal Disease Emergencies

**MEETING OF REPRESENTATIVES FROM
ANIMAL HEALTH COMMITTEE (AHC), SUBCOMMITTEE ON FISH HEALTH (SCFH)
(both of SCARM)
and
ENVIRONMENT AND HEALTH COMMITTEE (EHC) and AQUACULTURE
COMMITTEE (AC) (both of SCFA)**

BRISBANE 11 JULY 1995

Attendance

Kevin Dunn (Chair AHC); Mike Rickard (Chair SCFH); Simon Stanley (EHC); Murray Johns (EHC), Jim Gillespie (Chair AC).

Purpose

The meeting was convened by EHC/AC to resolve how best to expedite the identification of an appropriate mechanism to coordinate national responses to fish diseases (eg pilchards) and commence development work on disease preparedness/contingency plans

- being EHC's number one action priority.

AHC and SCFH wished to discuss their modus operandi for dealing with fish health matters.

Outcomes

It was agreed that under the current animal health structures of SCARM and SCFA, or any new structure under the proposed Australian Animal Health Council (AAHC), that there would be a continuing need to address fish health matters.

It was agreed that SCFH was not functioning satisfactorily and to disband it. In its place was established the Fish Health Coordinating Group (FHCG) with the following membership:

Mike Rickard (AHC and to Chair the group)
Simon Stanley (EHC, to be confirmed)
Jim Gillespie (AC, to be confirmed)

The role of the coordinating group will be to oversee and steer the work on fish health undertaken by, or on behalf of, SCARM/SCFA. It will meet on an 'as needs' basis only. It was agreed that the Liaison Officer of the EHC would be able to provide some coordinating and technical support to the FHCG.

Terms of reference for FHCG are:

Answering to both SCARM and SCFA and utilising skills and expertise available through the existing infrastructure of SCARM/SCFA

- undertake projects on fish health and disease matters in support of SCARM/SCFA
 - ♣ reporting through AHC, EHC and AC
- recommend issues to SCARM/SCFA that require action by FHCG.

It was agreed that the **first project** for FHCG to coordinate would be:

- i) identify appropriate national response mechanisms for fish disease outbreaks
 - ♣ and national response mechanisms for non-disease outbreaks, ie environmental issues
- ii) identify major disease threats to the fishing and aquaculture industries
- iii) develop appropriate disease contingency/preparedness plans
- iv) develop the requisite standard diagnostic techniques.

It was agreed that a consultant should be engaged as soon as possible to undertake (i) and provide an initial paper on (ii). Following completion of the consultant's work, a technical working party of fish health experts would be formed to refine (ii) and progress (iii) and (iv).

Suggested consultants are:

ACIL	Dennis Hussey, George Wilson (technical)
BRS	Mike Nunn, Graham Gamer
CSIRO	Mike Humphreys
Hassels	John Lowe

ACTION

- **Murray Johns to identify funding, consultants and steer the application process to expedite (i) and (ii)- in consultation with the FHCG.**
- **Mike Rickard to organise the technical working party of fish health experts to meet as soon as the Consultant's report is available.**

‘MANAGING THE NATIONAL RESPONSE TO FISHERIES AND AQUACULTURE EMERGENCIES’

EXECUTIVE SUMMARY

The pilchard mortality incident which affected a large area of Australian water in mid-1995 demonstrated the need for the development of national plans and mechanisms for the management of such events which the Standing Committee on Fisheries and Aquaculture (SCFA) had recognised in November 1994.

In the case of the pilchard mortality incident and in the absence of specific national plans and mechanisms for the management of fisheries and aquaculture emergencies, recourse was had to the existing arrangements for the management of exotic diseases in terrestrial animals. These arrangements are based on the Consultative Committee on Exotic Animal Diseases (CCEAD), which brings together chief veterinary officers of the Commonwealth and States/Territories to advise the ministerial-level Agriculture and Resource Management Council of Australia and New Zealand (ARMCANZ) on emergencies relating to animal health and on the application of cost-sharing arrangements agreed with regard to a range of exotic animal diseases.

This study demonstrates that in relation to the management of fish health emergencies occurring in fisheries or aquaculture the CCEAD arrangement provides the most appropriate national mechanism through which to ensure prompt and effective preparedness and response. The CCEAD arrangement is long-established, and regularly tested, exercised and practised; its systems are refined and generally well-understood within relevant professional and management/administrative groups. The survey of key 'stakeholders' conducted as part of the present study demonstrated that such 'stakeholders' have confidence in the arrangement.

The study recommends that the CCEAD management arrangement be formalised and institutionalised as the most appropriate mechanism for the coordination of national responses in marine and freshwater fisheries and aquaculture to fish health issues. In response to an actual or suspected fish health emergency, the CCEAD arrangement should be supported at Commonwealth and relevant State/Territory levels by a 'management task force' with fisheries/aquaculture and animal health expertise; a suggested emergency management model is shown at Annex C to this report, with suggested organisational responsibilities and operational arrangements at Annex D.

The study recommends that States and Territories be invited to review their current arrangements in the light of the national mechanisms suggested in this report and to develop and document future arrangements to ensure effective liaison and coordination within the national arrangements. The report also recommends agreement to an implementation program to give effect to the study's recommendations.

In relation to the management of introduced aquatic pest emergencies in both the marine and freshwater environments, the study demonstrates a need for a re-assessment of directions and priorities in this area and for the development of a coherent approach in the consideration of and planning for appropriate mechanisms at national and State/Territory levels. The re-assessment needs also to review Commonwealth and State/Territory legislation bearing on the issue.

The study identifies the need for input from environmental protection interests in the ongoing consideration of this issue and notes that while in some States there are arrangements which involve environmental protection authorities in some areas of the introduced aquatic pest area, in ballast water issues for example, there is no commonality in or common framework for such involvement. The study therefore recommends that the required re-assessment be conducted at national level by the SCFA/Fisheries and Environmental Health Committee and the Standing Committee on Environmental Protection (SCEP).

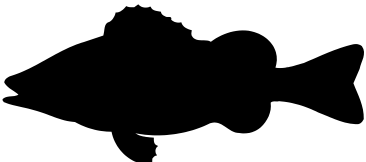
**REPORT OF A STUDY
'MANAGING THE NATIONAL RESPONSE TO
FISHERIES AND AQUACULTURE EMERGENCIES'
1995**

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- B. Methodology of the Study
- C. A National Fisheries/Aquaculture Health Emergency Management Model
- D. Organisational Responsibilities and Arrangements at National/Commonwealth Levels
- E. 'Incident Scenarios' for Workshop/Test-Exercise Use

<p>Standing Committee on Agriculture and Resource Management</p>	
<p>Task Force on Managing Incursions</p>	<p>FISH SUB-COMMITTEE</p>

Report of the Aquatic Animal Disease Contingency Planning Workshop

15/16 August 1996, Attwood, Melbourne, VIC

1.1 Introduction

In 1996, Standing Committee on Agriculture and Resource Management (SCARM) established a Task Force on managing incursions of exotic pests, weeds and diseases to address concerns about and improve reactions to disease and pest incursions in the terrestrial and aquatic environments. (Task Force Terms of Reference - Annex A). A fish subcommittee to address issues relating to aquatic animal disease and pest contingency planning was established by the Task Force. (Sub-committee membership - Annex B).

As a component of achieving this objective the first of two workshops was held on the 15th and 16th of August 1996 at Attwood, Victoria. This first workshop was designed to gather input of stakeholders to the development of a national aquatic animal disease contingency plan and was attended by representatives of commercial and recreational fishing and aquaculture industries, Commonwealth DPIE, CSIRO, State Departments of Agriculture and Fisheries, fishing industry research funding bodies, Aquaculture CRC and academic institutions. A list of attendees is in Annex C. (A second workshop will be held to address the issue of aquatic pests on the 4th and 5th of September 1996.)

1.2 Objectives

The objectives of the aquatic animal disease workshop were as follows:

- 1) Agreement to adopt a national approach to control of aquatic animal disease
- 2) Development of a national list (endemic and exotic) of notifiable diseases in aquatic animals
- 3) Development of principles of national disease reporting
- 4) The application of principles of contingency planning for significant diseases in aquatic animals

1.3 Program

Details of the program and summaries of presentations will be found in Annexes D and E respectively. The program outline was:

- Description and role of the SCARM Taskforce and introduction to the Workshop
- Current industry situation and links to government
- Current aquatic animal contingency planning approaches at Commonwealth and State levels
- Funding for planning, disease control and compensation
- Description of terrestrial animal disease control methodologies and their applicability to the aquatic environment
- The need for disease notification and reporting systems
- Identification of aquatic animal diseases of concern
- Resources available and needed to make a control system function
- Implementation of planning approaches
- Future directions for development of the management of significant aquatic animal diseases

A number of discussions allowed those attending to explore issues raised and ensured that all stakeholders had input into the outcomes of the workshop. Note form summaries of the discussions are found in Annex F.

Documents circulated before the workshop as background papers are included in Annex H.

1.4 Outcomes

The following outcomes were agreed.

1.4.1 Agreement to adopt a national approach to control of aquatic animal disease

- There was complete consensus for the adoption and immediate development of a national approach to management of aquatic animal disease emergencies. A great deal of commitment to the process was shown by industry representatives during the workshop.
- The workshop identified the need for an immediate approach to be made for funding for further development of contingency planning with effective industry inputs and communication and reporting networks.

- The workshop discussed the need for a specific discretionary fund to ensure that immediate field operations can be commenced without delay in the initial stages of an aquatic animal disease emergency. Such funding would not be used for compensation or longer term eradication measures. There was majority agreement for this concept.

Compensation Issues

- To encourage timely reporting of disease emergencies, the need for a compensation scheme similar to those operating for terrestrial species was considered necessary. It was generally considered that funds for this scheme could be sourced from levies linked to licensing plus appropriate government inputs.
- The workshop recognised the complexities of funding for compensation for both direct and consequential losses. The roles of industry, government and insurance contributions were canvassed. The difficulties facing small emerging aquaculture industries which have limited resources to build up contingency funds was recognised.
- The workshop recognised that compensation schemes would generally be more applicable to aquaculture, rather than wild caught fisheries, where stock and farm ownership was the driving force but major issues of public good or environmental impact may extend this to other situations.
- The workshop recognised the need for industry and government consultation to further progress the issue of compensation for losses directly related to eradication programs. It was considered that compensation from this source for consequential losses would be inappropriate and could in some cases be detrimental to the encouragement of best industry practices.

1.4.2 Development of a national list (endemic and exotic) of notifiable diseases in aquatic animals

- The workshop discussed and developed a list of diseases of international and national significance, gained largely from the OIE Aquatic animal health code and diseases, both exotic and endemic, of particular national interest. (See Annex G).
- A generic approach was also suggested where 'fact sheets' could be developed based on the observation of clinical syndromes. The aim of this approach is to guide industry in identification of possible problems and to ensure ease of use for operators in the field. (See Annex G).

1.4.3 Development of principles of national disease reporting

- The workshop identified the need for a national information management system to record the presence or absence of aquatic animal diseases in Australia to meet the needs of internal disease control and international trade.
- The workshop identified the need for further development of communication systems to ensure timely and accurate reporting of diseases from field to state, and in the case of selected diseases, to national systems.

- The workshop identified the need for adequate resources for meaningful surveillance, diagnostic and testing regimes.

1.4.4 The application of principles of contingency planning for significant diseases in aquatic animal

- The workshop agreed on the applicability of the principles of the Consultative Committee on Exotic Animal Diseases network and Ausvetplan to the management of aquatic animal disease emergencies.
- The workshop identified the need for further development of the CCEAD and Ausvetplan operations systems to ensure their relevance to aquatic animal disease emergencies, including adequate resourcing to develop and write the plans.
- The workshop identified that generic and enterprise/sector based manuals were the most relevant method for the development of contingency plans.
- The workshop identified the need for adequate infrastructure, training and facilities to diagnose and respond to aquatic animal disease emergencies.

1.5 Recommendations

1.5.1 A national approach to aquatic disease emergencies

It is recommended that a national approach be developed and implemented as soon as possible for the management of aquatic animal disease emergencies.

1. The Australian Seafood Industry Council (ASIC) was identified as the appropriate peak industry body for the fishing and aquaculture industries to further negotiate with government to develop a national planning and operational approach. The appropriate representative for the aquarium industry was identified as PIJAC and for the recreational fishing industry was identified as RecFish Australia.
2. There was discussion of the establishment of a specific discretionary fund be established and made available to State and Commonwealth aquatic disease management authorities to enable immediate field operations be commenced without delay in the initial stages of an aquatic animal disease emergency. There was wide but not complete agreement to the establishment of such a fund.
3. It is recommended that an immediate approach be made for funding to develop contingency planning processes and communication and reporting networks.

Compensation issues

4. ASIC was identified as the appropriate peak industry body for both aquaculture and capture fisheries for negotiations concerning matters of funding and compensation for the management of aquatic animal disease emergencies. PIJAC and RecFish Australia were identified as suitable peak bodies for the aquarium and recreational fishing industries.
5. It is recommended that a funding formula for compensation for direct losses due to eradication / control programs be developed using a model similar to the terrestrial animal cost sharing agreement.

6. It is further recommended that any compensation scheme so developed use contributions from industry and government in a formula to be established by consultation taking into consideration sizes of industries.

1.5.2 Development of a national list of notifiable diseases of aquatic animals

7. It is recommended that the OIE aquatic animal health code be used as a basis for the development of a list of nationally significant diseases with the addition of other diseases, both exotic and endemic, which do not occur on the OIE lists but are of particular significance to Australia. (See Annex G).
8. It is recommended that a guide for operators in the field be developed to enable linking of the list to recognisable clinical syndromes.

1.5.3 Disease reporting

9. It is recommended that selected aquatic animal diseases be included in the National Animal Health Information System (NAHIS).
10. It is recommended that ASIC seek membership and pursue the inclusion of aquatic animal diseases in the charter of the Australian Animal Health Council (AAHC).
11. It is recommended that industry, State and Commonwealth agencies collaborate in the development of communication systems to ensure timely and accurate reporting of diseases from field to State and when applicable to national systems. This could draw on the approach used in the Tasmanian Fish Health Emergency Management Plan Draft (Annex I).
12. It is recommended that further resources be made available to develop coordinated surveillance, diagnostic and testing regimes at State and national levels.
13. It is recommended that additional training be developed and provided for current terrestrial animal staff in order that their skills may be used in the event of an aquatic animal disease emergency.

1.5.4 Planning for aquatic animal disease emergencies

14. It is recommended that aquatic animal disease emergency management arrangements be included under the CCEAD and Ausvetplan arrangements or equivalent. It is further recommended that appropriate modifications be made to these arrangements to enable them to be used for control of disease in the aquatic environment.
15. It is recommended that funding be sought to establish writing groups to develop generic and enterprise/sector based plans for the management of aquatic animal disease emergencies.

1.6 The Way Forward

Industry representatives were enthusiastic to develop the national processes discussed at this workshop. They were keen the industry sectors should have active input and hence ownership of the processes in concert with State and Commonwealth government agencies. During this meeting, industry bodies have expressed willingness to assist in the development and continued progress of a national approach to aquatic animal health matters. It was

recognised that industry input was vital in the early development of the national approach to ensure both applicability of the system and continued industry support.

The following was submitted as an immediate action plan from an industry perspective.

- 1 Funding be urgently sought to establish technical writing groups to develop documents for the management of aquatic animal disease emergencies. Industry is committed to reviewing and supporting these documents.
- 2 Develop a flow chart of national communication and decision making similar to that shown in Appendix I - Draft Tasmanian Fish Health Emergency Management Plan.
- 3 Conduct a desktop study of technical information on diseases and control methods from world wide sources with a view to developing 'fact-sheets' on these subjects for industry.
- 4 Formalise a national list of diseases of concern and a related revision process.
- 5 Summarise an agreed position on disease notification.
6. Review legislation for uniformity and enabling action.
- 7 Develop diagnostic methods/training

The aquatic industries have communicated a strong commitment to the development of the contingency planning process in much the same way as terrestrial animal industries have in the past.

It is also recommended the views of this workshop be sent to the SCARM taskforce for further policy development.

1.7 List of Annexes

Annex A	Terms of Reference of SCARM task force on managing incursions of exotic pests, weeds and diseases
Annex B	Membership of Fish Sub-committee of SCARM task force on managing incursions of exotic pests, weeds and diseases
Annex C	List of workshop attendees
Annex D	Workshop program
Annex E	Speaking notes and overheads from presentations
Annex F	Note form summaries of workshop discussions
Annex G	Lists of diseases of concern
Annex H	Backgrounding documents to the workshop
Annex I	Tasmanian Fish Health Emergency Plan Draft document; Western Australian contingency plan executive summary document

APPENDIX 17.4: International Lists of Notifiable Diseases

DISEASE	O.I.E.	EU**	AUSTRALIA	OTHERS
Fish				
EHN	notifiable*		proposed	
IHN	notifiable	List II	proposed	UK
OMVD (herpesvirus type II)	notifiable		proposed	
SVC	notifiable	List III	proposed	UK
VHS	notifiable	List II	proposed	UK
CCVD (herpesvirus type I)	significant#			
viral encephalopathy and retinopathy	significant		proposed	
IPN	significant	List III	proposed	UK
ISA	significant	List I	proposed	UK
EUS	significant		proposed	
ERM		List III	proposed	
Furunculosis		List III	proposed	UK
BKD	significant	List III	proposed	UK
Edwardsiellosis	significant		proposed	
Piscirickettsiosis	significant		proposed	
<i>Gyrodactylus salaris</i>		List III	proposed	UK
Molluscs				
Bonamiosis	notifiable	List II (B. ostreae)	proposed	UK
Haplosporidiosis	notifiable		proposed	
Marteiliosis	notifiable	List II (M. refringens)	proposed	UK
Mikrocytosis	notifiable		proposed	
Perkinsosis	notifiable		proposed	
Iridovirosis	notifiable		proposed	
Crustaceans				
Baculoviral midgut gland necrosis	significant		proposed	
Nuclear polyhedrosis baculoviroses (<i>P. monodon</i> -type baculovirus and Baculovirus penaei)	significant		proposed	
IHHN	significant		proposed	
Yellowhead disease	significant		proposed	
White spot baculovirus	significant		proposed	
Crayfish plague	significant	List III	proposed	

** EU lists are used as mechanisms to facilitate trade whilst controlling the spread of important diseases (and thus have a restricted content) as follows:

EU List I diseases are exotic to the EU which would have a serious negative impact on aquaculture if introduced. Member states are prepared to take eradication measures should the disease occur in their territory.

EU List II diseases have a serious impact on aquaculture. Control measures are in place to prevent the spread of List II diseases to areas free from these diseases.

EU List III diseases have a negative impact on aquaculture. Countries which are free from these diseases or have a program controlling them may request additional guarantees when moving aquatic animals or their products into their territory.

* O.I.E. notifiable diseases are defined as those “considered to be of socio-economic and/or public health importance within countries and also significant in the international trade of aquatic animals and aquatic

animal products, and must be reported to the O.I.E. as specified in the International Aquatic Animal Health Code. These diseases were previously known as 'List B diseases'".

O.I.E. other significant diseases are defined as those "which are of current or potential international significance in aquaculture but which have not been included in the list of diseases notifiable to the O.I.E., because they are less important than the notifiable diseases; or because their geographic distribution is limited, or it is too wide for notification to be meaningful, or it is not yet sufficiently defined; or because the aetiology is not well enough understood".

The draft Australian National List of notifiable disease includes most, if not all, of the major diseases of aquatic animals considered significant to aquaculture internationally as well as other diseases considered significant to Australia.

APPENDIX 17.5: Proceedings of the Aquaculture Chemical Registration Seminar, Canberra, 13 August 1996: Summary

AQUACULTURE SEMINAR SCHEDULE

Date: Tuesday 13 August 1996

Venue: Edmund Barton Building Conference Centre Department of Primary Industries and Energy, Kings Avenue, Canberra

MORNING SESSION (General biology of species and aquaculture practices)

Chair: Dr Alison Turner (Petroleum & Fisheries Division, DPIE)

8.40am - 8.50am Opening Address (Mr Paul Barratt - Secretary DPIE)

8.50am - 9.00am Overview of Aquaculture Drug and Chemical Registration Strategy (Dr Steve Percival - Working Group on Aquaculture Drug & Chemical Registration)

9.00am - 9.15am NRA Perspective (Mr Greg Hooper - NRA)

9.15am - 9.30am Overview of Aquaculture Industry in Australia (Mr Glenn Hurry - FAB, DPIE)

9.30am - 10.00am Salmonids (Mr Harry King - SALTAS)

10.00am - 10.30am Morning Tea

Chair: Ms Jayne Gallagher (Australian Seafood Industry Council)

10.30am - 11.00am Native Fish (Mr Phil Reed - NSW Fisheries)

11.00am - 11.50am Barramundi and Prawns (Mr Chris Robertson - QDPI)

11.50am - 12.40pm Molluscs and SBT (Dr Patrick Hone - SARDI)

12.40pm Close of Morning Session

AFTERNOON SESSION (Details on diseases, chemicals used and rationale for use)

Chair: Mr Ian Hamdorf (Bureau of Resource Sciences)

1.40pm - 2.30pm Finfish - excluding Barramundi (Dr Barry Munday - U. Tasmania)

2.30pm - 3.20pm Barramundi and Prawns (Dr Ian Anderson - QDPI)

3.20pm - 3.50pm Afternoon Tea

Chair: Mr Dan Liszka (NSW Fisheries)

3.50pm - 4.40pm Molluscs (Dr Mike Heasman - NSW Fisheries)

4.40pm - 5.00pm International Perspective (Dr Eva Bernoth - AAHL)

5.00pm Close of Afternoon Session

REGISTRATION OF DRUGS AND CHEMICALS FOR USE IN THE AUSTRALIAN AQUACULTURE INDUSTRY

Background

In early 1995, the Aquaculture Committee and the Environment and Health Committee, operating under the auspices of the Standing Committee for Fisheries and Aquaculture recognised drug and chemical registration in the aquaculture industry as a priority issue. Consequently, a National Taskforce on Aquaculture Drug and Chemical Registration was established to act as a facilitator between the aquaculture industry and the National Registration Authority (NRA). The Taskforce met in May 1995 and developed a three stage strategy for achieving this goal (Appendix 1). This strategy has broad support from industry and all levels of government including the NRA. It therefore provides an ideal, but perhaps last chance to rationalise minor use permits and minor use registrations for the aquaculture industry in an efficient and coordinated manner.

Outline of Strategy

Stage 1 (completed late 1995)

An extensive survey was conducted by Dr Steve Percival of the drugs and chemicals currently used by the aquaculture industry in Australia. This information was collated into a report which was submitted to the Taskforce in late 1995. This Report forms the basis for stage 2 of the strategy.

Stage 2 (in progress)

The aim of stage 2 is to facilitate applications to the NRA for minor use permits or minor use registrations of a number of drugs and chemicals which are appropriately used in the aquaculture industry. The aim is to make this process as efficient and effective as possible, involving drug and chemical companies wherever possible. Permits or registrations would be specific to those products supplied by companies participating in this process.

Stage 3

The aim of stage 3 is to facilitate the development of new data to fill information gaps on drugs and chemicals which have not, at this stage, achieved minor use permits or minor use registrations. It is anticipated that there will be opportunities for the aquaculture industry to work closely with drug companies, the Co-operative Research Centre for Aquaculture, the Fisheries Research and Development Corporation and other research funding bodies to generate this information.

Status of Strategy

Following the completion of stage 1, Dr Percival has recently received funding from the FRDC to undertake stage 2 of the strategy over the next 12 to 18 months. Below is an outline of what is proposed for that period.

1. Consolidate and Re-focus (completed by early July 1996)

- Present outline for stage 2 of Strategy (DRAFT) to the Taskforce on Aquaculture Drugs and Chemicals, the Aquaculture Committee and the Environment and Health Committee to inform them of what is happening, seek comment and support.

- Meet with senior NRA representatives (before the Taskforce meeting on the 11th June) to inform them of what is happening and seek strong commitment to the strategy.
- Establish Working Group at meeting of the Taskforce

Members: Steve Percival (AMD), Dan Liszka (NSW Fisheries), Ian Hill (DPIE), Jayne Gallagher (ASIC), Ian Hamdorf (BRS), Graham Savage and Ken Hoy (NRA).

The role of this group is to actively progress the issue, with Steve Percival co-ordinating activities, facilitating communication between all interested parties and undertaking a major component of the actual work.

- Following the Taskforce meeting on the 11th of June, the Working Group to develop a detailed action plan.
- Establish an Expert Reference Group eg Dr Barry Munday - University of Tasmania, Dr Eva Bernoth - Australian Animal Health Labs, Dr Ian Anderson - QDPI, others). The role of this group is to provide expert advice on issues as required (eg use patterns).
- Compile a list of currently permitted drugs and chemicals for use in aquaculture and document their status (eg State permits).
- Contact those drug companies which have expressed an interest in the registration of aquaculture drugs and chemicals to inform them of what is happening and to organise meetings between them and members of the Working Group to determine how we might best work together in achieving permitted or registered products.

2. Develop a sound basis for preparation and submission of appropriate applications (late June 96 to late Aug 96)

- Prepare a submission to the NRA seeking exemption from registration for those drugs and chemicals on the NRA list where registration is considered unnecessary.
- Organise a seminar at the NRA, where a number of industry representatives present information on their respective industries, including an outline of reasons why drugs and chemicals are required, which drugs and chemicals are used and how they are used. Attendees should include as many NRA, CEPA Worksafe, NHMRC staff as possible.
- Meet with representatives from drug and chemical companies interested in registration of products to discuss how the Working Group can assist them to register appropriate products.
- Visit key aquaculture industries to increase registration staffs understanding of the industry, investigate industry requirements and develop appropriate drugs and chemicals and use patterns as a basis for applications to the NRA. This information will be developed co-operatively with industry, the Expert advisory Group and other relevant experts.
- Investigate overseas experience with this issue (eg Rod Armstrong - Salmonid Health Consortium in Canada, USFDA, David Alderman - in the UK, others in Norway etc.) This investigation will include other minor use industries (eg horticulture).

3. Preparation of Applications for Registration (July 96 to Dec 97)

- Rationalise drug and chemical use patterns to maximise the efficiency of, and minimise the cost of applications.
- Assist drug companies wherever possible in the preparation of information for applications.
- Seek, prepare and submit additional information as required.

4. Establish Systems for Ongoing Maintenance of the Issue (July 96 to Dec 97)

- Develop a set of guidelines for preparation and submission of applications for registration of drugs and chemicals in the aquaculture industry.
- Document information on products which attain registration, including appropriate use patterns (loose leaf folder).
- Prepare general information leaflets on safe and effective use of drugs and chemicals in aquaculture systems.

APPENDIX 17.6: Working Party on Aquatic Animal Disease Preparedness - Directing Questions
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Questions to be addressed by officers for understanding responsibilities during a severe disease outbreak.

1.0 Diagnosis

- 1.1 Is there a definition of "severe disease" or a list of notifiable fish diseases in the state?
- 1.2 Is there a fish disease surveillance system present? i.e. where is a report of disease likely to come from?
- 1.3 Does the state have veterinary laboratory backup with expertise in fish diseases?
- 1.4 Is the primary diagnosis likely to be handled by which state department? Does this department have an understanding with AAHL for exotic disease diagnosis?

2.0 Legislative Responsibilities

- 2.1 If a severe disease is reported or diagnosed which authority/ies will be informed?
- 2.2 Which authority has the legislative responsibility for the control of an exotic or severe disease?
- 2.3 Has this legislation been used in the past to control severe disease and are there personnel in the controlling authority who have experience in its use?
- 2.4 If the technical input is from a different authority, is there an understanding between officials of the authorities? e.g. CVO to Director of Fisheries.
- 2.5 Is there an understanding of the CVO network (CCEAD) and responsibilities to DPIE Canberra and the OIE?
- 2.6 There is a reporting mechanism for OIE listed fish diseases - is there an official responsible for this task and is there the knowledge for this?
- 2.7 Does the controlling legislation have control of private, public fresh waters and the ocean? What area of ocean?
- 2.8 Once a diagnosis of severe disease or exotic disease has been made, who makes the decision that quarantine and control should or should not be invoked? How long is this likely to take?

3.0 Logistics

Assuming the decision has been made to quarantine a local area and stamp out a disease in fin fish.

a) Personnel

- 3.1 Within the state how many officers have experience in control of fish disease?

- 3.2 How many officers with experience in animal disease control may be available? Whose permission needs to be sought for their use?
- 3.3 How many officers with experience in netting fish are available? Whose permission needs to be sought for their use?
- 3.4 Who will co-ordinate the task?
- 3.5 Where will the co-ordination team be based?
- 3.6 Do the officers need to be given further powers under other Acts? How long is the gazetting process?
- 3.7 Is there an agreement for use of other emergency personnel?

b) Movement control

- 3.8 Can a quarantine area be declared - private or public waters?
- 3.9 What personnel would be used to man check points?
- 3.10 Using what Act can movements of people and equipment be restricted into and out of a quarantine area?
- 3.11 Can equipment (e.g. nets) be required to be cleaned leaving a quarantine area?
- 3.12 Is there liaison set up with other authorities with responsibility for movement of water and water craft? Who is responsible for these? e.g. Port Authorities, Water Commissions.

c) Trace back

- 3.13 What personnel can be used to trace back and follow the epidemiology of the disease?

d) Local disease control centre

- 3.14 Is there expertise available to set up and operate a Local Disease Control Centre?
- 3.15 If the centre is set up by the Dept of Agriculture, what liaison functions are required within it to include fisheries expertise into the decision making?

e) Clean up

- 3.16 What chemicals are available for use? What are the environmental implications and is there a liaison link with the EPA or similar planned?
- 3.17 Where would the personnel required for a clean up come from? Supervisory and labour.

f) Surveillance

- 3.18 What surveillance of the local area fish population is possible? This may include fish farm visits and sampling of local wild populations.
- 3.19 What trained personnel are available for the task of surveillance?

g) Certification

- 3.20 Is there an on-going certification scheme which can be used to monitor health status of farmed/wild fish in the state on a long term basis?

h) Finances

3.21 Who pays for the disease control program?

3.22 Is any compensation available to aquaculture farmers?

3.23 Are there any plans for inclusion of fish in Federal or State compensation schemes?

i) Reporting

3.24 What personnel are available for reporting of progress to: Ministers, CCEAD, AQIS, OIE, industry, media? Who needs to be informed from these?

APPENDIX 17.7.1: Aquatic Animal Disease Preparedness Assessment - South Australia

NOTE: The record of meeting reflects the situation as of 1995. There have been significant changes in structures and personnel since that time. A report of the latest developments was supplied by Mr Carl Young, Manager of Aquaculture, PISA in 1997. These changes have been included in section 6.1; many of the deficiencies noted during the original meeting are currently being addressed.

Date: 5 December 1994

Venue

Head Office
Department of Agriculture
Grenville Centre
Grenville Street
Adelaide, SA

Participants

Geoff Neuman, Manager, Animal Health, CVO, SA
Vic Neveraskaus, Manager, Aquaculture and Environment, PISA, Fisheries
Jeff Todd, Regional Fisheries Officer, PISA, Fisheries
Peter Durham, Veterinary Pathologist, Deputy Manager, VetLab, Department of Agriculture
Grant Rawlin, Convenor of SCFH WP, Vet. Pathologist, Victorian Institute of Animal Science
Mark Crane, Member of SCFH WP, Project Leader, AAHL Fish Diseases Laboratory

i. Introduction

A general discussion on a number of issues was commenced during which responses to the directing questions were obtained. Following this general discussion, the group played out a scenario involving a disease emergency on a fully enclosed native fish farm.

RESPONSES TO DIRECTING QUESTIONS

1.0 Diagnosis

1.1 Is there a definition of "severe disease" or a list of notifiable fish diseases in the state?

A list of Notifiable Diseases is provided in Schedule 4 of the Regulations under the Fisheries Act 1982. The procedure for amending the list of Notifiable diseases is relatively straightforward. If necessary the Minister can authorise changes which can be gazetted within 24 hours. In addition, regulations relating to fish farming may prohibit, restrict or regulate the importation into the State, or possession, or control, of fish that may be affected by disease e.g. regulations relating to barramundi farms require imported fish to be free from picorna-like virus.

1.2 Is there a fish disease surveillance system present? i.e. where is a report of disease likely to come from?

In real terms a disease surveillance system does not exist not for fisheries nor for other livestock animals. Although certification of imported fish is required under the Fisheries Act 1982, a system of self-regulation exists within the fisheries industries, which due to insufficient resources, is difficult to police. The state encourages companies, for their own benefit and the benefit of the industry, to obtain stock from "certified" or otherwise reliable sources.

The protocol in current use for the detection of picorna-like virus of barramundi is available from Dr. Peter Durham, VetLab.

1.3 Does the state have veterinary laboratory backup with expertise in fish diseases?

Within the Dept. of Primary Industries (PISA), VetLab provides a diagnostic service for all livestock including farmed fish. Although a full-time fish pathologist is considered a high priority, resources to fund such a position do not exist. Thus, Peter Durham is released from animal disease work on an "as needed" basis depending on priorities. Clearly, fish and fish diseases are not considered a high enough priority to warrant a full-time fish pathologist. Currently, local government is working with industry in an attempt to develop a funding model. However, aquaculture is perceived as a competitive activity to fisheries confusing the issue of state funding vs. cost recovery. In reality aquaculture is a young industry but with considerable potential to develop into a significant asset for the State. It could be argued that government assistance for this developing industry would represent an investment by the State which in the longer term would be mutually beneficial.

Furthermore, the various activities [field services, policy, laboratory services and research] essential for efficient provision of veterinary services have been fragmented into sub-organisations [Animal Health, VetLab, PISA (Fisheries), South Australia Research & Development Institute (SARDI)] within the State department. As a consequence there is intensive competition not only for funding but also for some areas of responsibility. For example, in order to provide the best possible diagnostic service a certain amount of research and development is required and should involve diagnosticians to ensure the best possible outcome. However, there are no clear boundaries of responsibilities within the department sub-structure.

1.4 Is the primary diagnosis likely to be handled by which state department? Does this department have an understanding with AAHL for exotic disease diagnosis?

Although primary diagnosis is the responsibility of VetLab (Peter Durham) other laboratories, both private and public, [e.g. SARDI, Veterinary Pathology Services (VPS)] also tend to be involved in diagnostic activities. PISA sends all accessions to VetLab for diagnostic services but other veterinarians/consultants utilised by the aquaculture/fisheries industry may send samples to SARDI or VPS for diagnosis. Unless there is one central diagnostic service or at least fully open communication with VetLab there is potential for inappropriate action. Although VetLab is aware of its responsibilities with regard to disease reporting (for example to AAHL and other Commonwealth departments in the case of exotic disease exclusion etc.) it is unclear whether other diagnostic services are familiar with these procedures.

2.0 Legislative Responsibilities

2.1 If a severe disease is reported or diagnosed which authority/ies will be informed?

Notifiable diseases are reported to Primary Industries South Australia (PISA), Fisheries, for which, currently, the responsible officers are Vic Neverauskas or Jeff Todd. Accessions for diagnosis should be sent to VetLab. The officer responsible for diagnosis of fish diseases, currently, Peter Durham at VetLab, will inform PISA that samples for diagnosis have been submitted. Accessions should include full histories which has been a problem in the past. In addition, SARDI have been the initial point of contact on occasion. The reasons for this are historical. Industry tend to prefer to deal with particular individuals with whom they have built up a certain rapport over time. Thus, SARDI may use VPS rather than VetLab for diagnosis work. However, with reorganisations which tend to occur on a regular basis, individual and departmental responsibilities can change and, in addition, personnel can be relocated. Thus, there is a potential for a breakdown in communication. It is important that PISA is recognised as the central point of contact for disease reporting. PISA can then mobilise and coordinate the necessary resources to deal with each situation as it arises.

2.2 Which authority has the legislative responsibility for the control of an exotic or severe disease?

PISA is the authority which has the legislative responsibility for the control of an exotic or severe disease.

2.3 Has this legislation been used in the past to control severe disease and are there personnel in the controlling authority who have experience in its use?

Current legislation (fish farming regulations) is in use to deal with registrations and licences. Recent outbreaks of disease include picorna-like virus in barramundi (which is not on the current list of notifiable diseases), Goldfish Ulcer Disease caused by *Aeromonas salmonicida* (locating the source of the stock was problematical) and lymphocystis in snapper. Thus, there are two officers who have had some limited

experience with fish disease matters. However, these officers have other duties and it is possible that they will not always be available for fisheries related issues.

2.4 If the technical input is from a different authority, is there an understanding between officials of the authorities? e.g. CVO to Director of Fisheries.

Technical information required for the implementation of legislation should come from VetLab which, although not under the umbrella of the CVO, does maintain good communication with the CVO. However, as mentioned above, there may be other diagnostic services involved which do not keep PISA fully informed. Although desirable, there is no operations manual for fish disease outbreaks. Therefore it is not clear who has authority, there are no clear lines of command and there is no clear action plan in the event of a serious disease outbreak. Moreover, resources are inadequate.

Presently, there is too much flexibility in the system in which various authorities are given or take certain degrees of discretion. For land-based animals there is a clear disease outbreak response mechanism which is automatic and in which the CVO is given full authority. There is no such mechanism in place for fish disease outbreaks.

2.5 Is there an understanding of the CVO network (CCEAD) and responsibilities to DPIE Canberra and the OIE?

For livestock diseases, there is a cost-sharing agreement between the states for 12 diseases and there is a CVO network (CCEAD - Consultative Committee for Exotic Animal Diseases) in place to deal with such disease outbreaks. There is no equivalent set-up for fish diseases.

2.6 There is a reporting mechanism for OIE listed fish diseases - is there an official responsible for this task and is there the knowledge for this?

Not all departments are fully aware of the OIE fish diseases list which further emphasises the need for an operations manual and a central point of contact for reporting fish disease outbreaks.

2.7 Does the controlling legislation have control of private, public fresh waters and the ocean? What area of ocean?

Basically, if there is water involved then South Australian Fisheries have legislative authority over that body of water whether it is private, public, freshwater or the ocean including any body of water on aboriginal land/water. Legislation which could be invoked includes either the State Disaster Act or the Stock Act.

2.8 Once a diagnosis of severe disease or exotic disease has been made, who makes the decision that quarantine and control should or should not be invoked? How long is this likely to take?

Once a diagnosis of a severe/exotic disease has been made Fisheries officers have the power, based on recommendations from VetLab and The Fisheries Manager, to quarantine not only the affected property but also adjacent properties. Fisheries have the power to destroy stock, arrest individuals etc. Various State Acts can be invoked and actions gazetted within 24 hours.

3.0 Logistics

Assuming the decision has been made to quarantine a local area and stamp out a disease in fin fish.

Although there is no past experience in quarantine of a local area due to a serious fish disease outbreak and there is no operations manual, it is clear where certain authority and responsibilities should lie with respect to provision of personnel, movement control, trace-back, clean-up, surveillance, certification, finances and reporting.

a) Personnel

3.1 Within the state how many officers have experience in control of fish disease?

Within the state there is a total of 35 Fisheries Officers (30 are State-funded and 5 are Commonwealth-funded) two of which have had experience in control of fish diseases. In the event of a fish disease emergency the Manager of Fisheries Compliance would be responsible for allocation of these personnel.

3.2 How many officers with experience in animal disease control may be available? Whose permission needs to be sought for their use?

There are 15 field officers (3 veterinarians, 5 stock inspectors, 3 animal health officers, 4 livestock officers) with experience in animal disease who would be available from the Department of Agriculture but who, before redeployment, would require permission from the CVO after consultation with the 8 service managers.

3.3 How many officers with experience in netting fish are available? Whose permission needs to be sought for their use?

The 35 Fisheries Officers have experience netting fish and could be deployed by authority of the Manager of Fisheries Compliance.

3.4 Who will co-ordinate the task?

When the emergency involves diseases of exotic fish or farmed fish (aquaculture) then the task-force would be coordinated by the Manager of Aquaculture and Environment (currently, Vic Neverauskas) and the Regional Fisheries Officer (currently, Jeff Todd). Technical expertise would be provided by VetLab and legislative issues would be the responsibility of Fisheries.

3.5 Where will the co-ordination team be based?

The coordination team would be based at Head Office, Fisheries, Adelaide reporting to the Director of Fisheries who has ultimate authority (signatory) to order major actions such as destruction of fish stocks.

3.6 Do the officers need to be given further powers under other Acts? How long is the gazetting process?

Under current legislation (the Fisheries Act) Fisheries Officers have sufficient power to undertake all necessary actions. As stated above the gazetting process can be completed within 24 hours.

3.7 Is there an agreement for use of other emergency personnel?

Although there is no formal agreement, there are other personnel such as Animal and Plant Control Commission Officers, Wildlife and Parks Officers, Police who, while not trained specifically for fisheries, can be appointed as Fisheries Officers and made available for quarantine and control work.

b) Movement control

3.8 Can a quarantine area be declared - private or public waters?

Yes.

3.9 What personnel would be used to man check points?

In most incidences Fisheries Officers have the power to control movements in both public and private waters. If necessary check-points could be manned. Since certain officers are funded by specific sectors of the industry (eg. abalone) it would be appropriate to use those officers for emergencies in their respective industry sector.

- 3.10 Using what Act can movements of people and equipment be restricted into and out of a quarantine area?

Under the Fisheries Act and Regulations and the Pastoral Act, movement of all people and equipment into and out of a quarantine area, including tuna/oyster leases, can be controlled.

- 3.11 Can equipment (e.g. nets) be required to be cleaned leaving a quarantine area?

Disinfection of equipment can be enforced (State Disasters Act?).

- 3.12 Is there liaison set up with other authorities with responsibility for movement of water and water craft? Who is responsible for these? e.g. Port Authorities, Water Commissions.

In regard to the movement of water and water-craft in the ports, such as ballast water uptake and discharge, and control of boat movement, the Port Authorities would have responsibility.

c) Trace back

- 3.13 What personnel can be used to trace back and follow the epidemiology of the disease?

There are no personnel trained specifically for trace-back in fish diseases. In addition, currently, only 0.1 FTE (Peter Durham) is available for such trace-back and epidemiology work. It is likely that specific skills would need to be imported from other States or Commonwealth departments (eg. AAHL).

d) Local disease control centre

- 3.14 Is there expertise available to set up and operate a Local Disease Control Centre?

Expertise required to set-up and operate a Local Disease Control Centre (LDCC) can be provided by the Department of Agriculture.

- 3.15 If the centre is set up by the Dept of Agriculture, what liaison functions are required within it to include fisheries expertise into the decision making?

Clearly, liaison between Agriculture and Fisheries will be required for this centre to be fully effective. This issue needs to be addressed. For example, in order to set up a LDCC it is usually necessary to invoke the State Disaster Act which, presently, does not include Fisheries. In addition, access to specific fisheries expertise will also be required. For land animals, by a process of delegation, the CVO appoints a controller with the necessary expertise for the specific situation. For fisheries a list of people, with their area of expertise should probably be drawn up, so that appropriate personnel can be identified and recruited to the LDCC.

e) Clean up

- 3.16 What chemicals are available for use? What are the environmental implications and is there a liaison link with the EPA or similar planned?

The Agriculture Chemicals Act does not cover the use of chemicals for fish. Currently, the NRA is preparing for chemical registration within the Fisheries industry. To date, there has been some limited use of antibiotics. In addition, the EPA Act requires EPA approval for disposal of treated water. It is noteworthy that Permits to farm fish in natural water bodies are exempt from the EPA Act. Land-based operations which relocate water for their operation and return the "used" water into natural waters requires EPA approval.

- 3.17 Where would the personnel required for a clean up come from? Supervisory and labour.

Clearly, Fisheries Officers would be available to assist in the clean-up operation but such a force would not have sufficient expertise or resources to conduct the clean-up. Assistance would be required from contract personnel such as commercial clean-up operators. In addition, other groups could also be recruited. For example, the Department of Agriculture can use an engineering group from the Department of Transport for digging holes and carcass disposal and catering groups for support etc. All of these

resources are made available under the State Disaster Plan (NOTE: Although Fisheries are not included in the State Disaster Act, as yet, the state would be responsible for clean-up).

f) Surveillance

3.18 What surveillance of the local area fish population is possible? This may include fish farm visits and sampling of local wild populations.

Currently, no disease surveillance is undertaken due to lack of resources - both manpower and finances.

3.19 What trained personnel are available for the task of surveillance?

There are no personnel trained specifically in disease surveillance. Currently, SARDI, VetLab (technical advice) and Fisheries Officers (farm visits) can offer advice concerning disease surveillance to industry.

g) Certification

3.20 Is there an on-going certification scheme which can be used to monitor health status of farmed/wild fish in the state on a long term basis?

Currently, there is no on-going certification scheme which can be used to monitor health status of farmed/wild fish in the state on a long term basis. The farm owner pays for health certification of stock before importation into the state.

h) Finances

3.21 Who pays for the disease control program?

There is no budget item to cover a disease control program for fisheries.

3.22 Is any compensation available to aquaculture farmers?

There is no provision, as yet, for compensation for losses to aquaculture farmers.

3.23 Are there any plans for inclusion of fish in Federal or State compensation schemes?

To date, the industry runs on a "user pays" system. It may be possible to organise a mutual insurance policy/disaster fund with contributions by the participants.

i) Reporting

3.24 What personnel are available for reporting of progress to: Ministers, CCEAD, AQIS, OIE, industry, media? Who needs to be informed from these groups?

Even though Fisheries are not covered by the Act, reporting would mimic the procedures used as in the Stock Act. Clearly, it would be necessary to go to cabinet (and maybe industry) for funding. For land animals there is a state/Commonwealth cost-sharing agreement for 12 diseases of livestock. This agreement is based on the mutual benefit accrued to each state on the successful stamping out of any outbreak of these 12 diseases. The situation for aquaculture industries is not as clear-cut due to the variety of species farmed in the broad range of environments existing within Australia. Nevertheless, there are clear advantages to linking Fisheries into the State Disaster Plan. Networks are already in place for reporting to Ministers, CCEAD, AQIS, OIE, industry and the media etc. Moreover, powers under the Stock Act would be adequate for fish diseases, including issues concerning residues.

ii. SCENARIO: Disease outbreak on a fully enclosed native fish farm (e.g. a farm consisting of dams unconnected to other properties).

There is no clear aquatic disease action plan in place for South Australia. However, faced with this scenario the group (which consisted of key personnel in the event of a disease outbreak) played out the scenario the results of which could form the basis of an action plan.

1. Report of a fish disease outbreak comes into VetLab [NOTE: South Australia does not have a central point of contact such as a Fish Health Service. Consequently, fish farm operators could contact any one or more of several "experts" such as SARDI, VPS, PISA, private veterinarians, private consultants. Nevertheless, eventually, a report would come to VetLab].
2. Property is placed under quarantine and samples are taken for diagnosis by field officers and sent to VetLab.
3. VetLab informs CVO and Manager Aquaculture and Environment. CVO steering committee formed.
4. VetLab to coordinate technical matters (diagnosis) and keep steering committee informed. There may be limited knowledge of the property and a site visit by Jeff/Peter may be required. Assistance for diagnosis from AFDL and members of SCFH may be requested. [NOTE: Severely limited state resources are available to carry out diagnostic tests].
5. Diagnosis is obtained (eventually) and a decision on whether it is a problem of local or national importance is made.
6. If the disease is of only local significance the state takes care of the problem with the farmer. If the problem is specific to this one particular farm with no consequences for other properties (ie the farmer's problem) then user pays for services required.
7. If the disease has consequences at the state level then the state has to take action which may need to be funded by state funds.
8. If the disease is considered to be of national importance the CVO, Fisheries Manager and Fish Pathologist will meet and inform other state CVOs and AAHL or other reporting structure to be recommended (ARMCANZ/CCEAD?). There will be delegation of movement control to the Manager Aquaculture and Environment.

This is a limit of local capability with the current level of resources. If other properties become involved it is unlikely that current resources would be capable of handling the situation.

iii. OTHER ISSUES

FUNDING MODEL

Three to four years ago it was decided that the Dept of Fisheries should be completely funded by licence fees. Currently, fees fund approximately 50% of the department's services. Thus, logically, all licence fees need to be doubled. This is considered inequitable and it is recommended that fees should be doubled gradually over a ten year period so that a state of full cost recovery will exist within 10 years. This is complicated by the necessity of ensuring that money provided by individual industry groups (e.g. rock lobster industry) is used to service that particular industry.

Moreover, it is to be determined whether aquaculture and environment should come within this organisation or to be funded under a separate arrangement taking into consideration that aquaculture industries, relative to traditional fisheries, is young and in the process of development. For example, salaries and overheads for administrating the environment and aquaculture industry would come from state funds while funds required for the development of the industry could come from the beneficiaries (state? individuals?). As the industry develops over the next ten years the state commitment should decrease and the industry commitment would increase.

Date: 26th September 1994.

Venue

Department of Agriculture Offices and Laboratory Complex
Baron Hay Court
Perth. Western Australia

Participants

Dr John Edwards - Chief Veterinary Officer, WA. (Department of Agriculture)
Dr Mike Hine - Senior Fish Pathologist, (Department of Fisheries)
Dr Grant Rawlin - Working Party Member

Introduction

Due to a request from the State fish pathologist and CVO, this meeting was conducted before approval of funding for the project from FRDC. At the time, Western Australia Departments of Agriculture and Fisheries were undertaking a similar exercise "in-house" and it was appropriate to undertake the two exercises together. In addition, the fish pathologist, current at that time, was due to leave his position.

Developments after the meeting and after discussions with the, now current, fish pathologist (Dr. Brian Jones) have been added where appropriate.

RESPONSES TO DIRECTING QUESTIONS

1.0. Diagnosis

1.1 Is there a definition of "severe disease" or a list of notifiable fish diseases in the state?

A definition of severe disease was present in the Stock Disease Regulations Act 1968 which has now been replaced by the Stock Disease Regulations Act 1996. This Act applies to fish gazetted as 'Stock' under the Act.

Under the new Act there are listed notifiable diseases. i.e.

Part A (I) Diseases not present in Australia

Fish

Bacterial Kidney Disease
Viral Haemorrhagic septicaemia
Spring viraemia of carp
Oncorhynchus masou virus
Channel catfish virus disease
Infectious haematopoietic necrosis
Epizootic haematopoietic necrosis
Enteric septicaemia of catfish
Infectious salmon anaemia
Infectious pancreatic necrosis
Piscirickettsiosis
Encephalitis virus disease

Molluscs

Haplosporidium nelsoni
Iridovirus

Crustacean

Yellowhead monodon virus
Crayfish plague

Part C (I) Diseases of special significance for export or import or in relation to other programs, or to the state.

Aeromonas salmonicida
Anguillicola nematodes of eels
Epizootic ulcerative syndrome
Microsporidiosis in freshwater crayfish
Mycobacteriosis in any species
Bonamiosis
Perkinsosis
Marteiliosis
Microcytosis
Monodon baculovirus infection
Baculovirus penaei infection
Baculoviral midgut gland necrosis
Infectious hypodermal and haematopoietic necrosis

The CVO can also, under the Act, proclaim other diseases as needed.

The Exotic Disease Control Act 1993 is designed for use in the control of exotic diseases. The 12 terrestrial cost sharing exotic diseases are listed under the act but the Minister can declare a disease of any member of the animal kingdom under the Act. The Act applies both to land and water within state boundaries.

The Fisheries Resources Management Act 1994 can be used to help control outbreaks of disease as it can be used to restrict translocation of fish species throughout the state. Presently it refers to non-endemic species and Regulations are being developed to manage the translocation of aquaculture species and tropical aquarium fish.

1.2 Is there a fish disease surveillance system present. i.e. where is a report of disease likely to come from?

In the aquaculture situation, reports are likely from owners or Department of Fisheries, Aquaculture officers.

There is a program of health accreditation for Pearl Oysters operating in the North-western sector of the state and extending to Northern Territory.

1.3 Does the state have veterinary laboratory backup with expertise in fish diseases?

There is a fish pathology section operating at the central diagnostic facility of the Department of Agriculture, WA. The staff and partial funding is provided by the Department of Fisheries thus ensuring cooperation and communication between the departments.

1.4 Is the primary diagnosis likely to be handled by which state department? Does this department have an understanding with AAHL for exotic disease diagnosis?

Primary diagnosis is likely to be by Fisheries funded officers within the Department of Agriculture laboratory. Fish diseases are included under Acts used by the Department of Agriculture. Links are present with AAHL for exotic disease diagnosis. The fish pathology team works closely with terrestrial animal diagnosticians and there is a clear understanding of the terrestrial animal reporting networks.

2.0 Legislative Responsibilities

2.1 If a severe disease is reported or diagnosed which authority/s will be informed?

There is formal agreement between the Departments of Agriculture and Fisheries which ensures the sharing of information on fish diseases. The agreement also outlines a sharing of information and responsibilities for decision making during a disease response situation. The two departments are under the same Minister.

2.2 Which authority has the legislative responsibility for the control of an exotic or severe disease?

The Department of Agriculture (through Chief Veterinary Officer) will use the Stock Diseases regulation Act 1996 or Exotic disease of Animals Act 1994 as the situation dictates. The Fisheries Resources Management Act 1994 may be used to control fish movement on occasion. The latter Act is managed by Department of Fisheries. Agreements for cooperation of the two departments are in place.

2.3 Has this legislation been used in the past to control severe disease and are there personnel in the controlling authority who have experience in its use?

The Stock Disease Regulation Act, 1996 and its forerunner Stock Disease Regulation Act 1968, have been used frequently in the past for control of terrestrial animal diseases. Discussions have been held to pre-empt its use for fish.

2.4 If the technical input is from a different authority is there an understanding between officials of the authorities? e.g. CVO to Director of Fisheries.

Yes.

2.5 Is there an understanding of the CVO network (CCEAD) and responsibilities to DPIE Canberra and the OIE?

Yes, the OIE list diseases are notifiable under the Stock Diseases Regulation Act 1996.

2.6 There is a reporting mechanism for OIE listed fish diseases - is there an official responsible for this task and is there the knowledge for this?

Yes, the CVO is responsible for this task. The Fish Pathologist reports on these matter directly to the CVO who then acts and informs the Director of Fisheries. This system has been activated with the reporting of the presence of *Bonamia* in WA.

2.7 Does the controlling legislation have control of private, public fresh waters and the ocean? What area of ocean?

The Exotic Disease Control Act includes any place including any territorial waters.

2.8 Once a diagnosis of severe disease or exotic disease has been made, who makes the decision that quarantine and control should or should not be invoked? How long is this likely to take?

The under the Acts lies with the Minister of Agriculture in consultation with the Chief Veterinary Officer who will also consult with the Director of Fisheries.

3.0 Logistics

Assuming the decision has been made to quarantine a local area and stamp out a disease in fin fish.

a) Personnel

3.1 Within the state how many officers have experience in control of fish disease?

It is planned most field work in the event of a disease outbreak will be provided by Fisheries officers, although stock inspectors may be used when necessary. There are approximately 200 Fisheries staff.

3.2 How many officers with experience in animal disease control may be available? Whose permission needs to be sought for their use?

Stock inspectors may be used with the permission of the CVO.

3.3 How many officers with experience in netting fish are available? Whose permission needs to be sought for their use?

Most fisheries inspectors have experience in netting fish. They may be used with the permission of the director of fisheries.

3.4 Who will co-ordinate the task?

There is a team of staff trained in emergency disease in existence within the Department of Agriculture veterinary service which would be used to co-ordinate operations with the input of suitable staff from fisheries e.g. fish pathologist, fisheries scientists. The role of fisheries scientists in the co-ordination role is likely to increase during an outbreak as they work beside agriculture staff. There are plans to include fisheries staff in terrestrial exotic disease training exercises.

3.5 Where will the co-ordination team be based?

It is planned the state disease control centre will be at Department of Agriculture, Perth and the location of the Local Disease Control Centre would depend on the situation at hand.

3.6 Do the officers need to be given further powers under other Acts. How long is the gazetting process?

Fisheries inspectors would need to be gazetted under the Stock Disease Regulation Act to operate under the Act. This process can be accomplished overnight.

3.7 Is there an agreement for use of other emergency personnel?

Under Displan there are agreements for the use of emergency personnel e.g. there are links with SES, Police and CALM in the event of exotic diseases in terrestrial animals. These links are being developed to also include the agencies in the event of a disease outbreak in aquatic animals.

b) Movement control

3.8 Can a quarantine area be declared - private or public waters?

Yes, under the Stock Disease Regulations Act 1996

3.9 What personnel would be used to man check points?

Fisheries and Agriculture staff could be used for this task. Although in the case of a large operation, sustainability may be a problem. In large operations officers such as Police may be utilised.

3.10 Using what Act can movements of people and equipment be restricted into and out of a quarantine area?

Stock Disease Regulations Act 1996

3.11 Can equipment (e.g. nets) be required to be cleaned leaving a quarantine area?

Yes. Cleaning can be required both under the Fisheries Act and Stock Disease Regulations Act 1996.

3.12 Is there liaison set up with other authorities with responsibility for movement of water and water craft? Who is responsible for these? e.g. Port Authorities, Water Commissions.

Further negotiations are continuing on this issue.

c) Trace back

3.13 What personnel can be used to trace back and follow the epidemiology of the disease?

The fish health section would provide knowledge for epidemiological investigation. There is also epidemiological expertise available in the Animal Health services which are controlled by the CVO in this circumstance. On ground surveillance and advice would be provided by Fisheries officers.

As disease may be present in open water situations, a preliminary benefit analysis may be required to provide an indication of the need for action. In some situations there may be little that can be done, but in others there are control measures possible.

d) Local disease control centre

3.14 Is there expertise available to set up and operate a Local Disease Control Centre?

and

3.15 If the centre is set up by the Dept of Agriculture, what liaison functions are required within it to include fisheries expertise into the decision making?

There is a team of staff trained in emergency disease in existence within the Department of Agriculture veterinary service which would be used to co-ordinate operations with the input of suitable staff from fisheries e.g. fish pathologist, fisheries scientists. The role of fisheries scientists in the co-ordination role is likely to increase during an outbreak as they work beside agriculture staff. There are plans to include fisheries staff in terrestrial exotic disease training exercises.

e) Clean up

3.16 What chemicals are available for use. What are the environmental implications and is there a liaison link with the EPA or similar planned?

Further links with EPA are being pursued.

3.17 Where would the personnel required for a clean up come from? Supervisory and labour.

It is thought the system would follow that of the terrestrial animal disease planning. Unskilled labour needs would be met by casual labour under the supervision of Fisheries inspectors or possibly Stock inspectors.

f) Surveillance

3.18 What surveillance of the local area fish population is possible? This may include fish farm visits and sampling of local wild populations.

Fisheries officers are able to sample catches and industry can submit samples but there was a concern that the limited resources of the fish health unit would be quickly stretched. There is the

possibility of bringing in other terrestrial animal health staff, however these people would require training.

3.19 What trained personnel are available for the task of surveillance?

There are few field officers with training in fish disease although there are officers who have some of the skills required for this task. Some training before or during the event would be needed.

g) Certification

3.20 Is there an ongoing certification scheme which can be used to monitor health status of farmed/wild fish in the state on a long term basis?

A health monitoring program is in progress in pearl oysters in WA and the Northern Territory.

h) Finances

3.21 Who pays for the disease control program?

As there is understood to be no provision for commonwealth funds, the initial funding for a response would from State budget.

In longer term control programs it is thought a cost benefit assessment would be present to industry for possible industry contribution.

This industry contribution is already in operation in the case of levy collection from the pearl oyster industry for research.

3.22 Is any compensation available to aquaculture farmers?

and

3.23 Are there any plans for inclusion of fish in Federal or State compensation schemes?

There is no compensation requirement at present in the state system. The industries do not have contingency funds either. Part of the problem is the small size of some industries.

An understanding is needed with industry that at this stage there is no government compensation for this purpose.

i) Reporting

3.24 What personnel are available for reporting of progress to: Ministers, CCEAD, AQIS, OIE, industry, media. Who needs to be informed from these groups.

Reporting mechanisms trained for use by the CVO in the event of terrestrial disease outbreaks are available for use in this situation. The Departments of Agriculture and Fisheries are both under the same Minister.

Date: 14 December, 1995

Venue

6th Floor Conference Room
Marine Board Building
DPIF Head Office
Hobart, Tasmania

Participants

Dennis Witt, CVO, DPIF, Tasmania
Rod Oliver, Deputy CVO, DPIF, Tasmania
Simon Stanley, Manager, Marine Environment, DPIF, Tasmania
Roger Hall, Senior Management Officer, Marine Farming, DPIF, Tasmania
Will Zacharin, Acting Manager, Wild Fisheries, DPIF, Tasmania
John Preston, Assistant Management Officer, Marine Farming, DPIF, Tasmania
Judith Handlinger, Fish Pathologist, DPIF, Tasmania
Paul Hardy-Smith, Fish Veterinarian, DPIF, Tasmania
Kevin Lange, Manager, Salmon Ponds, Inland Fisheries Commission, Tasmania
Roger Jones, Principal, TEM Consultants, Victoria
Grant Rawlin, Principal Veterinary Officer, Bureau of Resource Sciences, DPIE, Canberra
Mark Crane, Project Leader, CSIRO AAHL Fish Diseases Laboratory, Victoria

Introduction

In his introductory remarks, Dennis Witt informed the participants that Tasmania was in between Acts. The Stock Act 1932 was about to be superseded by the new Animal Health Act 1996. The Animal Health Act *per se* has been developed but, as yet, Regulations under the Act are being developed. It is anticipated that the new Act will be proclaimed in March 1996.

RESPONSES TO DIRECTING QUESTIONS

1.0. Diagnosis

1.1 Is there a definition of "severe disease" or a list of notifiable fish diseases in the state?

The Animal Health Act covers all animals (including fish, molluscs and bees etc.) and disease in general. There is no definition of severe disease but a number of disease categories are being developed. These will include the following:

- All diseases exotic to Australia and are reportable immediately
- All diseases enzootic in Tasmania which are in need of control and which are reportable.
- Other known diseases which are not currently enzootic in Tasmania.
- "unknown" diseases ie Those cases where a disease is suspected and a veterinarian is required to be notified. Even where no "recognised disease" is suspected action such as quarantine can be gazetted within 24 hours. Indeed, under the new Act, any action deemed necessary by the visiting State veterinarian or Fisheries Officer is authorised.

1.2 Is there a fish disease surveillance system present. i.e. where is a report of disease likely to come from?

A formal fish disease surveillance system is in place for salmonids and for pacific oysters. Although DPIF has encouraged such a system for other industry sectors and to include submission of samples of all aquatic species, other sectors are less structured and are thus unlikely to have the same level of coverage as salmonid and pacific oyster industries. Mussels are covered for human healthy and safety by the food quality assurance program of the Inland and Wild Fisheries Division but there is no disease

surveillance, *per se*. Paul Hardy-Smith is the coordinator of the Tasmanian Salmonid Health Surveillance Program and education of the other sectors is part of the agenda.

1.3 Does the state have veterinary laboratory backup with expertise in fish diseases?

There is laboratory diagnostic services within DPIF with well-developed pathology and bacteriology. Samples for virology are sent to the AAHL Fish Diseases Laboratory.

1.4 Is the primary diagnosis likely to be handled by which state department? Does this department have an understanding with AAHL for exotic disease diagnosis?

Primary diagnosis is the responsibility of the Department of Primary Industry and Fisheries (Animal Industries) and has a good understanding and working relationship with AAHL for exotic disease diagnosis.

2.0 Legislative Responsibilities

2.1 If a severe disease is reported or diagnosed which authority/s will be informed?

Due to an active public education service, reports of suspected disease or fish kills are likely to come from the general public or the aquaculture industry either directly into DPIF or via Inland Fisheries, Sea Fisheries or the Department of Environment and Land Management.

2.2 Which authority has the legislative responsibility for the control of an exotic or severe disease?

Through the Animal Health Act, the Department of Primary Industry and Fisheries has the legislative responsibility for the control of exotic or severe disease.

2.3 Has this legislation been used in the past to control severe disease and are there personnel in the controlling authority who have experience in its use?

There have been incidences in the recent past of disease outbreaks eg. *Bonamia* and *Aeromonas salmonicida*, where the legislation has been invoked.

2.4 If the technical input is from a different authority is there an understanding between officials of the authorities? e.g. CVO to Director of Fisheries.

Policies and procedures are currently being formalised. Nevertheless, in the absence of formal procedures, there is good, open communication between the various agencies. Formalisation will ensure that procedure will occur.

2.5 Is there an understanding of the CVO network (CCEAD) and responsibilities to DPIE Canberra and the OIE?

There is a good understanding of the CVO network (CCEAD), responsibilities to DPIE, Canberra and the OIE.

2.6 There is a reporting mechanism for OIE listed fish diseases - is there an official responsible for this task and is there the knowledge for this?

The Office of the CVO (Dennis Witt, Rod Oliver) is responsible for reporting OIE listed fish diseases.

2.7 Does the controlling legislation have control of private, public fresh waters and the ocean? What area of ocean?

The new Animal Health Act will cover all state territories, including up to the 200 nautical mile limit to the south of Tasmania as detailed in the *Off-shore Constitutional Settlement Agreement* with the Commonwealth which includes management of marine resources. Although this agreement is in place it is clear that the responsibilities covered by the State and by the Commonwealth are not fully understood and that liaison with the appropriate Commonwealth officer (Campbell McGregor, DPIE, Canberra) is recommended to clarify State and Commonwealth responsibilities.

- 2.8 Once a diagnosis of severe disease or exotic disease has been made, who makes the decision that quarantine and control should or should not be invoked? How long is this likely to take?

The decision to impose a state of quarantine or control on an area is made by the CVO or his delegate. Under the new Act, for example, a Fisheries Officer can impose restrictions immediately based merely on a suspicion of disease (ie a List D disease) and retrospective written authority can be obtained within 24 hours from the CVO in consultation with the relevant agencies and industry. Ultimately, declaration of a control area requires written permission from the Minister and can be obtained in a short time period (maximum of 24 hours).

3.0 Logistics

Assuming the decision has been made to quarantine a local area and stamp out a disease in fin fish.

a) Personnel

- 3.1 Within the state how many officers have experience in control of fish disease?

Over the recent past, up to approximately 24 field/laboratory/administrative officers have gained experience in control of fish diseases.

- 3.2 How many officers with experience in animal disease control may be available? Whose permission needs to be sought for their use?

Up to 50 officers with experience in animal disease are available for redeployment. Ministerial written permission is required for the CVO to obtain direct line authority over personnel within the department.

- 3.3 How many officers with experience in netting fish are available? Whose permission needs to be sought for their use?

Approximately ten officers in marine operations and ten officers with experience in freshwater fisheries have experience in netting fish. Access to these personnel would be through the General Manager for Marine Resources and General Manager, Inland Fisheries Commission.

- 3.4 Who will co-ordinate the task?

CVO will have a central role in coordination of a "Consultative Group" the composition of which is under development.

- 3.5 Where will the co-ordination team be based?

The emergency disease "Consultative Group" during an outbreak would operate out of DPIF Head Office, Marine Board Building, Hobart.

- 3.6 Do the officers need to be given further powers under other Acts. How long is the gazetting process?

Under the new Act it is possible to recruit (via the gazetting process with 24 hours) other officers to be Fisheries Inspectors with either full or limited powers of search and seizure. All police officers are fisheries inspectors under the new Act.

- 3.7 Is there an agreement for use of other emergency personnel?

Based on AusVetPlan, there is agreement to have access to SES, Telecom etc. However, this agreement needs to be formalised which is under development.

b) Movement control

3.8 Can a quarantine area be declared - private or public waters?

Under the new Act a number of controllable areas have been defined and are distinct from a quarantine area which can be considered under quarantine for a number of reasons such as introduction of new stock and not necessarily related to disease.

Infected Place (IP):
Restricted Area (RA):
Control Area (CA):
Protected Area (PA):

In addition, the new Act also allows immunity to injunction.

3.9 What personnel would be used to man check points?

Stock Inspectors, Fisheries Officers, Police can be used to man check points.

3.10 Using what Act can movements of people and equipment be restricted into and out of a quarantine area?

Animal Health Act

3.11 Can equipment (e.g. nets) be required to be cleaned leaving a quarantine area?

Yes - defined as "fittings" in the new Act and which includes any equipment.

3.12 Is there liaison set up with other authorities with responsibility for movement of water and water craft? Who is responsible for these? e.g. Port Authorities, Water Commissions.

Marine Police

Fisheries Inspectors

"Notice to Mariners" - Marine Board of Hobart. Theoretically this is possible but in practice it would be difficult to implement. Liaison with relevant agencies needs to be established and the capability to implement control over movement needs to be established.

c) Trace back

3.13 What personnel can be used to trace back and follow the epidemiology of the disease?

Approximately 4-5 veterinarians with epidemiology skills are available who could supervise other recruited personnel. Farm records (stock on/off), especially for salmonid facilities, are available. Freshwater/Inland Fisheries also have good records of movement. Shellfish farms are not so well documented.

d) Local disease control centre

3.14 Is there expertise available to set up and operate a Local Disease Control Centre?

Expertise and capability to establish and operate a Local Disease Control Centre is available and would undertake this at the farm site.

3.15 If the centre is set up by the Dept of Agriculture, what liaison functions are required within it to include fisheries expertise into the decision making?

Fisheries and disease expertise resides within the same department (DPIF) and thus no problems are perceived.

e) Clean up

- 3.16 What chemicals are available for use. What are the environmental implications and is there a liaison link with the EPA or similar planned?

Routine disinfectants are available. There is no EPA, *per se*. There is liaison between the Marine Environment Branch (Simon Stanley) of DPIF and the Department of Environment and Land Management (DELM). Water treatment is relevant in some areas such as in ponds - a holding facility for chlorination is required. However, even a sophisticated operation such as Wayatinah hatchery is limited in its capacity to treat water. Local authorities are currently considering various available options.

- 3.17 Where would the personnel required for a clean up come from? Supervisory and labour.

As needed.

f) Surveillance

- 3.18 What surveillance of the local area fish population is possible? This may include fish farm visits and sampling of local wild populations.

Inland Fisheries (electrofishing, boats, nets etc.)
Marine Farming Branch (Fisheries Inspectors)

- 3.19 What trained personnel are available for the task of surveillance?

Under supervision of field vet.

g) Certification

- 3.20 Is there an ongoing certification scheme which can be used to monitor health status of farmed/wild fish in the state on a long term basis?

Salmonids
Pacific oysters

Other species - some monitoring - hoping to be developed

Wild fisheries - statistically relevant sampling? There is a need to abide by regulations concerning fishing vessels eg. restrictions on use of formal saline on fishing vessels.

h) Finances

- 3.21 Who pays for the disease control program?

*Government disease control program - authorised by the minister - government picks up the cost

*Industry-based disease control program - Industry to liaise with government and propose an appropriate funding model on a case-by-case basis.

- 3.22 Is any compensation available to aquaculture farmers?

Compensation agreement would be in place in an industry-based disease control program.

In government disease control program - compensation arrangements will be specified up-front - and may be specified as "none". There is no automatic compensation available. Salmon farms are insured but whether such insurance includes loss from disease would be between the individual farms and their insurance agent and presumably would attract a high premium which would be reduced if there is a surveillance program in place.

3.23 Are there any plans for inclusion of fish in Federal or State compensation schemes?

Since Tasmania has about 90% of the nation's equity in salmon and Pacific oysters it is likely that other states would view diseases of these species as a Tasmanian rather than national issue.

i) Reporting

3.24 What personnel are available for reporting of progress to : Ministers, CCEAD, AQIS, OIE, industry, media. Who needs to be informed from these groups.

OIE<----CCEAD<-----**CVO**----->minister----->media release

Chemical Usage

Paul Hardy-Smith to send details.

Essentially a vet can write a scrip for aquaculture even though there are no chemicals registered for use in aquaculture. In addition, it is possible for the farm operator to get chemicals directly from the supplier without using a vet.

The policy in Tasmania is to use chemicals as a last resort but of course this is a controversial issue. Consultation with industry would be appropriate for example if, tomorrow, Tasmania had an outbreak of classical furunculosis!

Date: 28 February 1996

Venue

DCNR (DNRE)
Melbourne, VIC.

Participants

Andrew Turner, CVO
John Humphrey, Head of Diagnostic Unit, VIAS
Ross Winstanley, Director of Fisheries and Aquaculture
Eva-Maria Bernoth, Fish Pathologist, AAHL
Grant Rawlin, WP member
Mark Crane, WP member.

Introduction

Following introductions proceedings were initiated by Andrew Turner making some general introductory remarks concerning relevant points and changes to the current legislation which had occurred recently in Victoria.

- **Licensing** - e.g. diseased livestock products would be allowed entry to Victoria, under license, for rendering.
- **Legislation** - Fish and shellfish are included as livestock in the *Stock Act*. Other relevant legislation includes the *Livestock Disease Control Act* and the *Fisheries Act 1995*.

RESPONSES TO DIRECTING QUESTIONS

Questions to be addressed by officers for understanding responsibilities during a severe disease outbreak.

1.0 Diagnosis

1.1 Is there a definition of "severe disease" or a list of notifiable fish diseases in the state?

There is a list of notifiable diseases which can be added to by order. Notification comes under Regulations - to be developed - within 24 hours? 7 days?

Regulatory impact statement
New regulations need to be written

1.2 Is there a fish disease surveillance system present. i.e. where is a report of disease likely to come from?

Peter Grant - extension service, accreditation surveillance scheme for aquaculture
Rangers
EPA
Private vets

Suspicion of disease is required to be reported by aquaculture facility to a vet or submission of samples to laboratory which is reported to Dept. Agriculture. If the report was to come to Fisheries it would be referred to Peter Grant. Farmers are required to report unexplained deaths (within what time period?)

The extension service includes visits to aquaculture facility by Peter Grant 4 times per annum (including twice in summer). It is a voluntary scheme with a nominal fee and involves FW salmonid

culture, goldfish farms and native fish facilities. It is likely that with the privatisation of Snobs Creek cost recovery will be phased in. Sectors not included are tropicals, yabbies, marine molluscs and crustacea and eels.

Stock Sellers Declaration & Liability Act requires that sale of products involves a declaration of disease freedom which provides a basis for premium pricing but also involves penalties for misinformation and provides some level of Quality Assurance.

1.3 Does the state have veterinary laboratory backup with expertise in fish diseases?

VIAS: John Humphrey. In addition, there is AAHL which is not the primary diagnostic laboratory for enzootic diseases but can be used for back-up and for exotic disease exclusion and other specialised services involving exotic diseases.

1.4 Is the primary diagnosis likely to be handled by which state department? Does this department have an understanding with AAHL for exotic disease diagnosis?

Dept. Agriculture. The department has a good relationship with AAHL.

2.0 Legislative Responsibilities

2.1 If a severe disease is reported or diagnosed which authority/s will be informed?

A disease report is likely to come through DNRE (Ross) who would contact Peter Grant and with VIAS (John Humphrey) would coordinate collection of samples. John would contact CVO who, if deemed necessary (in the event of a serious disease) would contact the Departmental Secretary who would inform the Minister.

2.2 Which authority has the legislative responsibility for the control of an exotic or severe disease?

Under the Livestock Disease Control Act the Department of Agriculture (CVO) in concert with DNRE (Ross). In addition, when it is not clear whether the fish kill is due to an infectious disease or pollutant the EPA (John Laurey) should be contacted under the Fish Kill Response Plan. For toxic algal blooms, in particular for shellfish, Health and Community Services are also contacted.

2.3 Has this legislation been used in the past to control severe disease and are there personnel in the controlling authority who have experience in its use?

Since it is a relatively new act, it has not been used for fish or shellfish disease emergencies - there has been no need.

Note that for EHN (enzootic in Victoria) EHN eradication is voluntary rather than under legislative control ie. there is no eradication scheme in place.

2.4 If the technical input is from a different authority is there an understanding between officials of the authorities? e.g. CVO to Director of Fisheries.

There is good communication between CVO/Fisheries.

2.5 Is there an understanding of the CVO network (CCEAD) and responsibilities to DPIE Canberra and the OIE?

Yes

2.6 There is a reporting mechanism for OIE listed fish diseases - is there an official responsible for this task and is there the knowledge for this?

Yes

- 2.7 Does the controlling legislation have control of private, public fresh waters and the ocean?
What area of ocean?

Legislation can be applied to Victorian Waters (any water in Victoria) under *Fisheries Act*.

- 2.8 Once a diagnosis of severe disease or exotic disease has been made, who makes the decision that quarantine and control should or should not be invoked? How long is this likely to take?

Under the Act any inspector can make the decision for a quarantine order and negotiate that with the property owner. The quarantine order can be in place within 24 hours. There is a capability for a rapid response and the formation of a joint Dept. Agriculture/Fisheries expert team.

3.0 Logistics

Assuming the decision has been made to quarantine a local area and stamp out a disease in fin fish.

a) Personnel

- 3.1 Within the state how many officers have experience in control of fish disease?

John Humphrey
Brett Ingram
Peter Grant
Training is required for inspectors

- 3.2 How many officers with experience in animal disease control may be available? Whose permission needs to be sought for their use?

60+ in Department of Agriculture reporting to CVO
60+ Fisheries and Wildlife Officers in Division of Flora, Fauna and Fisheries

A manual of procedures is to be developed and is expected to propose 3 types of Livestock Inspectors: (I) mammals and birds; (II) bees; (III) Fish

- 3.3 How many officers with experience in netting fish are available? Whose permission needs to be sought for their use?

60+ as above

- 3.4 Who will co-ordinate the task?

John Humphrey with Fisheries personnel

- 3.5 Where will the co-ordination team be based?

At a local disease centre in communication with VIAS

- 3.6 Do the officers need to be given further powers under other Acts? How long is the gazetting process?

Appointment of Inspectors of Fish - 24 hours

- 3.7 Is there an agreement for use of other emergency personnel?

Yes - details?

b) Movement control

3.8 Can a quarantine area be declared - private or public waters?

Yes

3.9 What personnel would be used to man check points?

DNRE field staff to be coordinated with Police.

3.10 Using what Act can movements of people and equipment be restricted into and out of a quarantine area?

Livestock Control Act (after declaration of an exotic disease)

3.11 Can equipment (e.g. nets) be required to be cleaned leaving a quarantine area?

Yes

3.12 Is there liaison set up with other authorities with responsibility for movement of water and water craft? Who is responsible for these? e.g. Port Authorities, Water Commissions.

Ballast water, toxic phytoplankton blooms, environmental issues. Water authorities?

c) Trace back

3.13 What personnel can be used to trace back and follow the epidemiology of the disease?

No epidemiology expert but there are some personnel with some training.

d) Local disease control centre

3.14 Is there expertise available to set up and operate a Local Disease Control Centre?

Yes

3.15 If the centre is set up by the Dept of Agriculture, what liaison functions are required within it to include fisheries expertise into the decision making?

LDCC would be set up jointly between Department of Agriculture and Fisheries

e) Clean up

3.16 What chemicals are available for use. What are the environmental implications and is there a liaison link with the EPA or similar planned?

Chlorine disinfectants. Rotenone? Liaison with EPA?

3.17 Where would the personnel required for a clean up come from? Supervisory and labour.

DNRE staff; Dept. Ag.; EPA; Farm personnel. Other specialised equipment and expertise may be required.

f) Surveillance

3.18 What surveillance of the local area fish population is possible? This may include fish farm visits and sampling of local wild populations.

DNRE - collection of samples to be forwarded to VIAS

3.19 What trained personnel are available for the task of surveillance?

DNRE

g) Certification

3.20 Is there an ongoing certification scheme which can be used to monitor health status of farmed/wild fish in the state on a long term basis?

Farmed fish - Yes

Wild fish - No

h) Finances

3.21 Who pays for the disease control program?

On a case-by-case basis and negotiated between the property owner and the State.

3.22 Is any compensation available to aquaculture farmers?

None apart from normal legislation governing liability etc.

3.23 Are there any plans for inclusion of fish in Federal or State compensation schemes?

No

i) Reporting

3.24 What personnel are available for reporting of progress to : Ministers, CCEAD, AQIS, OIE, industry, media. Who needs to be informed from these groups.

Reporting procedures are well-tried.

OTHER ISSUES

Other issues were discussed including notifiable diseases and a high priority item was *Aeromonas salmonicida* infections and exotic vs enzootic diseases (see below).

List of Notifiable Diseases

Furunculosis in Salmonids (exotic) vs GUD in ornamental fish (enzootic)

There needs to be a definition for these diseases distinguishing furunculosis and other exotic diseases caused by *Aeromonas salmonicida* and goldfish ulcer disease and other diseases caused by enzootic isolates of *Aeromonas salmonicida*. The definitions should include consideration of the following:

1. GUD involves a different sub-species of *A. salmonicida* than that which causes furunculosis
2. GUD occurs in species other than goldfish e.g. in silver perch
3. *Aeromonas salmonicida* in fish - Immediate (12 hours rather than 7 days) notice should be required.
4. Reporting of enzootic vs exotic diseases - Exotic and enzootic diseases are distinguished in the legislation and invokes different levels of power.

Introduction

The trip to Queensland involved discussions with several groups which are involved with various aspects of disease diagnosis and management of disease outbreaks. Moreover, Queensland was, at the time, currently review its legislation and any additional comments which have resulted from actions subsequent to the meetings have been added in *italics*, in an attempt to maintain this report current.

I. MEETING 1

Date: 30 October 1995 AM

Venue

University of Queensland
Brisbane

Participants

Dr. Bob Lester, Dept. Parasitology
Dr. Rob Adlard, Dept. Parasitology, Director, Aquatic Diagnostic Services International Pty Ltd
Dr. Grant Rawlin, Working Party Member
Dr. Mark Crane, Working Party Member

Discussed fish disease issues and, in particular, discovery and reporting of "new" prawn viruses. Emphasised the need to incorporate university activities into a reporting scheme for QDPI. It was noted that QLD does not have a list on notifiable fish diseases.

Introduced the idea of a fish disease conference to obtain and document baseline data on occurrence and prevalence of disease/pathogens/viruses which would also include a session on legislation/regulations, disease reporting and emergency disease action plans.

The need for collaboration was also discussed in the sense that there needed to be a pooling of resources so that there was no duplication of work and that all interested parties would benefit from the varied skills available at different institutions e.g. QDPI, CSIRO and others.

A research proposal to develop cell lines for prawn virus research was mentioned and there was positive feed-back - they would certainly be interested in such a proposal. It was also emphasised that, if successful, it would be considered generic technology which may well be transferable to molluscs.

Subsequent to the meetings held in Queensland an informal group of researchers with interests in viral diseases of prawns (the prawn virus research group) was formed to assist in coordination of research in this area as well as the initiation of new research projects on prawn diseases.

II. MEETING 2

Date: 30 October 1995 PM

Venue

Animal Research Institute
QDPI
Yeerongpilly

Participants

Dr. Peter Ketterer, Head, Diagnostic Unit
Dr. Grant Rawlin, Working Party Member
Dr. Mark Crane, Working Party Member

QDPI currently undergoing an external review. Currently, not a lot of fish work is carried out at ARI. Lorraine Eaves and Young Chung have left. Although there is parasitology, bacteriology and virology (fish cell lines and viruses frozen) capability there is not any depth of expertise or experience available. The majority of fish work involves investigation of fish kills which for the most part appear to linked with pollution of waterways. However, it is very difficult to prove anything and it is unusual for any prosecution to follow.

III. MEETING 3

Date: 31 October 1995

Venue

Head Office
QDPI
Brisbane

Participants

Jim Gillespie, Manager for Aquaculture
Ian Anderson, Fish Pathologist, Oonoonba
Mike Dredge, Regional Officer
Carl Young, Fisheries Officer, Head Office
Grant Rawlin, BRS, Working Party Member
Mark Crane, AAHL, Working Party Member
Roger Jones, Consultant, TEM.

Introduction

Jim Gillespie outlined the structure of QDPI demonstrating its three tier structure:

- I. Groups e.g. Resource Management group which includes Land, Fish, Forestry and Water.
- II. Programs e.g. Resource Management (Water, Fish), Agriculture (Animal Health Bureau) and Industry Sectors which would include Aquaculture.
- III. Regions - North, Central, West, South and South-east.

Brisbane tends to be policy and the regions - operations.

Thus some projects can span different groups, programs and regions e.g. Fisheries vs Aquaculture.

RESPONSES TO DIRECTING QUESTIONS

1.0 Diagnosis

- 1.1 Is there a definition of "severe disease" or a list of notifiable fish diseases in the State?

No clear definition of severe disease. QLD needs to come up with a list of notifiable diseases (Draft lists have now been developed and submitted for public comment). Not easy - because as new fish species are farmed new disease agents will be identified. Also needs to be established in consultation with industry. In addition, fish kills due to water quality problems - not infectious disease - not the responsibility of QDPI Fisheries but comes under Environment - DEH - Department of Environment and Heritage. Queensland is looking for recommendations from the Commonwealth.

Recently, a list of declared diseases has been prepared and has been circulated for stakeholder comment. The list includes diseases of International, Australian and Queensland significance and allows for action on diseases which cannot be accurately identified but appear to represent a significant threat, therefore requiring a significant response. Preparation of a final list is currently underway.

Severe disease is defined as one which has International, National or State economic, environmental or social significance.

1.2 Is there a fish disease surveillance system present? i.e. where is a report of disease likely to come from?

Two areas Fisheries and Aquaculture:

Fisheries: General Public
local research centre
QFMA
Fisheries patrol officer

Aquaculture: Consultants (e.g. Steven Pyecroft)
Fisheries centres (Deception Bay, Bribie Island)
Universities
VPS

Under the *Fisheries Act 1994* (Section 100) “a person who knows or reasonably suspects fisheries resources or a fish habitat is showing signs of disease, or knows or reasonably suspects disease may be in fisheries resources or a fish habitat, must immediately notify the Chief Executive or an inspector”. The maximum penalty is 2,000 penalty units.

This expectation is independent of a notifiable disease list. Once reported, QDPI emergency response procedure will be implemented. The extent of this action is at the discretion of the Executive Director (Fisheries) under the advice from fish health experts.

Ornamental fish - licensing? It is recognised that there can be little, if any, policing of backyard operators and ornamental fish licensing is currently being addressed.

1.3 Does the state have veterinary laboratory back-up with expertise in fish diseases?

OVL, YVL - Resourcing? Industry report/diverse industry

Peter Ketterer, YVL, Fish and crustacea
Ian Anderson, OVL, Fish and crustacea
John Norton, OVL, molluscs
Bob Lester, UQLD, molluscs

Two new positions were created in 1997 for Veterinary Officers (Fish Health). One based in the North (Oonoonba Vet. Lab. Townsville) and one in the South (Animal Research Institute, Yeerongpilly).

QLD Specifics

Large state with a lot of water prone to climatic changes resulting in a lot of fish kills which do not get investigated especially in cotton growing areas where endosulphan is used. In addition, it depends on the area involved. If it is a high population area, endosulphan-associated kill can cause a bit of a stir. If it occurs in a low population area then it may not even be reported. Thus there is significant inconsistencies. Nevertheless, fish kills should be reported under Section 100 of the *Fisheries Act 1994*.

Laboratory reporting system: Within an agency the diagnostician will report to the manager. Universities tend to be somewhat independent of the reporting system.

1.4 Is the primary diagnosis likely to be handled by which state department? Does this department have an understanding with AAHL for exotic disease diagnosis?

Interim contingency plan - to be provided - faxed that day. For mortalities associated with Fisheries (rather than aquaculture) environmental causes will be considered first. 95% of fish kills are due to water quality problems. Infectious disease investigation will be considered second (Peter Ketterer in the south/Ian Anderson in the north).

2.0 Legislative Responsibilities

2.1 If a severe disease is reported or diagnosed which authority/s will be informed?

Peter K.

Ian A. reports to Regional Services Manager, Division of Fisheries to DEH and to CVO.

John N.

There is a draft Departmental procedure for disease or suspected disease outbreaks

2.2 Which authority has the legislative responsibility for the control of an exotic or severe disease?

QDPI Division of Fisheries - Director General. Delegated to Executive Director, General Manager, Fisheries.

2.3 Has this legislation been used in the past to control severe disease and are there personnel in the controlling authority who have experience in its use?

No. Previous legislation did not address anything except oyster leases.

Ian Douglas (PVO)

There are grounds for appeal - Industry consultation required but decision stands pending appeal.

2.4 If the technical input is from a different authority is there an understanding between officials of the authorities? e.g. CVO to Director of Fisheries.

Reporting to Fisheries which would report to CVO (consult with Ian Douglas). Fish are not included in the Stock Act.

2.5 Is there an understanding of the CVO network (CCEAD) and responsibilities to DPIE Canberra and the OIE?

No - needs to be clarified. Dan Curry, GM Fisheries (formerly with QLD Quarantine).

2.6 There is a reporting mechanism for OIE listed fish diseases - is there an official responsible for this task and is there the knowledge for this?

Needs to be clarified - O.I.E. list?

The draft Declared Diseases List covers all of the OIE notifiable diseases and the diagnostic laboratories are aware of these and their responsibility for reporting.

2.7 Does the controlling legislation have control of private, public fresh waters and the ocean? What area of ocean?

Yes - including indigenous waters but these matters would be handled "sensitively".

2.8 Once a diagnosis of severe disease or exotic disease has been made, who makes the decision that quarantine and control should or should not be invoked? How long is this likely to take?

Chief Executive delegated to GM, Fisheries in consultation with the Regions. It may be necessary to go as high as required with due respect to "politics". Again, disease list is required.

Order to Quarantine/control of movement can be put in place within 24 hours.

3.0 Logistics

Assuming the decision has been made to quarantine a local area and stamp out a disease in fin fish.

a) Personnel

3.1 Within the state how many officers have experience in control of fish disease?

Technical issues are covered (3 veterinarians) - so the knowledge is there but the protocols are not. 6 at Bribie. A total of approximately 12 - treatment, quarantine, disease spread etc.

Jim Gillespie in consultation with Region.
Regional Director in consultation with DG.

3.2 How many officers with experience in animal disease control may be available? Whose permission needs to be sought for their use?

VO, stock officers etc via CVO
Executive Directors, IS
Regional Manager would undertake the "horse-trading".

Two new fish health Veterinary Officer positions have been added to this capacity (see above).

3.3 How many officers with experience in netting fish are available? Whose permission needs to be sought for their use?

150-200 "technical staff". General Manger, Fisheries.

3.4 Who will co-ordinate the task?

Regional Director or his delegate would coordinate.

3.5 Where will the co-ordination team be based?

Within the region - a site selected based on access to services, access to outbreak etc. - nearest DPI centre.

3.6 Do the officers need to be given further powers under other Acts? How long is the gazetting process?

Fisheries inspectors (approx. 100) have automatic right of entry and have authority to implement actions relating to a "declared quarantine area". Other officers are not empowered by other acts to become "temporary fisheries inspectors".

3.7 Is there an agreement for use of other emergency personnel?

Other persons can be appointed (P. 83). Legislation in place - regulations to follow. No formal agreement but can be put in place (Ian Douglas).

There are "counter disaster" arrangements in place - to be clarified. Development of contingency plan is planned.

Development of a generic contingency plan for disease outbreaks is almost complete. Specific disease contingency plans will be based on the forthcoming national plans and a QDPI officer is involved in the writing group for the SCARM/SCFA Aquatic Animal Disease Emergency Contingency Planning Group.

b) Movement control

3.8 Can a quarantine area be declared - private or public waters?

Yes - under Fisheries Act.

3.9 What personnel would be used to man check points?

Boating and Fisheries Patrol
Police
SES

Use departmental resources first and then other state resources if necessary.

3.10 Using what Act can movements of people and equipment be restricted into and out of a quarantine area?

Fisheries Act. Aquaculture can be controlled, probably. In open fisheries - in theory control can be implemented. There are provisions for closure over-night. Policing is dependent on the area. If industry sees a good reason and the area of aquaculture is relatively small - OK. If it is a recreational fishery - very difficult to implement. Depending on the seriousness of the event, resources are available but policing would be a problem.

3.11 Can equipment (e.g. nets) be required to be cleaned leaving a quarantine area?

Yes - Fisheries Act.

3.12 Is there liaison set up with other authorities with responsibility for movement of water and water craft? Who is responsible for these? e.g. Port Authorities, Water Commissions.

i) Water craft

Dept of Transport - boating & boating safety
Boating patrol (DPI) are the enforcement agency.

Fisheries Act - "All waters"

Liaison with Port Authorities required.

Port Authorities are very powerful - may not take any notice of quarantine order. Need to be included in the Task Force.

ii) Water

Aquaculture - water discharge permit (DEH)
Fisheries Act 9.5.3.
Fisheries - If controllable river, in theory, it can be implemented, but water resources are more concerned with providing water - fish "get in the way".

Diagnosis takes time - what would be the rationale.

c) Trace back

3.13 What personnel can be used to trace back and follow the epidemiology of the disease?

Animal Health Bureau personnel required
Fisheries/Aquaculture - no expertise
Boating patrol
VO - team of fisheries/vets

d) Local disease control centre

3.14 Is there expertise available to set up and operate a Local Disease Control Centre?

LDCC - In certain areas easy to set up - in other areas not so easy. Mackay, Cairns - can be done easily. In other areas there would be a need to fly personnel and technology in. If it is for an extended period of time - use CCEAD to bring assistance from interstate - Consult with PVO.

3.15 If the centre is set up by the Dept of Agriculture, what liaison functions are required within it to include fisheries expertise into the decision making?

There should be no problem to put a team of experts together from Fisheries/Agriculture.

e) Clean up

3.16 What chemicals are available for use? What are the environmental implications and is there a liaison link with the EPA or similar planned?

e.g. MCMS. Drain pond and treat. 100mg active chlorine/litre and then let chlorine "blow off" (2 weeks) before restocking (DEH was happy). BUT It is dependent on Regional Director. Communication across regions, between departments etc. can be a problem - lack of consistency - is communication effective.

Iodophors)
Chlorine) Liaise with environmental departments.
Formalin)
NaOH)

Rotenone? Clean up. Essentially deal with the problem first and then communicate with other departments.

3.17 Where would the personnel required for a clean up come from? Supervisory and labour.

- i) Aquaculture - owner
- ii) Fisheries - State authorities
- iii) Health issues - emergency funds available from Treasury.

May require action and then money matters get worked out later. e.g. The owner may not have the appropriate equipment.

f) Surveillance

3.18 What surveillance of the local area fish population is possible? This may include fish farm visits and sampling of local wild populations.

If in a remote area - difficult but you do it. It is more likely to occur in a "busy" area and it could be done.

3.19 What trained personnel are available for the task of surveillance?

Extension officers
Epidemiologist involvement
Fisheries officers are trained for this.

g) Certification

3.20 Is there an ongoing certification scheme which can be used to monitor health status of farmed/wild fish in the state on a long term basis?

No - no resources
Will be required - barramundi, prawns

h) Finances

3.21 Who pays for the disease control program?

Owner

3.22 Is any compensation available to aquaculture farmers?

There is a provision in the Fisheries Act, 1994.

3.23 Are there any plans for inclusion of fish in Federal or State compensation schemes?

No plans

i) Reporting

3.24 What personnel are available for reporting of progress to: Ministers, CCEAD, AQIS, OIE, industry, media? Who needs to be informed from these groups?

Systems in place.

IV. SCENARIO

- i. Report of an incident can come in from various sources but eventually gets to QDPI.
- ii. Diagnosis from either Ian Anderson or Peter Ketterer. Ian would send samples to ARI for virology and may involve AAHL.
- iii. Regional Manager is advised who communicates with DEH, RD, Division/sub-program.
- iv. Regional director communicates with Executive Director and CVO.
- v. Executive Director informs Director General who informs the Minister
- vi. CVO informs CCEAD.
- vii. The minister seeks legal counsel and consults with DG, RD, ED and executive decision to set up a REGIONAL TASKFORCE is made. A quarantine order is issued - details required - what powers are sought etc.

REGIONAL TASKFORCE (North region venue would be Townsville or Cairns)

Chaired by the Regional Manager or Delegate.

Regional Aquaculture Manager

Fish Pathologist (Ian Anderson)

PVO (epidemiology expert)/Regional livestock inspectors

Media Liaison

Industry representative - e.g. barramundi industry rep., NQACC

QUARANTINE

- i. Water control
- ii. Visitor control
- iii. Product control
- iv. Equipment control
- v. Disease control options:
 - a) Emergency harvest for prawns - import equipment and personnel and cook on-site.
 - b) Destroy finfish, bury with lime in a suitable site.
 - c) Treatment?
- vi. Disease management:
 - Trace-back
 - Surveillance - farms/waterways
- vii. Communication (media liaison)
- viii. Stop Order (Regional Manager)

V. MEETING 4

Date: 1 November 1996

Venue

James Cook University
Townsville

Participants

Dr. Robert Coelen, Department of Biomedical and Tropical Veterinary Sciences
Dr. Ian Anderson, QDPI
Dr. Mark Crane, AAHL, Working Party Member

There is a good understanding and collaborative arrangement between JCU and QDPI, Oonoonba Veterinary Laboratory. Communication between staff of JCU and QDPI is excellent with a number of collaborative research projects involving staff from both institutes. These projects, some of which are funded by industry, are concerned with development of diagnostic tools for infectious agents currently present in aquatic animal populations and which could cause disease outbreaks.

Date: 13 June 1996

Venue

NSW Fisheries
Sydney Fish Market
Pyrmont, Sydney, NSW

Participants

Ian Bell, NSW Department of Agriculture
Ian Lyall, NSW Fisheries
Dan Liska, NSW Fisheries
Mike Heasman, NSW Fisheries
Dick Callinan, NSW Department of Agriculture
Grant Rawlin, Working Party Member
Mark Crane, Working Party Member

Introduction

Paul O'Connor and Rick Fletcher, Directors, NSW Fisheries, addressed the meeting and expressed their support for preparation of disease emergency contingency documentation.

RESPONSES TO DIRECTING QUESTIONS

1.0 Diagnosis

1.1 Is there a definition of "severe disease" or a list of notifiable fish diseases in the state?

Yes

1.2 Is there a fish disease surveillance system present? i.e. where is a report of disease likely to come from?

Very limited - surveillance of post-larvae on prawn farms

1.3 Does the state have veterinary laboratory backup with expertise in fish diseases?

Dick Callinan
Richard Whittington

1.4 Is the primary diagnosis likely to be handled by which state department? Does this department have an understanding with AAHL for exotic disease diagnosis?

Department of Agriculture - Dick Callinan possibly in consultation with Richard Whittington and cooperation from Department of Fisheries, if necessary.

2.0 Legislative Responsibilities

2.1 If a severe disease is reported or diagnosed which authority/ies will be informed?

NSW Agriculture/Fisheries

2.2 Which authority has the legislative responsibility for the control of an exotic or severe disease?

NSW Agriculture/Fisheries

- 2.3 Has this legislation been used in the past to control severe disease and are there personnel in the controlling authority who have experience in its use?

Not aquatic animal diseases

- 2.4 If the technical input is from a different authority is there an understanding between officials of the authorities? e.g. CVO to Director of Fisheries.

There is now?

- 2.5 Is there an understanding of the CVO network (CCEAD) and responsibilities to DPIE Canberra and the OIE?

Yes

- 2.6 There is a reporting mechanism for OIE listed fish diseases - is there an official responsible for this task and is there the knowledge for this?

Yes - Dick Callinan for fish diseases

- 2.7 Does the controlling legislation have control of private, public fresh waters and the ocean? What area of ocean?

Need to check on this

- 2.8 Once a diagnosis of severe disease or exotic disease has been made, who makes the decision that quarantine and control should or should not be invoked? How long is this likely to take?

Need to check on this

3.0 Logistics

Assuming the decision has been made to quarantine a local area and stamp out a disease in fin fish.

a) Personnel

- 3.1 Within the state how many officers have experience in control of fish disease?
- 3.2 How many officers with experience in animal disease control may be available? Whose permission needs to be sought for their use?

Needs clarification

- 3.3 How many officers with experience in netting fish are available? Whose permission needs to be sought for their use?

Needs clarification

- 3.4 Who will co-ordinate the task?

?

- 3.5 Where will the co-ordination team be based?

?

3.6 Do the officers need to be given further powers under other Acts? How long is the gazetting process?

Ian Lyall to check?

3.7 Is there an agreement for use of other emergency personnel?

No formal agreement with Police Department but there is a good cooperative relationship between the two departments. Whether this is supported by legislation should be checked. Other linkages to be established include other government departments, industry bodies and charitable organisations etc.

Fish are not included in the State Disaster Plan

b) Movement control

3.8 Can a quarantine area be declared - private or public waters?

Yes

3.9 What personnel would be used to man check points?

None identified - would probably use local fisheries officer or farm staff

3.10 Using what Act can movements of people and equipment be restricted into and out of a quarantine area?

Fisheries Act

3.11 Can equipment (e.g. nets) be required to be cleaned leaving a quarantine area?

Yes

3.12 Is there liaison set up with other authorities with responsibility for movement of water and water craft? Who is responsible for these? e.g. Port Authorities, Water Commissions.

No formal mechanism known

c) Trace back

3.13 What personnel can be used to trace back and follow the epidemiology of the disease?

Dick Callinan and Richard Whittington to coordinate with Fisheries officers

d) Local disease control centre

3.14 Is there expertise available to set up and operate a Local Disease Control Centre?

None in Fisheries. Department of Agriculture are well-resourced

3.15 If the centre is set up by the Dept of Agriculture, what liaison functions are required within it to include fisheries expertise into the decision making?

Department of Agriculture to liaise with Fisheries

e) Clean up

3.16 What chemicals are available for use? What are the environmental implications and is there a liaison link with the EPA or similar planned?

Disinfectants such as chlorine are not regulated by the EPA but EPA would be informed. Therapeutics covered by NRA and State Departments. A national Task Force on Chemical Usage in Aquaculture is reviewing the situation - there is a need to communicate with this Task Force.

3.17 Where would the personnel required for a clean up come from? Supervisory and labour.

Fisheries officers/farm staff. Extra equipment?

f) Surveillance

3.18 What surveillance of the local area fish population is possible? This may include fish farm visits and sampling of local wild populations.

EHNV

3.19 What trained personnel are available for the task of surveillance?

None. Also protocols required etc.

g) Certification

3.20 Is there an ongoing certification scheme which can be used to monitor health status of farmed/wild fish in the state on a long term basis?

Brood stock are maintained in quarantine until post larvae are certified free from a range of viruses tested for by histopathology.

h) Finances

3.21 Who pays for the disease control program?

On a case-by-case basis and negotiated with the farmer.

3.22 Is any compensation available to aquaculture farmers?

No

3.23 Are there any plans for inclusion of fish in Federal or State compensation schemes?

No

i) Reporting

3.24 What personnel are available for reporting of progress to: Ministers, CCEAD, AQIS, OIE, industry, media? Who needs to be informed from these groups.

Coordinated by Dick Callinan and treated on a case-by-case basis.

Date: 12 November 1996

Venue

Head Office
DPIF
Darwin

Participants

Allen Bryce, Chief Veterinary Officer
Rex Pine, Assistant Director of Fisheries
Colin Shelley, Assistant Director of Aquaculture
Michael Pearce, Veterinary Pathologist
Roland Griffin, Fisheries Officer, Fisheries
Murray Barton, Fisheries Officer, Aquaculture Branch
Grant Rawlin, DVO, Seymour, Victoria, member of Working Party
Mark Crane, Project Leader, AAHL Fish Diseases Laboratory, member of Working Party

i. RESPONSES TO DIRECTING QUESTIONS

1.0 Diagnosis

1.1 Is there a definition of "severe disease" or a list of notifiable fish diseases in the state?

There is no definition of "severe disease". There is a definition of a "notifiable disease" (Fisheries Regs, p.4. see also section 23 of regulations) = any abnormal mortalities. Any abnormal mortality is notifiable to the Director of Fisheries (implicit in obtaining a licence). Currently, there is a total of 20 licenses. There is no list of notifiable diseases - this is a need especially for movement of product across national and state borders. Currently, NT imports 100% of post-larvae for prawn aquaculture. Imports of barramundi fry are uncommon since all larvae are supplied from the government-operated hatchery.

1.2 Is there a fish disease surveillance system present? i.e. where is a report of disease likely to come from?

Surveillance is passive rather than active. Report of disease would be via an aquaculture license holder as part of his obligation as a licensee or from the public into the Fisheries division.

An issue was raised concerning waters within Commonwealth lands such as National Parks e.g. Kakadu which is aboriginal land managed by the Commonwealth. These Commonwealth lands come under the jurisdiction of Environment Australia. In addition, capture fisheries (marine) e.g. wild-caught prawns and tuna are within jurisdiction of AFMA. There is a need for some formal arrangements to be established between Commonwealth and State Authorities concerning disease outbreaks of aquatic animals. NT has authority, under the Stock Diseases Act, to enter aboriginal land.

1.3 Does the state have veterinary laboratory backup with expertise in fish diseases?

There is veterinary laboratory back-up but with very little expertise in fish diseases. There is severe lack of resources. Aquatic animal products in NT are valued at approximately AUS\$110 million, AUS\$40 million of which comes from pearls. Prawn, barramundi and aquarium fish aquaculture (where the diseases are likely to occur) accounts for less than AUS\$1 million. Nevertheless aquaculture is seen as an expanding industry for NT.

NT does have arrangements with other States to use their facilities and expertise. It was noted that this is not always appropriate because then other States would obtain news of NT diseases before NT does.

- 1.4 Is the primary diagnosis likely to be handled by which state department? Does this department have an understanding with AAHL for exotic disease diagnosis?

Primary contact would be with the Fisheries Division who would then contact Michael Pearce as the veterinary pathologist with some fish disease experience. (However, it was noted that Michael would be leaving for a new position with the Health Department). Veterinary inspection of the facility would be undertaken and samples would be taken, if necessary, and forwarded to the laboratory for processing. David Pritchard at Berrimah Laboratory would be the contact person. Formal documentation of these arrangements is required especially for legal purposes - which is an internal matter.

No samples should go directly interstate without being processed by NT authorities.

For exotic disease matters, Director of Fisheries would work very closely with CVO and Animal Health Laboratory. There is a good understanding of the operations and relationship with AAHL concerning exotic disease reporting.

2.0 Legislative Responsibilities

- 2.1 If a severe disease is reported or diagnosed which authority/ies will be informed?

Fisheries Division in the first instance, under the Fisheries Act, then would link with Animal Health (CVO). A Disease Control Committee would be established reporting through two mechanisms (Fisheries and CVO).

- 2.2 Which authority has the legislative responsibility for the control of an exotic or severe disease?

see 2.1

- 2.3 Has this legislation been used in the past to control severe disease and are there personnel in the controlling authority who have experience in its use?

Yes, concerning the pearl oyster industry the disease control committee was activated approximately one year ago. There was difficulty determining whether mortalities were "abnormal" (= notifiable) but was not considered a severe disease and did not result in a major response.

- 2.4 If the technical input is from a different authority is there an understanding between officials of the authorities? e.g. CVO to Director of Fisheries.

Yes, through Disease Control Committee.

- 2.5 Is there an understanding of the CVO network (CCEAD) and responsibilities to DPIE Canberra and the OIE?

CVO understands it. Fisheries became aware of it through FEHC and is now taking a more proactive role.

- 2.6 There is a reporting mechanism for OIE listed fish diseases - is there an official responsible for this task and is there the knowledge for this?

CVO at the moment.

- 2.7 Does the controlling legislation have control of private, public fresh waters and the ocean? What area of ocean?

All waters except for those on Commonwealth land. The Territory and States are responsible for the ocean to the delineation line with Indonesia. Definitions include fish and aquatic life - which includes algae and mangroves. (Check on definition of "aquatic life").

For example, MOUs are in place with the Commonwealth, QLD and WA concerning the Off-shore constitutional settlement with other States and Commonwealth e.g. the shark fishery in the Gulf of

Carpentaria is managed by the States/Territories as a single resource even though it involves two States.

- 2.8 Once a diagnosis of severe disease or exotic disease has been made, who makes the decision that quarantine and control should or should not be invoked? How long is this likely to take?

Disease Control Committee involving the Director of Fisheries and in consultation with the CVO. A notice can be drafted by the Director and it can be gazetted (notice placed in Government Gazette) overnight and/or put in newspaper - a process which takes less than 24 hours.

3.0 Logistics

Assuming the decision has been made to quarantine a local area and stamp out a disease in fin fish.

a) Personnel

- 3.1 Within the state how many officers have experience in control of fish disease?

Very few.

- 3.2 How many officers with experience in animal disease control may be available? Whose permission needs to be sought for their use?

50 Animal Health staff in a genuine emergency - CVO.

- 3.3 How many officers with experience in netting fish are available? Whose permission needs to be sought for their use?

40 staff - Director of Fisheries.

- 3.4 Who will co-ordinate the task?

Director of Fisheries in consultation with CVO - Disease Control Committee.

- 3.5 Where will the co-ordination team be based?

May have a local operating centre which is controlled from Darwin.

- 3.6 Do the officers need to be given further powers under other Acts? How long is the gazetting process?

No - just work together. 24 hour process.

- 3.7 Is there an agreement for use of other emergency personnel?

No agreement in place. All NT Government resources are available but there needs to be some discussion with other departments concerning animal disease contingency planning to obtain some understanding and agreement on their involvement during an emergency disease outbreak.

b) Movement control

- 3.8 Can a quarantine area be declared - private or public waters?

Yes, 21.1.A of Act

- 3.9 What personnel would be used to man check points?

Cannot just use any personnel unless approved under Act or whether they are gazetted e.g. police officers.

3.10 Using what Act can movements of people and equipment be restricted into and out of a quarantine area?

Under Regulations 16, 17, 18 and 22.

3.11 Can equipment (e.g. nets) be required to be cleaned leaving a quarantine area?

See 3.10

3.12 Is there liaison set up with other authorities with responsibility for movement of water and water craft? Who is responsible for these? e.g. Port Authorities, Water Commissions.

See 3.10

These are regulations concerning aquaculture facilities - what about other facilities such as zoos and ornamental ponds?

Other Government authorities would need to be involved such as Department of Lands, Planning and Environment, Parks and Wildlife Commission, Port Authority, Department of Transport and Works. No problem with this is foreseen.

c) Trace back

3.13 What personnel can be used to trace back and follow the epidemiology of the disease?

Veterinary staff would coordinate the effort with Fisheries Officers and Stock Inspectors used to obtain relevant information.

d) Local disease control centre

3.14 Is there expertise available to set up and operate a Local Disease Control Centre?

Yes - from Animal Health - presumably training has occurred although there is no previous experience. Perhaps training should involve practice drills etc. with Fisheries involvement.

3.15 If the centre is set up by the Dept of Agriculture, what liaison functions are required within it to include fisheries expertise into the decision making?

Disease Control Committee.

e) Clean up

3.16 What chemicals are available for use? What are the environmental implications and is there a liaison link with the EPA or similar planned?

Rotenone
Pool chlorine for disinfection

No knowledge of any large stocks, no contingency plan is in place. Currently, there are plans for a prawn aquaculture facility involving 100 hectares of ponds. A contingency plan would need to identify a source of chemical supplies for emergency use.

3.17 Where would the personnel required for a clean up come from? Supervisory and labour.

Within the Division primarily, and others if necessary, and farm staff.

f) Surveillance

3.18 What surveillance of the local area fish population is possible? This may include fish farm visits and sampling of local wild populations.

Surveillance by epidemiology coordinator with field teams could be undertaken for a short period but not for long periods due to a lack of resources. One possibility is to obtain personnel from other States since such an emergency would be considered a national problem.

3.19 What trained personnel are available for the task of surveillance?

Available for a short period of time.

g) Certification

3.20 Is there an ongoing certification scheme which can be used to monitor health status of farmed/wild fish in the state on a long term basis?

No certification scheme apart from interstate trade requirements. Few diagnostic tests are available for other diseases.

Pearl oyster spat are certified by histology and culture for perkinsosis prior to movement and six weeks after stocking.

A project on the health status of pearl oyster stocks has been in place for two years (in collaboration with WA and John Humphrey as consultant).

h) Finances

3.21 Who pays for the disease control program?

NT Government?

3.22 Is any compensation available to aquaculture farmers?

No.

3.23 Are there any plans for inclusion of fish in Federal or State compensation schemes?

No - it would be an interesting exercise for each State/Territory to estimate the costs (direct and indirect) of an emergency disease and its control/management and determine the amount of compensation required.

i) Reporting

3.24 What personnel are available for reporting of progress to: Ministers, CCEAD, AQIS, OIE, industry, media? Who needs to be informed from these groups

Reporting process is in place.

ii. OTHER DISCUSSIONS

NT Needs

List of Notifiable diseases.

Clarification of responsibilities concerning disease outbreaks on Commonwealth land.

Other Info

GR and MC up-dated the group on national aquatic animal disease policy issues such as the SCARM Task Force on animal, pest and disease incursion management e.g. the plans to progress the development of contingency plans for aquatic animal disease outbreaks.

Colin Shelley informed the group that the Pearl Oyster Health Survey is currently proceeding (John Norton, Brian Jones and John Humphrey). It was interesting to note that all shells originate from WA with no restrictions for translocations from WA to NT but after grow-out there are restrictions concerning transportation of shells back to WA.

Colin Shelley would like to see, as part of the SCARM writing groups for generic contingency plans, a group to draft plans for pearl oysters.

Hatchery Visit on Day 2

Barramundi fry virus was discussed.

Health component of a development budget for new aquaculture species was discussed. e.g. any known diseases - diagnostic tests - cell lines etc.

Date: 25 March 1997

Venue

ACT Veterinary Services
Parks and Conservation
Belconnen, ACT

Participants

Will Andrew, CVO, ACT
Mark Lintermans, Fisheries Manager, ACT
Mark Livermore, Investigations Officer, Parks & Conservation, ACT
Grant Rawlin, Working Party Member, BRS
Mark Crane, Working Party Member, AAHL

RESPONSES TO DIRECTING QUESTIONS

1.0 Diagnosis

1.1 Is there a definition of "severe disease" or a list of notifiable fish diseases in the state?

No. ACT would select appropriate diseases from a National List when developed and seek amendments to existing legislation to incorporate the list and actions required for their control.

1.2 Is there a fish disease surveillance system present? i.e. where is a report of disease likely to come from?

No active surveillance. There is passive surveillance in that reports of "fish kills" will come in from the general public or more likely anglers via Fisheries Officers/Rangers to Mark Lintermans. Mark would then examine fish in an attempt to determine whether the cause of the mortality was physical (anglers who catch unwanted fish will throw them back and the fish may subsequently die from rough treatment) or from disease (for example, appearance of surface lesions). If Mark suspects disease, samples can be forwarded to Dick Callinan/Richard Whittington, NSW, for laboratory examination (ACT has an informal arrangement with NSW for laboratory back-up).

1.3 Does the state have veterinary laboratory backup with expertise in fish diseases?

ACT has no diagnostic laboratory facilities especially for fish diseases. Richard Whittington or Dick Callinan, both of NSW, would be consulted, initially by phone and, if further samples were required for laboratory examination, Mark would arrange collection and forward to NSW.

1.4 Is the primary diagnosis likely to be handled by which state department? Does this department have an understanding with AAHL for exotic disease diagnosis?

Primary diagnosis would be undertaken by Parks & Conservation (Mark/Will). If there is a major fish kill several agencies would be notified including EPA and Veterinary Services. This is an informal process - there are no protocols established. Will Andrew has a very good understanding of the AHC protocols concerning reporting of exotic diseases to AAHL.

2.0 Legislative Responsibilities

2.1 If a severe disease is reported or diagnosed which authority/ies will be informed?

Parks & Conservation.

2.2 Which authority has the legislative responsibility for the control of an exotic or severe disease?

Parks & Conservation. There are three relevant Acts:

Nature Conservation Act
Fisheries Act
Animal Diseases Act

It may be possible to use any of these Acts depending on a particular situation (for example, the Nature Conservation Act could be used if the disease would be detrimental to the 'ecosystem' - adversely affect native fish species). There is no legislation which deals with fish diseases specifically. There is no aquaculture in ACT. There are aquarium shops and there are some requests to stock dam farms with fish (which are commercially available) for recreational purposes for which there needs to be a permit under the ACT Fisheries Act.

2.3 Has this legislation been used in the past to control severe disease and are there personnel in the controlling authority who have experience in its use?

No. The Nature Conservation Act has been used in the past to "protect" waters, for example, for stocking waters with trout from NSW certification for freedom from EHN, Yersiniosis was obtained. Prior to importation of goldfish freedom from GUD could be obtained. However, now that NSW is operating on a cost-recovery basis, ACT does not continue this practice since, for small, irregular consignments, the testing fee cannot be justified.

2.4 If the technical input is from a different authority is there an understanding between officials of the authorities? e.g. CVO to Director of Fisheries.

There is good communication between Mark Lintermans and Will Andrew.

2.5 Is there an understanding of the CVO network (CCEAD) and responsibilities to DPIE Canberra and the OIE?

Will Andrew has a good understanding of CCEAD. It was noted that EHN is enzootic in ACT and should be reported 'via the system' to OIE.

2.6 There is a reporting mechanism for OIE listed fish diseases - is there an official responsible for this task and is there the knowledge for this?

Mark Lintermans would report fish diseases to Will Andrew who would make reports, in the normal way, concerning OIE-listed diseases.

2.7 Does the controlling legislation have control of private, public fresh waters and the ocean? What area of ocean?

There is no appropriate legislation in place. The Acts need to be amended. At the operational level, it would be more appropriate that fish disease legislation be included in the Animal Diseases Act. Fish diseases need to be listed. The Nature Conservation Act has authority over freshwater (both public and private). Release of any biological matter which may be detrimental to the environment is prohibited. A permit is required under the act for release of any biological matter into the water. Marine waters (Jervis Bay) is controlled by ANCA (cf Kakadu, NT).

2.8 Once a diagnosis of severe disease or exotic disease has been made, who makes the decision that quarantine and control should or should not be invoked? How long is this likely to take?

For a quarantine order to be undertaken the Animal Diseases Act would have to be invoked and it is not clear whether water is included in the Act (e.g. could ACT quarantine a lake?) The ACT Emergencies Services Bureau would be involved. For any sort of quarantine there would be logistic difficulties - lack of manpower and facilities - ACT would be very much dependent on assistance from other States e.g. NSW.

3.0 Logistics

Assuming the decision has been made to quarantine a local area and stamp out a disease in fin fish.

a) Personnel

3.1 Within the State, how many officers have experience in control of fish disease?

Nil.

3.2 How many officers with experience in animal disease control may be available? Whose permission needs to be sought for their use?

Between 3-4 who report to the Director of Parks and Conservation.

3.3 How many officers with experience in netting fish are available? Whose permission needs to be sought for their use?

Upto 6 in total - Director of Parks & Conservation.

3.4 Who will co-ordinate the task?

CVO (currently Will Andrew).

3.5 Where will the co-ordination team be based?

To be identified - under active discussion with Department.

3.6 Do the officers need to be given further powers under other Acts? How long is the gazetting process?

This is to be decided - fish diseases are not covered by Acts - some are being reviewed. 24 hours.

3.7 Is there an agreement for use of other emergency personnel?

Under the *Animal Disease Act* and the *ACT Disaster Plan*.

b) Movement control

3.8 Can a quarantine area be declared - private or public waters?

Depends on the definition of "quarantine" (which may be limited to land not including water) in the legislation.

3.9 What personnel would be used to man check points?

Emergency Services personnel and Rangers.

3.10 Using what Act can movements of people and equipment be restricted into and out of a quarantine area?

To be addressed - based on Kaney Report.

3.11 Can equipment (e.g. nets) be required to be cleaned leaving a quarantine area?

Maybe.

3.12 Is there liaison set up with other authorities with responsibility for movement of water and water craft? Who is responsible for these? e.g. Port Authorities, Water Commissions.

There are no water craft within the ACT. There is a cooperative understanding with the MDBC - nothing formal. Who is responsible for fish disease outbreaks in the MIA or Jervis Bay - check with ANCA.

c) Trace back

3.13 What personnel can be used to trace back and follow the epidemiology of the disease?

None - Need services of an epidemiologist to coordinate staff.

d) Local disease control centre

3.14 Is there expertise available to set up and operate a Local Disease Control Centre?

If Will gets proposal through ESB - to be a regional centre for ACT and SE NSW.

3.15 If the centre is set up by the Dept of Agriculture, what liaison functions are required within it to include fisheries expertise into the decision making?

Understands liaison functions - needs resources.

e) Clean up

3.16 What chemicals are available for use? What are the environmental implications and is there a liaison link with the EPA or similar planned?

ESB has chemical depot with 2 day stocks (available for over a weekend). There are links with EPA but plans need to be established and documented.

3.17 Where would the personnel required for a clean up come from? Supervisory and labour.

External labour force from CES, supervised by LDCC.

f) Surveillance

3.18 What surveillance of the local area fish population is possible? This may include fish farm visits and sampling of local wild populations.

Collection of fish samples could be undertaken - Laboratory services would need to be contracted.

3.19 What trained personnel are available for the task of surveillance?

Mark Lintermanns and staff of Wildlife Services.

g) Certification

3.20 Is there an ongoing certification scheme which can be used to monitor health status of farmed/wild fish in the state on a long term basis?

No.

h) Finances

3.21 Who pays for the disease control program?

ACT Government.

3.22 Is any compensation available to aquaculture farmers?

No aquaculture in ACT. No to other activities.

3.23 Are there any plans for inclusion of fish in Federal or State compensation schemes?

Refer to other plans for State and Federal schemes.

i) Reporting

3.24 What personnel are available for reporting of progress to: Ministers, CCEAD, AQIS, OIE, industry, media? Who needs to be informed from these groups.

LDCC network. LDCC model with reporting unit.

Date: 18 September 1996

Venue

Australian Fisheries Management Authority Offices
Robert Burns House
Barton, ACT

Participants

Frank Meer, Managing Director, AFMA
Bill Palmer, Legal Officer, AFMA
Dr Grant Rawlin, Working Party Member

RESPONSES TO DIRECTING QUESTIONS

1.0 Diagnosis

1.1 Is there a definition of "severe disease" or a list of notifiable fish diseases in the State?

No

1.2 Is there a fish disease surveillance system present? i.e. where is a report of disease likely to come from?

No

1.3 Does the State have veterinary laboratory backup with expertise in fish diseases?

Any needs would be dealt with by the State in which the catch is landed.

1.4 Is the primary diagnosis likely to be handled by which state department? Does this department have an understanding with AAHL for exotic disease diagnosis?

This would be handled by the State in which the catch was landed, however the participants recognised the need for a link to the CVO network (CCEAD) if needed.

2.0 Legislative Responsibilities

2.1 If a severe disease is reported or diagnosed which authority/ies will be informed?

This would be performed by the State making the diagnosis but the participants recognised the need for communication to AFMA for information and possible action.

2.2 Which authority has the legislative responsibility for the control of an exotic or severe disease?

In Commonwealth waters there is no specific mention of disease in the Fisheries Management Act 1991 however this Act has some operational powers mainly in the control of areas to be fished.

2.3 Has this legislation been used in the past to control severe disease and are there personnel in the controlling authority who have experience in its use?

No

2.4 If the technical input is from a different authority is there an understanding between officials of the authorities? e.g. CVO to Director of Fisheries.

No.

- 2.5 Is there an understanding of the CVO network (CCEAD) and responsibilities to DPIE Canberra and the OIE?

Prior to the meeting there had been none however the participants felt this would be useful and indicated they would investigate this aspect further.

- 2.6 There is a reporting mechanism for OIE listed fish diseases - is there an official responsible for this task and is there the knowledge for this?

State responsibility.

- 2.7 Does the controlling legislation have control of private, public fresh waters and the ocean? What area of ocean?

The Fisheries Management Act 1991 has responsibility for the control of Commonwealth waters.

- 2.8 Once a diagnosis of severe disease or exotic disease has been made, who makes the decision that quarantine and control should or should not be invoked? How long is this likely to take?

The Managing Director can use the Act to restrict fishing areas. Further investigation was to be undertaken by the Legal officer to check on this aspect of disease control.

3.0 Logistics

Assuming the decision has been made to quarantine a local area and stamp out a disease in fin fish.

a) Personnel

- 3.1 Within the state how many officers have experience in control of fish disease?
3.2 How many officers with experience in animal disease control may be available? Whose permission needs to be sought for their use?
3.3 How many officers with experience in netting fish are available? Whose permission needs to be sought for their use?
3.4 Who will co-ordinate the task?

AFMA does not have operational staff for this purpose. The operational expertise would be provided by State government staff. It was thought co-ordination would be provided by State CVO/Director of Fisheries and the Commonwealth Chief Veterinary Officer. AFMA has strong links to industry.

- 3.5 Where will the co-ordination team be based?

State responsibility.

- 3.6 Do the officers need to be given further powers under other Acts? How long is the gazetting process?

Fisheries inspectors under the Act can include defence personnel and police. Appointments can be made in 24 hours.

- 3.7 Is there an agreement for use of other emergency personnel?

No - State responsibility

b) Movement control

- 3.8 Can a quarantine area be declared - private or public waters?

It is likely fishing can be excluded from areas if needed. Further work will be undertaken to confirm this.

3.9 What personnel would be used to man check points?

Fisheries Officers although these points would in open waters therefore industry communications is more likely to be an effective method to police this.

3.10 Using what Act can movements of people and equipment be restricted into and out of a quarantine area?

Fisheries management Act 1991 applies to fishing equipment etc but not to general shipping.

3.11 Can equipment (e.g. nets) be required to be cleaned leaving a quarantine area?

No, however this is now being investigated for inclusion in the next amendments to the Act.

3.12 Is there liaison set up with other authorities with responsibility for movement of water and water craft? Who is responsible for these? e.g. Port Authorities, Water Commissions.

No

c) Trace back

3.13 What personnel can be used to trace back and follow the epidemiology of the disease?

The participants recognised the need for further links with State agencies and the CCEAD in this area.

d) Local disease control centre

3.14 Is there expertise available to set up and operate a Local Disease Control Centre?

3.15 If the centre is set up by the Dept of Agriculture, what liaison functions are required within it to include fisheries expertise into the decision making?

The questions on operational matters were likely to be State responsibility however the participants recognised the need for further links with State agencies and the CCEAD in this area. There was an undertaking to have discussions with the Office of the Chief Veterinary Officer (Australia) and Fisheries Policy Branch to formalise links into the CCEAD network. Links to operational aspects in the states was to be pursued on a formal and informal level through the Standing Committee of Fisheries and Aquaculture. Some operation resources could be sourced from state fisheries or chartering private vessels.

e) Clean up

3.16 What chemicals are available for use. What are the environmental implications and is there a liaison link with the EPA or similar planned?

3.17 Where would the personnel required for a clean up come from? Supervisory and labour.

Unlikely to be necessary.

f) Surveillance

3.18 What surveillance of the local area fish population is possible? This may include fish farm visits and sampling of local wild populations.

3.19 What trained personnel are available for the task of surveillance?

g) Certification

3.20 Is there an ongoing certification scheme which can be used to monitor health status of farmed/wild fish in the state on a long term basis?

h) Finances

3.21 Who pays for the disease control program?

Sections f), g) and h) require further investigation of the matters.

3.22 Is any compensation available to aquaculture farmers?

and

3.23 Are there any plans for inclusion of fish in Federal or State compensation schemes?

There is no provision for industry or government compensation available in this area, although it should be understood that the fish in the open sea are not owned but are harvested from wild stocks.

i) Reporting

3.24 What personnel are available for reporting of progress to: Ministers, CCEAD, AQIS, OIE, industry, media? Who needs to be informed from these groups.

Participants recognised the need for the inclusion of AFMA in the CCEAD network to make use of the communications of the network on the occasion of a fish disease outbreak. AFMA has strong links in industry. The importance of co-ordinated media response was recognised.

WORKSHOP ON THE PREVENTION OF AND RESPONSE TO DISEASE EMERGENCIES IN AQUACULTURE IN TASMANIA

Rokeby Police Academy Thursday 14 July 1994

REPORT ON WORKSHOP

A workshop on preparedness for disease emergencies in aquaculture in Tasmania was initiated by Tasmanian Fish Health Advisory Committee (TFHAC) and organised by the Department of Primary Industry and Fisheries, with support from Saltas, The Tasmanian Oyster Research Council, School of Aquaculture (University of Tasmania), and Inland Fisheries Commission.

This workshop looked at the disease risks facing the aquaculture industries, the preparedness of government and industry to respond to these risks, and the type of contingency planning which would help the industry to face these risks.

A syndicate exercise looked at the range of actions and decisions that are needed in response to a disease outbreak in either a shell fish or fin fish farm.

During the syndicate exercise groups found that some form of contingency planning outlining the roles and responsibilities of various bodies would greatly assist in the process of controlling such a problem.

Such a contingency plan needs to:

- identify who needs to be notified about the disease and who is responsible for this notification.
- outline procedures to confirm the disease and to determine and monitor its distribution on the farm, other farms and in the environment.
- outline procedures to trace the movement of stock on and off the premises and into market outlets.
- establish cooperation between government and industry. Government has legislative powers while industry has the management and market place knowledge necessary to managing the outbreak.
- identify agencies which need to be involved in determining and conducting the response to the disease. The roles and responsibilities for each agency need to be defined.
- outline the operational logistics necessary to carry out control procedures.
- ensure appropriate legislation and compensation funds are available.

The final plenary session confirmed the need for an industry contingency plan for responding to a major disease outbreak and looked at the steps needed to progress the development of a plan.

It was resolved that the Tasmanian Fish Health Advisory Committee (TFHAC) would be approached by a member present at the workshop (P Jungalwalla) with a proposal to establish a working group to progress the issue of an industry disease contingency plan.

The working group should produce a submission to the industry on the development of a disease contingency plan outlining roles and responsibilities; identifying issues needing to be resolved, including funding; and providing a draft outline of the plan. This submission would be circulated to the industry through the TFHAC to seek industry support for a plan.

The workshop suggested that the working group convene before the end of August and have the submission circulated to the industry by the end of December.

It was suggested that the working group have representation from:

- Shell fish industry
- Fin fish Industry
- DPIF
- Inland Fisheries
- State Emergency Service.

As a separate issue the workshop noted that there was a need for the development of guidelines for the use of polyculture in aquaculture.

THE PREVENTION OF AND RESPONSE TO DISEASE EMERGENCIES IN AQUACULTURE IN TASMANIA

DATE:	14 July 1994	VENUE: Rokeby Police Academy
9.30 - 10.00	Arrive, COFFEE	
10.00 - 10.10	Welcome, Dr C Mucha, Director of Animal Industries, DPIF Session 1 - CHAIR, Dr C Mucha	
10.10 - 10.40	What is a disease emergency? Why should we plan and prepare - Dr Barry Ryan, Independent Executive Chairman, Tasmanian Oyster Growers Cooperative Society Examples: Bonamia Atypical <i>Aeromonas salmonicida</i> at Springfield/Taroona Where planning/preparation could have helped: Examples: notification/compensation/legislation individual disease control strategies	
10.40 - 11.00	How AUSVETPLAN could be applied to aquaculture - Dr Rod Andrewartha, SVO, DPIF	
11.00 - 11.05	BREAK Session 2, CHAIR, Dr John Purser, Lecturer in Aquaculture	
11.05 - 11.15	Polyculture - benefits - Professor Nigel Forteach, Professor in Aquaculture	
11.15 - 11.30	Polyculture - risks - Dr Noel Murray, Veterinary Epidemiologist, DPIF	
	What are the threats and how prepared are we?	
11.30 - 12.00	Finfish - threats - Dr Barry Munday, Reader in Aquaculture (presented by Dr Judith Handler)	
12.00 - 12.05	BREAK Session 3, CHAIR, Mr Colin Sumner, (Chairman, Tasmanian Oyster Research Council)	
12.05 - 12.20	Finfish - Current industry preparedness - Dr Steve Percival, Veterinary Officer, SALTAS	
12.20 - 12.50	Shellfish - Threats and current industry preparedness - Dr Judith Handler, Veterinary Pathologist, DPIF	
12.50 - 1.00	Setting the scene - scenarios ("Exercise Finnish" and "Exercise Bombshell") - Dr Rod Andrewartha	
1.00 - 1.30	LUNCH Session 4, CHAIR, Mr Wayne Fulton, Commissioner, Inland Fisheries	
1.30 - 2.30	Exercises - syndicates work out how they would respond, identify problem areas.	
2.30 - 3.00	Plenary session - report to whole group (facilitator records areas of deficiency)	
3.00 - 3.15	AFTERNOON TEA Session 5, CHAIR, Mr Pheroze Jungalwalla, General Manager, SALTAS	
3.15 - 4.15	Plenary Session	<ul style="list-style-type: none"> • agree on priority areas for action • allocation of tasks • setting a timetable • summing up and close

Sponsored by SALTAS, The Tasmanian Oyster Research Council, DPIF, School of Aquaculture (University of Tasmania), and Inland Fisheries Commission.

AHC PROTOCOL

REPORTING ON SPECIMEN EXAMINATION BY AAHL

1. Animal Health Committee has agreed that all testing for exotic diseases should be carried out at AAHL as far as is practical.
2. Protocols have been agreed upon for the submission of specimens to AAHL for testing or for dispatch to an overseas laboratory.
3. The following protocol outlines how the results of tests done at AAHL or an overseas laboratory are to be reported.

Types of Specimens forwarded to AAHL

4. There are 3 categories of specimens
 - Category 1:** Routine submission; no suspicion of exotic disease.
 - Category 2:** Submissions for exotic disease exclusion; remote likelihood of exotic disease present.
 - Category 3:** Submissions for exotic disease diagnosis; high level of suspicion of exotic disease.
5. In terms of the Control Centre Management Manual, specimens in Categories 2 align with the Investigation Phase while specimens in Category 3 align with the Alert Phase.

Reporting on Specimen Examination

6. Category 1 specimen reports will be forwarded by AAHL to the submitter (Director of submitting laboratory), and State CVO if positive results are obtained.

State CVO is responsible for further notification of results as appropriate.
7. Category 2 specimen reports will be forwarded by AAHL to:
 - Director of submitting laboratory
 - State CVO

State CVO is responsible for further notification of results as appropriate.
8. Category 3 specimen reports are to be forwarded by the Head of AAHL to:
 - State CVO if results are insignificant;
 - State and Commonwealth CVOs if results are significant
 - Director of submitting laboratory, only after CVO has been advised.

Reporting within AHC/EDSC/CCEAD

9. No reporting is required in situations where an exotic disease was a remote possibility and no exotic disease was confirmed as present. If the case is of sufficient interest, the CVO will require the EDSC member to provide a retrospective report to the Foreign Diseases Unit (FDU) as part of that State of Territory's annual report to EDSC. It is essential that the State CVO be informed of results so that statistics can be maintained. It is similarly essential for FDU to receive comprehensive reporting.

10. AHC/CCEAD must be advised
 - where regulatory action exceeding the short-term quarantine (less than 24 hours) of a premise is undertaken
 - if the nature of the incident is likely to attract public, international, media or local producer attention (e.g. large number of deaths)
 - if field or laboratory findings are equivocal for significant* disease
 - if animals involved are recent introductions from interstate or overseas.
11. AHC/CCEAD will consult and obtain agreement action to be taken if the specimens yield positive, negative or equivocal results.

International Reporting

12. AHC confirmed with SCA 120 in July 1980 that Australia would maintain a policy of prompt and honest reporting of Australia's animal health status.
13. It remains the responsibility of CCEAD to exercise its discretion as to how any reports are framed and to minimise disruption to export markets. The breadth of representation on CCEAD ensures that perspective of overseas trade implications are dealt with adequately.
14. Following on from the decisions of CCEAD, Commonwealth agencies will liaise with national industry organisation and international organisations and State CVOs with State industry organisations.
15. The Commonwealth CVO will keep Chairperson EXANDIS and EXANDIS Council informed about developments.

Summary

16. This protocol lays down procedures for
 - Reporting on Specimen Examination by AAHL
 - Reporting to AHC/EDSC/CCEAD
 - International Reporting

* Significant disease includes any disease described in Animal Health in Australia Volume 9 (Exotic Diseases or which otherwise has trade implications for Australian Industry or represents a public health risk.)

AHC PROTOCOL

SUBMISSION OF SPECIMENS TO AAHL

1. Animal Health Committee has agreed that all testing for exotic diseases should be done at AAHL as far as is practical.
2. AHC has also agreed that all specimens for overseas testing be forwarded to AAHL for dispatch to an appropriate overseas laboratory. The State CVO or appropriate State Veterinary Laboratory personnel may wish to discuss an appropriate laboratory.
3. AAHL's responsibility for exotic disease diagnosis necessitates that its diagnostic systems are regularly challenged to maintain fully operational systems.
4. The submission of a regular flow of specimens will help to provide key information about exotic disease freedom and so facilitate international livestock movement negotiations.

Types of specimens for submission to AAHL

5. There are 3 categories of specimens
 - Category 1:** Routine submission; no suspicion of exotic diseases, e.g. specimens for export testing.
 - Category 2:** Submission for exotic disease exclusion; remote likelihood of presence of exotic disease.
 - Category 3:** Submissions for exotic disease diagnosis; high level of suspicion of exotic disease.
6. In terms of the Control Centre Management Manual, specimens in **Category 2** align with the *Investigation Phase* while specimens in **Category 3** align with the *Alert Phase*.

Dispatch of Specimens

7. **Category 1** specimens require the submitter to contact a veterinary pathologist at AAHL and advise by phone or fax the details of the dispatch and testing required.
8. **Category 2** specimens arising from an investigation phase require the submitter:
 - to inform the Director of the Laboratory making the submission who will advise State CVO
 - to inform the veterinary pathologist at AAHL as for **Category 1**.
9. **Category 3** specimens arising from an alert phase require the submitter:
 - to obtain the approval of the State CVO prior to dispatch
 - to advise the Head of AAHL and Victorian CVO by phone or fax of full details of dispatch to facilitate passage of the specimens through Essendon or Melbourne airport, collection by AAHL personnel and quick passage to AAHL.
10. The Victorian CVO can only facilitate transfer of specimens through Melbourne or Essendon airport to AAHL personnel when full information of the specimens and transport is given in advance.

Summary

11. It is essential that AAHL staff know about **Category 1 and 2** specimens being forwarded to AAHL. The Head of AAHL and Victorian CVO must be informed of the submission of **Category 3** specimens; State CVO needs to approve such submissions. Victorian CVO can only facilitate airport transfer of specimens to AAHL staff when informed in advance of the transfer.

AHC PROTOCOL

SUBMISSION OF DIAGNOSTIC SPECIMENS TO OVERSEAS LABORATORIES

1. Animal Health Committee has agreed that ordinarily all diagnostic specimens for overseas testing be forwarded to AAHL for dispatch to the overseas country. (Item 9.6 AHC 44).
2. The reasons for this agreement are:
 - there is a possibility the tests may be able to be performed at AAHL;
 - infectious specimens need to be suitably packaged to comply with international transport regulations;
 - AAHL resources can be used in determining the most appropriate testing laboratory in consultation;
 - appropriate reporting of results of a sensitive nature can be assured;
 - such arrangements help to maintain AAHL staff in active contact with overseas laboratories and aware of testing being performed.
3. Prior to dispatch, the Head of AAHL will ensure that the proposal has the approval of:
 - (a) the CVO of the State of origin if not a significant* disease; or
 - (b) the Commonwealth and State CVO if a significant* disease is suspected.

Note: Specimens submitted for expert testing of healthy animals to fulfil export or import protocol requirements and which must be sent overseas do not require CVO approval.
4. The Commonwealth CVO is responsible for ensuring that any consultation of CCEAD does or does not take place prior to dispatch of specimens where a significant* disease is suspected. Such consultation would obtain agreement on actions to be taken if specimens yield positive, negative or equivocal results.

Summary

5. This protocol lays down procedures for the submission of specimens to overseas laboratories through AAHL. Specimens which could give results indicating the presence of a significant* disease need to be handled sensitively.

* significant disease includes any disease described in Animal Health in Australia Volume 9 Exotic disease or which otherwise has trade implications for Australian industry or represents a public health risk.

APPENDIX 17.10: State/Territory Lists of Notifiable Diseases

DISEASE	NATIONAL	TAS	VIC	NSW	ACT	QLD*	NT	WA	SA
Finfish									
cichlid virus									Y
EHN	proposed	Y	Y	Y	N	Y	N	Y	Y
IHN	proposed	Y	Y	Y	N	Y	N	Y	Y
OMVD (herpesvirus II)	proposed	Y	Y		N	Y	N	Y	
SVC	proposed	Y	Y		N	Y	N	Y	
VHS	proposed	Y	Y	Y	N	Y	N	Y	Y
IPN	proposed	Y		Y	N	Y	N	Y	Y
furunculosis	proposed	Y	Y	Y	N	Y	N	Y	Y
BKD	proposed	Y	Y	Y	N	Y	N	Y	
ERM	proposed			Y	N	Y	N		
CCVD					N	Y	N		
viral encephalopathy and retinopathy	proposed	Y	Y	Y	N	Y	N	Y	
ISA	proposed	Y			N	Y	N	Y	
piscirickettsiosis	proposed				N	Y	N	Y	
gyrodactylosis	proposed				N		N		
whirling disease	proposed	Y	Y	Y	N	Y	N		Y
edwardsiellosis	proposed				N		N	Y	
nocardiosis		Y			N	Y	N		
streptococcosis		Y							
EUS	proposed		Y	Y	N	Y	N	Y	
anguillicola								Y	
Molluscs									
bonamiosis	proposed		Y	Y	N	Y	N	Y	
haplosporidiosis	proposed			Y	N	Y	N	Y	
marteiliosis	proposed		Y	Y	N	Y	N	Y	
iridoviroses	proposed	Y	Y	Y	N	Y	N	Y	
oyster velar disease?	proposed				N	?	N		
mikrocytosis	proposed		Y	Y	N	Y	N	Y	
perkinsosis	proposed		Y	Y	N	Y	N	Y	Y
nocardiosis		Y			N	Y	N		
Crustaceans									
crayfish plague	proposed		Y	Y	N	Y	N	Y	Y
microsporidiosis					N	Y	N	Y	Y
white spot	proposed			Y	N	Y	N		
yellowhead disease	proposed			Y	N	Y	N	Y	
IHHN	proposed			Y	N	Y	N	Y	
baculoviroses	proposed			Y	N	Y	N	Y	
Taura syndrome	proposed				N		N		
midcrop mortality syndrome	proposed				N		N		
gaffkaemia					N	Y	N		Y

Program Day 3 Sunday 28th July

9.00 am to 5.00 pm

Prawn Health Session Chairperson Damian Ogburn

Φ Ian Anderson - Sen. Vet. Pathologist QDPI

"Midcrop mortality syndrome"

Φ Dr Leigh Owens - Lecturer in Marine Microbiology and Aquatic Diseases JCU.

"Parvovirus studies"

Φ Kirsten Spann - Ph.D. student Uni. Qld.

"Lymphoid organ virus studies"

Φ Dr Peter Walker - Assoc.

Professor/Principal Research Scientist CSIRO Div. Tropical Animal Production

"Prawn virus research"

Φ Dr Dick Callinan - Special Veterinary Research Officer NSW Fisheries

"Epidemiology in prawn aquaculture"

Φ Lan Jiang - Tech. Officer Aquaculture Diseases NSW Fisheries

"Health & production programs in prawn aquaculture"

Φ Dr Mark Crane - Project Leader Aust. Animal Health Laboratory

"Disease emergency contingency planning"

Panel Session with all speakers.

Φ Dr Gardner Murray - Chief Veterinary Officer DPIE

Φ Prof. Mike Rickard - Chief, CSIRO Div. of Animal Health

Workshop Fees

covers conference facilities including morning, afternoon teas & lunches on July 27 & 28 only

Early Registration - by July 19th

per person -

APFA Members - \$75.00

& contributing speakers

Non Members - \$100.00

Late Registration

per person -

APFA Members - \$100.00

Non Members - \$150.00

Accommodation - A group booking has been made at the Cairns Colonial Club Resort 18-26 Cannon St Manunda Cairns. Special Rate twin share \$111.00 per night Bookings ph: 070 535111 quote APFA rate

Conference venue:
Brothers Leagues Club
99 Anderson St Manunda Cairns
Ph 070 617199

**Australian
Prawn Farmers
Association**

**1996 Workshop &
Annual General
Meeting**

**26th to 28th July 1996
Brothers Leagues Club
CAIRNS**

The APFA gratefully acknowledges the co-sponsoring of the workshop by NSW Fisheries and Qld DPI

Registration

Name of Organisation

Name of Person/s Attending

—

—

—

—

BUFFET DINNER Sat 27 July 7pm

Brothers Leagues Club

number of tickets required

@ \$15.00 per head

Enclosed remittance for

\$_____

Send to: APFA Treasurer,

P.O. Box 68

Kurrimine Beach Qld. 4871

Program Day 1 Friday July 26

Prawn Research Session

Presentation of scientific papers

9 am to 5 pm

Meeting Room A

Presentations by Australian Researchers from Aquaculture CRC, CSIRO, AIMS, Universities and others.

Speakers include:

Φ Ian Anderson - QDPI.

Φ Lan Jiang - NSW Fisheries

Φ Nigel Preston - NSW Fisheries

Φ Kirsten Spann - UQ.

Φ Dr Leigh Owen - JCU

Φ Other Speakers *details prior to meeting*

Australian Prawn Farmers Association Annual General Meeting

Φ 1.00 pm - Meeting Room B

(Agenda sent to members directly)

This is the members-only Annual General Meeting for the purposes of election of executive committee and resolution of other association business.

Program Day 2 Saturday July 27

9.00 am Sharp. **Welcome by President**

Session 1 Chairperson Jim Gillespie QDPI

Pond Production and Management

Keynote Speaker

Dr Claude Boyd Dept. Fisheries & Allied Aquacultures University of Auburn, Alabama USA

“Best Management Practice”

Other Guest Speakers

Dr Nigel Preston CSIRO Div. Fisheries

“Research progress towards sustainable prawn farming in Australia”

Michele Burford CSIRO Div. Fisheries

“The effect of nutrients and light on phytoplankton in prawn ponds”

Chris Jackson CSIRO Div. Fisheries

“The effect of the pond environment on the growth rate of *P. monodon*”

Lindsay Trott AIMS

“Monitoring results at Sea Ranch Prawn Farm”

Lunch Break 12.30-1.30pm

Session 2 - 1.30pm

Dr Claude Boyd

“Environmental Impact Mitigation”

Followed by panel Session with all speakers.

Session 3 - 3.30pm

Marketing - Chairperson - Col. Baldwin.

Graham Crouch - Sydney Fish Market P/L

“Marketing Outlook”

John Sumner - Australian Seafood Industry QA project information for all farmers including introduction to Marifarm P/L a generic system based on two farms quality manuals.

Close 5.00pm.

APPENDIX 17.12: Summary of Current Legislation with Relevance to Aquatic Animal Diseases in Australia
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State/Territory/Agency	Relevant Legislation
Australian Capital Territory	The Stock Act 1993 The Animal Diseases Act 1993 The Nature Conservation Act 1980 The Fishing Act 1967
New South Wales	The Fisheries Management Act 1994 The Fisheries Management Act (Aquaculture) Regulations 1995 The Exotic Diseases of Animals Act 1991 The Stock Diseases Act 1923
Northern Territory	The Stock Diseases Act 1954 The Fisheries Act 1995
Queensland	The Fisheries Act 1994 The Fisheries Regulations 1995
South Australia	The Livestock Act 1997
Tasmania	The Animal Health Act 1995
Victoria	The Livestock Disease Control Act 1994
Western Australia	The Exotic Disease of Animals Act 1993 The Stock Diseases Regulations Act 1996 The Pearling Act 1990 The Fish Resources Management Act 1994
Commonwealth (AFMA)	Fisheries Management Act, 1991.

NOTE: The majority of the above Acts have associated Regulations.

APPENDIX 17.13: Important Requirements of Legislation Fundamental for Effective Management of Aquatic Animal Disease Outbreaks

BASIC REQUIREMENTS	ACT	NSW	NT	QLD	SA[#]	TAS	VIC	WA	Other C'with	AFMA
Power to allow entry to premises	no	yes*	yes	yes	yes	yes	yes	yes	no	no
Power to enforce quarantine	no	yes	yes	yes	yes	yes	yes	yes	no	no
Lists of notifiable diseases	no	no	no	no [§]	yes	yes	yes	yes	no	no
Power to enforce notification of diseases	no	no	yes	yes	yes	yes	yes	yes	no	no
Power to treat diseased stock	no	yes*	yes	yes	yes	yes	yes	yes	no	no
Power to require disinfection of fittings	no	yes*	yes	yes	yes	yes	yes	yes	no	no
Power to obtain information	no	yes*	yes	yes	yes	yes	yes	yes	no	no
Power to seize & destroy diseased stock	no	yes*	yes	yes	yes	yes	yes	yes	no	no
Power to require testing	no	yes*	yes	yes	yes	yes	yes	yes	no	no

* Only for aquaculture species which is controlled via aquaculture permits

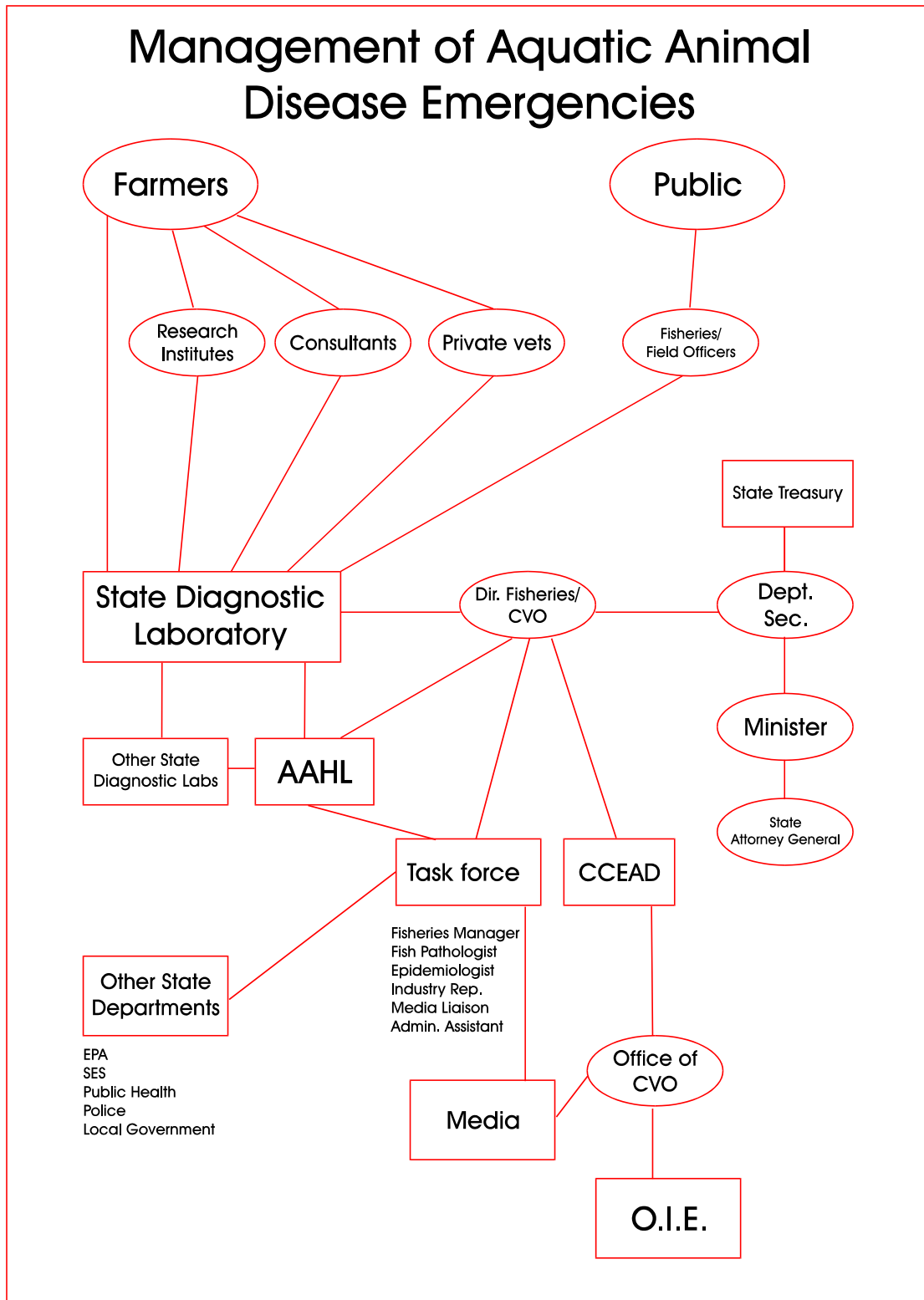
New Stock Diseases Act currently under consideration

§ under development

APPENDIX 17.14: Fish Health Coordinating Group Revised Membership
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MEMBER	REPRESENTATIVE
SCARM Veterinary Committee (Chair)	Prof. Mike Rickard Chief CSIRO Division of Animal Health
Secretary	Mr. Simon Wilkinson, DPIE
SCARM Office of Commonwealth Chief Veterinary Officer	Dr. Peter Thornber Special Veterinary Assistant, OCVO
SCFA Aquaculture Committee	Dr. Damien Ogburn NSW Fisheries
SCFA Environment and Health Committee	Dr. John Beumer QDPI (Fisheries)
Wild-caught fisheries Industry	Mr Bill Nagle (ASIC)
FAB	Mr. Glenn Hurry Aquaculture Unit
BRS Technical Coordinator	Dr. Grant Rawlin Principal Veterinary Officer Technical advice on Aquatic animal diseases
Aquaculture Industry	TBA
Co-opted member	Dr. Mark Crane Project Leader CSIRO AAHL Fish Diseases Laboratory

APPENDIX 17.15: Generic Flow Diagram illustrating Linkages for the Management of Aquatic Animal Disease Emergencies



EXPLANATORY NOTES

1. It is likely that, in most States/Territories, fish kills would be reported initially by either farmers or members of the general public and that they would inform either, research institutes, private consultants, private vets, Fisheries/Field Officers or the State Veterinary Diagnostic Laboratory directly. No matter what avenue the reporting takes it was emphasised that the State Veterinary Laboratory should be informed as early as possible in the process so that appropriate action can be implemented.
2. Management of the incident is coordinated through a single (State) veterinary diagnostic laboratory. It is the State authorities (either Agriculture and/or Fisheries Departments) which have in place the linkages to other agencies.
3. The State CVO and/or the Director of Fisheries or their delegate is the conduit for information flow within the State and with other States/Territories and Commonwealth Agencies.
4. If deemed necessary a "Task Force" (disease emergency management team) is formed. This team comprises of personnel with expertise relevant to the specific outbreak and may not be the same make-up for each and every emergency. Personnel with specific expertise may be called upon in different circumstances. An action plan with current contacts and phone numbers is essential. Definition of the roles and responsibilities of each contact in the face of an emergency is essential. These items need to be agreed upon and documented prior to **(not during)** an emergency.
5. Control of information is important. Timely release of accurate information is the key to good information management, to keep all relevant parties informed, to reduce the spread of inaccurate information by rumour and to protect any appropriate trade (domestic or international) position.
6. In all States/Territories, there are limited resources for management of aquatic animal disease emergencies. Policies are inadequate at both the State/Territory and Commonwealth levels. There is an urgent need for rapid development of appropriate Aquatic Animal Health Policy at both levels with ownership by State, Territory and Commonwealth governments, Fisheries industries and environmental agencies.
7. The Office of the Commonwealth CVO is responsible for reporting to the O.I.E.

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