

COLLABORATING
TO PROTECT AND
IMPROVE AQUATIC
ANIMAL HEALTH

2022-2027

AQUAPLAN



AQUAPLAN 2022-2027 is Australia's national strategic plan for aquatic animal health. It was jointly developed by aquatic animal industry sectors and the Australian, state and territory governments. The production of AQUAPLAN 2022-2027 was coordinated by the Aquatic Pest and Health Policy section, Biosecurity Animal Division, within the Australian Government Department of Agriculture, Fisheries and Forestry.

The plan was endorsed by governments through the Sub-Committee on Aquatic Animal Health, Animal Health Committee, and the National Biosecurity Committee. The plan was endorsed by industry through representatives of the aquatic animal industry's peak bodies. AQUAPLAN 2022-2027 was endorsed by Agriculture ministers in September 2022.

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Cataloguing data

This publication (and any material sourced from it, unless otherwise stated) should be attributed as: Department of Agriculture, Fisheries and Forestry, 2022, AQUAPLAN 2022-2027: Australia's National Strategic Plan for Aquatic Animal Health, Department of Agriculture, Fisheries and Forestry, Canberra, June CC BY 4.0.

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For further information on AQUAPLAN 2022-2027 please contact the department's Aquatic Pest and Health Policy section at: aquaplan@agriculture.gov.au.

Acknowledgements

The authors would like to thank the AQUAPLAN Development Steering Group: Allison Crook, Kevin de Witte, Tracey Bradley, Colin Johnston, Jo Ruscoe and Kim Hooper, for their contributions and guidance in developing the fourth national strategic plan for aquatic animal health. We would also like to thank the numerous industry and government representatives who attended and contributed to the online workshop series to develop the plan. For the full list of contributors please refer to Appendix A.

AQUAPLAN, IMPROVING AQUATIC ANIMAL HEALTH, PROFITABILITY AND PRODUCTIVITY OF AQUATIC ANIMAL INDUSTRIES AND PROTECTING AQUATIC ENVIRONMENTS





FOREWORD



As global trade and demand for high quality seafood continues to increase, continued investment in our aquatic animal health system is essential. It underpins the productivity and profitability of our fisheries and aquaculture sectors and protects our unique aquatic environments.

The gross value of production of Australia's fisheries and aquaculture sectors is expected to be \$3.55 billion in 2021–2022.

Since 1998, Australia's aquatic animal health management system has been jointly developed by industry, governments, and delivery partners through AQUAPLAN. Key to AQUAPLAN's success has been the collaborative approach to identifying and pursuing common goals.

Through three previous AQUAPLAN's, Australia's aquatic animal health systems have been built and strengthened. There have been many achievements over this time including, enhancing emergency disease response arrangements, improving the availability of veterinary medicines for safe use in farmed aquatic animals, and strengthening regional and farm biosecurity to enhance productivity and facilitate trade. These and other achievements will continue to be built upon over the course of the next 5 years.

I am pleased to release the fourth National Strategic Plan for Aquatic Animal Health – AQUAPLAN 2022 to 2027. This plan represents shared industry, state and territory and Australian government priorities for investing in the aquatic animal health system to promote healthy aquatic animals, prevent disease and ensure we have a strong system in place to respond should disease occur.

Senator the Hon Murray Watt
Minister for Agriculture, Fisheries and Forestry

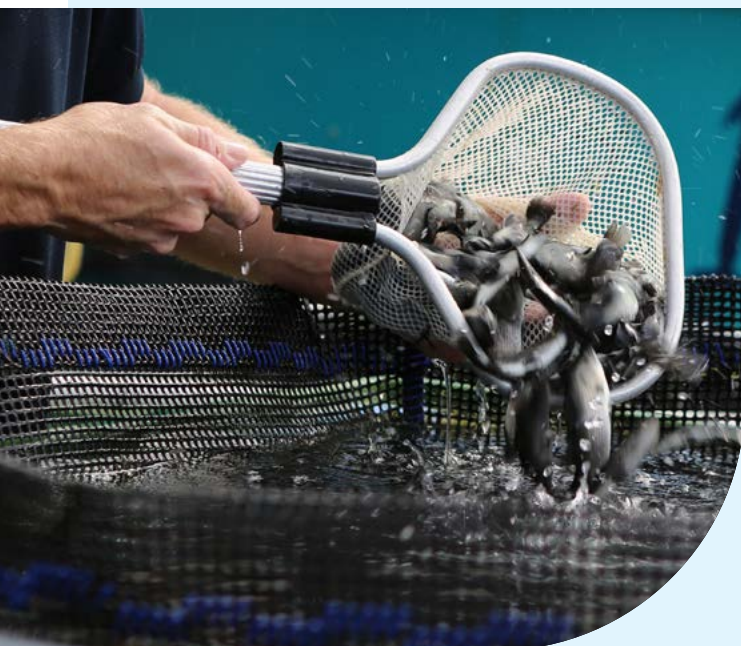
CONTENTS

Foreword	1
Introduction	3
Vision	6
Drivers for a national strategic plan	8
Using this plan	10
Summary of objectives and activities	11
Objective 1 Border biosecurity and trade	14
Objective 2 Enterprise and regional biosecurity	18
Objective 3 Surveillance	24
Objective 4 Diagnostic capability	28
Objective 5 Emergency preparedness	34
Objective 6 Veterinary medicines	40
Objective 7 Innovation	44
Implementing the plan	48
Approach to implementation	48
Roles and responsibilities	49
Conclusion	51
Appendix A Organisations involved in the development of AQUAPLAN 2022-2027	52
Appendix B Process to develop AQUAPLAN 2022-2027	53
Appendix C Linkages	54
Appendix D Acronyms and abbreviations	56



INTRODUCTION

AQUAPLAN is Australia's national strategic plan for aquatic animal health. It sets out national priorities for collaborative actions to strengthen Australia's aquatic animal health management systems. These systems are critically important to improve the productivity and profitability of aquatic animal industries (including aquaculture, fisheries, and ornamental fish sectors) and to protect our unique aquatic environments from the threat of disease.



Three previous AQUAPLANs* have built and improved almost all aspects of Australia's highly regarded systems for managing aquatic animal health and represent a world leading approach to industry-government collaboration on aquatic animal health.

Global and domestic trends in trade and aquatic animal production indicate that Australia will require increasingly strong and resilient systems to effectively manage aquatic animal disease risks. AQUAPLAN 2022-2027 has looked ahead to consider what systems need to be strengthened or put in place to support the continued growth of Australia's aquatic animal industries and the effective management of aquatic animal health and disease risks. It sets out seven clear objectives – Border biosecurity and trade, Enterprise and regional biosecurity, Surveillance, Diagnostic capability, Emergency preparedness, Veterinary medicines, and Research and innovation.

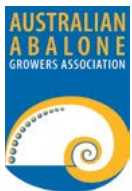
With the launch of AQUAPLAN 2022-2027, the strong legacy of AQUAPLAN continues. A review of AQUAPLAN 2014-2019, identified a strong, ongoing need for a nationally coordinated approach to aquatic animal health. The approach taken is consistent with previous plans; however, the experience of past plans has been applied to improve its development and implementation. The industry and government partnerships that are fundamental to achieving the common goals of the plan have been given particular emphasis in AQUAPLAN 2022-2027.

AQUAPLAN 2022-2027 was developed through extensive collaboration among industry and government parties extending over more than a year (see Appendix A and B). This period coincided with the COVID-19 pandemic that was characterised by an unprecedented human health crisis and economic and trade disruption with considerable impact on many seafood industry sectors. Despite these challenges, AQUAPLAN 2022-2027 has been developed with more extensive collaboration than any of its predecessors with the assistance of the proliferation of online collaboration tools.

In addition to the industry-government collaboration that underpins AQUAPLAN's success, its development has followed some key guiding principles:

- The plan addresses common national priorities
- It focuses on national strategic issues that will provide enduring benefit to the management of aquatic animal health
- Its objectives and activities have defined, achievable outcomes
- It is a framework of agreed national priorities to which investment will be attracted.

* AQUAPLAN 1998-2003, AQUAPLAN 2005-2010 and AQUAPLAN 2014-2019 are available on the Department of Agriculture, Fisheries and Forestry's website.



The Australian abalone farming industry aims to provide premium quality abalone to niche markets worldwide through efficient, competitive and technologically advanced methods. AQUAPLAN provides opportunities to achieve this through collaborative action to improve and acknowledge leading biosecurity practices and surveillance methods for farm and environment protection, and for trade and market access.

**Nicholas Savva, Executive Officer,
AAGA**



For the barramundi industry to reach its full growth potential, it is essential that disease risks are minimised, and health of stock is optimised. This requires performance at all levels of industry, science, and government. AQUAPLAN builds a much-needed framework for co-investment in RD&E across the complex systems that underpin aquatic animal health.

**Jo-Anne Ruscoe, Chief Executive Officer,
ABFA**



This plan has been developed collaboratively with governments and industry stakeholders and I commend my fellow Steering Group members, the Department, state government representatives and all those who contributed for their ongoing commitment and strategic approach to aquatic animal health to support Australia's aquatic environment, and improve the productivity and profitability of Australian businesses and livelihoods – particularly in regional and remote areas.

**Kim Hooper, Executive Officer,
APFA**



AQUAPLAN is an important guide to cooperative investment by industry and government in maintaining aquatic animal health.

**Dr. Len Stephens, President,
Oysters Australia**

AUSTRALIAN SOUTHERN BLUEFIN TUNA
INDUSTRY ASSOCIATION LTD (ASBTIA)

Healthy fish is something that we in Australia have the luxury of taking for granted. The regular updating of AQUAPLAN is a reminder that many other production systems around the world require significant and on-going investment to maintain their stocks basic health and productivity. Also, that it is a shared responsibility to remain vigilant and strive to up-hold our clean health status as it has mutual benefit.

**Kirsten Rough, Research Manager,
ASBTIA**



The Southern rock lobster sector is no different to any other seafood industry in its requirement to have carefully planned arrangements for managing aquatic animal health, and to support sustainability, productivity, and market access. AQUAPLAN provides our industry with a professional interface with Government which allows us to access resources for our own industry issues like responding to food safety issues, algal blooms and lobster health in holding tanks.

**Tom Cosentino, Executive Officer,
SRLL**



Aquatic animal health and biosecurity are critical to the future success of aquaculture. The salmon industry has always treated these issues as a high priority and understands a national strategy such as AQUAPLAN needs to complement industry initiatives through effective communication and outcome focused projects, only possible in a coordinated and collaborative approach with government.

**Sue Grau, Chief Executive Officer,
TSGA**



The growth in Australia's aquatic animal production industry, in response to rising demand for sustainably produced, high quality seafood, brings additional challenges in disease emergence and control. AQUAPLAN provides a valuable strategic roadmap, specifically designed to ensure focus among diverse stakeholders in responding to this challenge and ACDP is delighted to be playing its part.

**Prof. Trevor Drew, Director,
CSIRO Australian Centre for Disease Preparedness**



AQUAPLAN is critical to inform the future research, development and extension needs for fishing and aquaculture. As such it is pivotal in how FRDC invests to ensure Australia remains disease free and can respond to any disease outbreaks.

**Dr. Patrick Hone, Managing Director,
FRDC**



**Australian Government
Department of Agriculture,
Fisheries and Forestry**

Australia has unique and diverse aquatic animals. Healthy aquatic animals underpin production, sustainability and reduce disease risk. By prioritising ongoing investment in our aquatic animal health system through AQUAPLAN, we can keep pace with changing risks and emerging threats and our aquatic industries and environments will continue to thrive and be healthy.

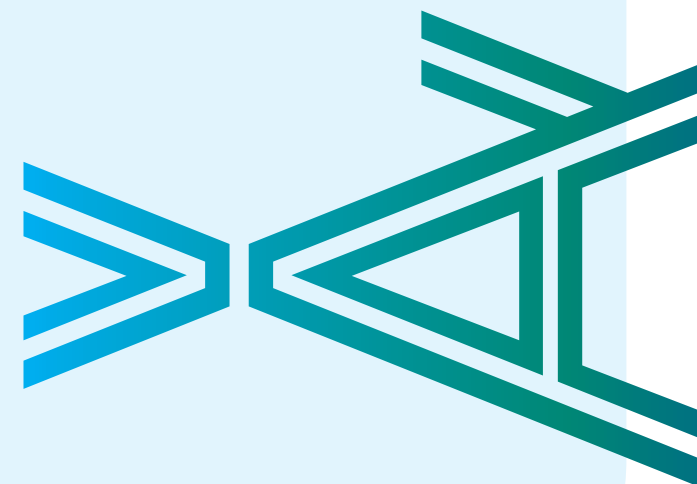
**Dr. Mark Schipp, Australian Chief Veterinary Officer,
DAFF**



Sub-committee on Aquatic Animal Health

An ongoing investment in aquatic biosecurity policy and practice is essential for the health and prosperity of aquatic primary industries. AQUAPLAN identifies priority issues that need to be addressed by industry and government.

**Kevin de Witte, Tasmanian CVO,
SCAAH Chair**

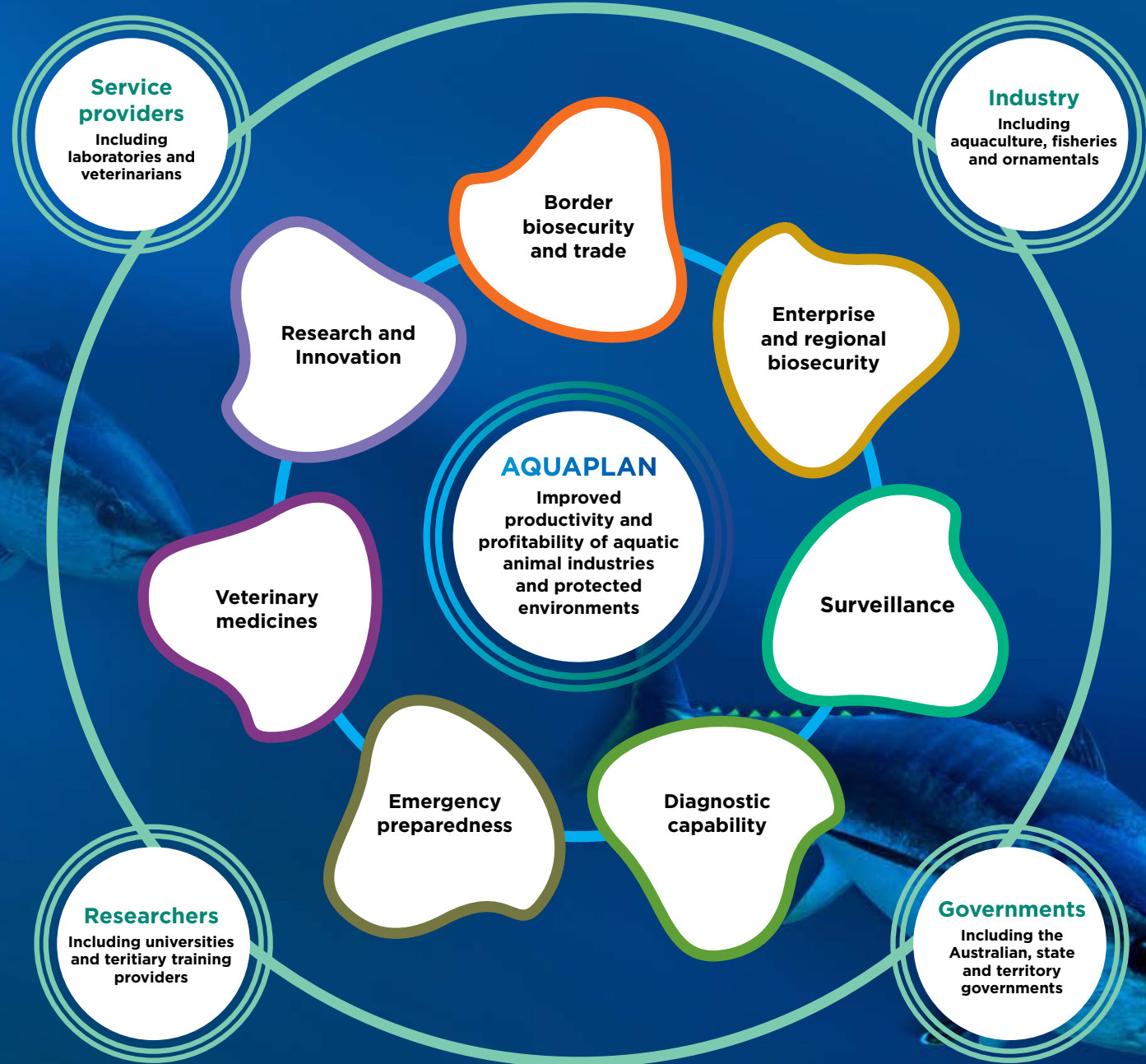




NOISILIN



AQUAPLAN brings together a network of collaborators (outer ring) to pursue its seven objectives (inner ring) and achieve its intended outcome of improving the productivity and profitability of Australia's aquatic animal industries and protecting aquatic environments. AQUAPLAN will provide a mechanism for investors in aquatic animal health to take collective action and make lasting change.



● Objectives
● Collaborators

DRIVERS FOR A NATIONAL STRATEGIC PLAN

The threat of aquatic animal diseases is present and severe. There are numerous examples internationally and within Australia of significant disease outbreaks from new, emerging or known diseases. Some of these diseases have spread across the globe and affected all major production areas of the susceptible species. Others have depleted wild populations of aquatic animals and impacted the commercial fisheries and ecosystems that rely on them. These experiences demonstrate the critical importance of prevention and preparedness activities.



There are many factors that contribute to the emergence and spread of aquatic animal diseases—the rapid global growth of aquaculture, increasing domestication of species, the high diversity of species, production in new environments and large trade volumes. These factors are expected to become more significant and continue to drive disease emergence and spread. Further, once established, aquatic animal diseases may be difficult to eradicate due to the contiguous nature of aquatic resources and environments.

Australia's seafood industry focuses on premium products that generate significant economic value. It is a primary industry within the broader Australian food and agribusiness industry that is identified as a sector of competitive strength and strategic priority¹. It is comprised of a diverse range of species, ecosystems and production and fishing methods, including many native, new and emerging sectors. Forecasts and recent investments indicate that Australia's aquatic animal production sectors will continue to grow strongly.

Disease is a common and significant threat to Australia's aquatic animal industries and aquatic environments. There are few threats that can destroy businesses and impact aquatic animal resources as rapidly as disease, especially emerging diseases*.

Example - Infectious salmon anaemia

Infectious salmon anaemia (ISA) is a viral disease that has caused severe impacts on salmon farming internationally including production declines, mass unemployment and economic disruption. Australia is fortunate to be free from the virus that causes ISA but the disease is a significant threat to Australia's largest aquaculture sector and the Tasmanian economy.

Example - Withering syndrome of abalone

Withering syndrome of abalone (WSA) is a bacterial disease that has caused significant impacts in farmed and wild abalone overseas. The disease has contributed to the collapse of wild abalone populations in the Americas, and the fishing industries that relied on them. Australia is free from WSA but the disease could severely deplete Australia's wild abalone populations which are the basis for the world's largest abalone fishery.

* According to the [WOAH Aquatic Code](#), an emerging disease is "a) a change of known pathogenic agent or its spread to a new geographic area or species; or b) a newly recognised or suspected pathogenic agent". Emerging diseases characteristically are poorly understood which creates challenges for surveillance and management.



Australia's national aquatic animal health system aims to prevent and minimise the impact of disease. Several elements work together to achieve this: biosecurity (including border, regional and enterprise-level), surveillance, diagnostic capability, emergency preparedness, veterinary medicines, and research and development. These elements support the diverse methods, species, and ecosystems of the Australian seafood industry. Industry, governments, researchers and service providers all benefit from using the system and have a role to play in maintaining the system. When everyone plays their part, the system is at its strongest.

Aquatic animal health management in Australia is integrated within broader national arrangements and initiatives for biosecurity, animal welfare, emergency disease response, and research and development. AQUAPLAN 2022-2027 complements and supports these activities (see Appendix C).

the productivity and sustainability of Australia's commercial fisheries and aquaculture sectors, **valued at \$3.15 billion in 2019-20**, with \$1.58 billion (or 49%) of this attributed to wild catch and \$1.60 billion (or 51%) to aquaculture².

the recreational fishing resources **enjoyed by more than 3.4 million people** annually and whose activities contribute \$2.56 billion to national, state and territory economies⁵.

the **disease-free status** of Australia's many aquatic animal products, which provides a relative advantage for industry sectors supplying products to the export market, valued at **\$1.41 billion** in 2019-20².

over **41,000 full-time equivalent jobs** through direct employment, processing, and flow-on industries³.

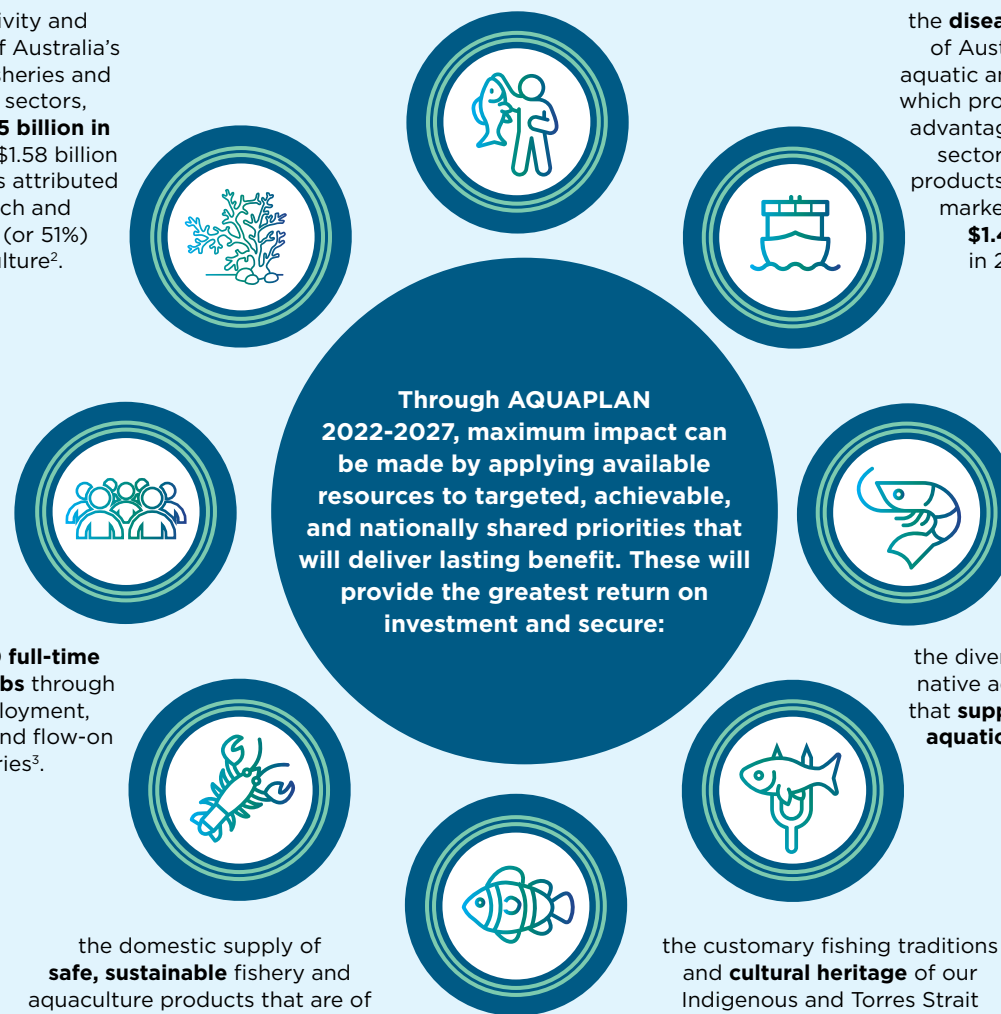
the domestic supply of **safe, sustainable** fishery and aquaculture products that are of high quality and value.

the growth and productivity of the ornamental fish sector, worth an estimated **\$350 million** annually⁴.

the customary fishing traditions and **cultural heritage** of our Indigenous and Torres Strait Islander peoples.

the diverse and unique native aquatic animals that **support Australia's aquatic ecosystems**.

Through AQUAPLAN 2022-2027, maximum impact can be made by applying available resources to targeted, achievable, and nationally shared priorities that will deliver lasting benefit. These will provide the greatest return on investment and secure:



USING THE PLAN

AQUAPLAN 2022-2027 aims to improve Australia's aquatic animal health system by addressing seven objectives: border biosecurity and trade, enterprise and regional biosecurity, surveillance, diagnostic capability, emergency preparedness, veterinary medicines and research and innovation.

Each objective will be pursued through a number of defined activities. In total the plan has 28 activities across its seven objectives. An overview of the plan's objectives and activities is provided on pages 13 to 15. Further descriptive detail on each objective and its supporting activities can be found in objective sections 1 to 7 (pages 16 to 49). A section on plan implementation is also included (page 50).

AQUAPLAN is intended for use by Australia's aquatic animal health community. This includes, but is not limited to:

- Industry, including aquaculture, fisheries, and ornamentals
- Governments, including the Australian, state and territory governments
- Service providers, including laboratories and veterinarians
- Researchers, including universities and tertiary providers of aquatic animal health training.

If you work in any aspect of aquatic animal health within Australia, this strategy is relevant to you. However, it may not be necessary to read this plan from cover to cover as certain parts may be more relevant to you, depending on your role. The plan's activities have been assigned to four specific categories to help you find relevant activities.

Activity categories and symbols used in this plan



APPLY

Activities that apply most directly at a farm or industry sector level.



STRATEGISE

Activities that focus on strategy and planning.



EXPLORE

Activities that explore novel ideas or approaches.



CONNECT

Activities that connect members of the aquatic animal health community and support collaboration.



SUMMARY OF OBJECTIVES AND ACTIVITIES

Objective 1: Border biosecurity and trade.

Industry-government collaboration and communication on Australia's border biosecurity risk management system are strengthened and technical market access barriers are addressed strategically.



- 1.1** Two-way engagement on import policy and decision-making processes.



- 1.2** R&D strategic priorities for aquatic risk analyses and import policies.



- 1.3** Strategic approach to meet technical requirements and support market access.

Objective 2: Enterprise and regional biosecurity.

Integrated enterprise and regional biosecurity programs are strengthened to support the productivity and sustainability of aquaculture and fisheries.



- 2.1** Enterprise biosecurity plan writing workshops.



- 2.2** Enterprise biosecurity plan implementation support program.



- 2.3** Evaluating and improving enterprise biosecurity plans.



- 2.4** Translocation of broodstock and genetic material.



- 2.5** Review current approaches for managing ornamental fish in Australia.



- 2.6** National ornamental fish communication campaign.



Objective 3: Surveillance.

Government and industry investment in the national surveillance system is optimised.



- 3.1** National surveillance strategy.







- 3.2** Sector-specific surveillance plans.



- 3.3** Sensitivity of the passive surveillance system.





Objective 4:
Diagnostic capability.

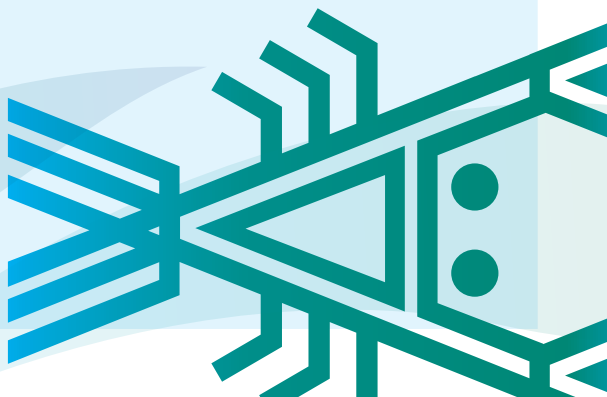
Australia's national diagnostic network for aquatic animal diseases provides reliable testing capability for known and emerging diseases.

-  **4.1** Assess the future needs of Australia's diagnostic system.
-  **4.2** Technical guidelines for validation of aquatic animal disease diagnostic tests.
-  **4.3** Diagnostic accuracy studies for priority aquatic animal diseases.
-  **4.4** Novel and emerging diagnostic methods.
-  **4.5** Improve Neptune and its database.

Objective 5:
Emergency preparedness.

Industries and governments enhance their capacity and capability, and understand their roles and responsibilities in mounting rapid, appropriate, and collaborative emergency responses.

-  **5.1** National priority aquatic animal disease list.
-  **5.2** Biosecurity action plans for priority aquatic animal diseases.
-  **5.3** Sector-specific simulation exercises.
-  **5.4** New or revised contingency planning arrangements.
-  **5.5** Practical disease investigation guidelines for new and emerging diseases.





Objective 6: Veterinary medicines.

Improved access to veterinary medicines, chemicals and vaccines strengthens management of aquatic animal health and welfare and supports prudent use of antimicrobials and therapeutics.



6.1 Understand existing veterinary medicine use.



6.2 Aquatic animal minor use permit applications.



6.3 Establish antimicrobial resistance baselines for aquaculture sectors.



Objective 7: Research and Innovation.

Research priorities are driven by industry and government needs and new knowledge is created, made accessible and extended to industry to improve aquatic animal health and welfare.



7.1 Research priority setting, engagement, and communication.



7.2 Extension and adoption of aquatic animal health research.

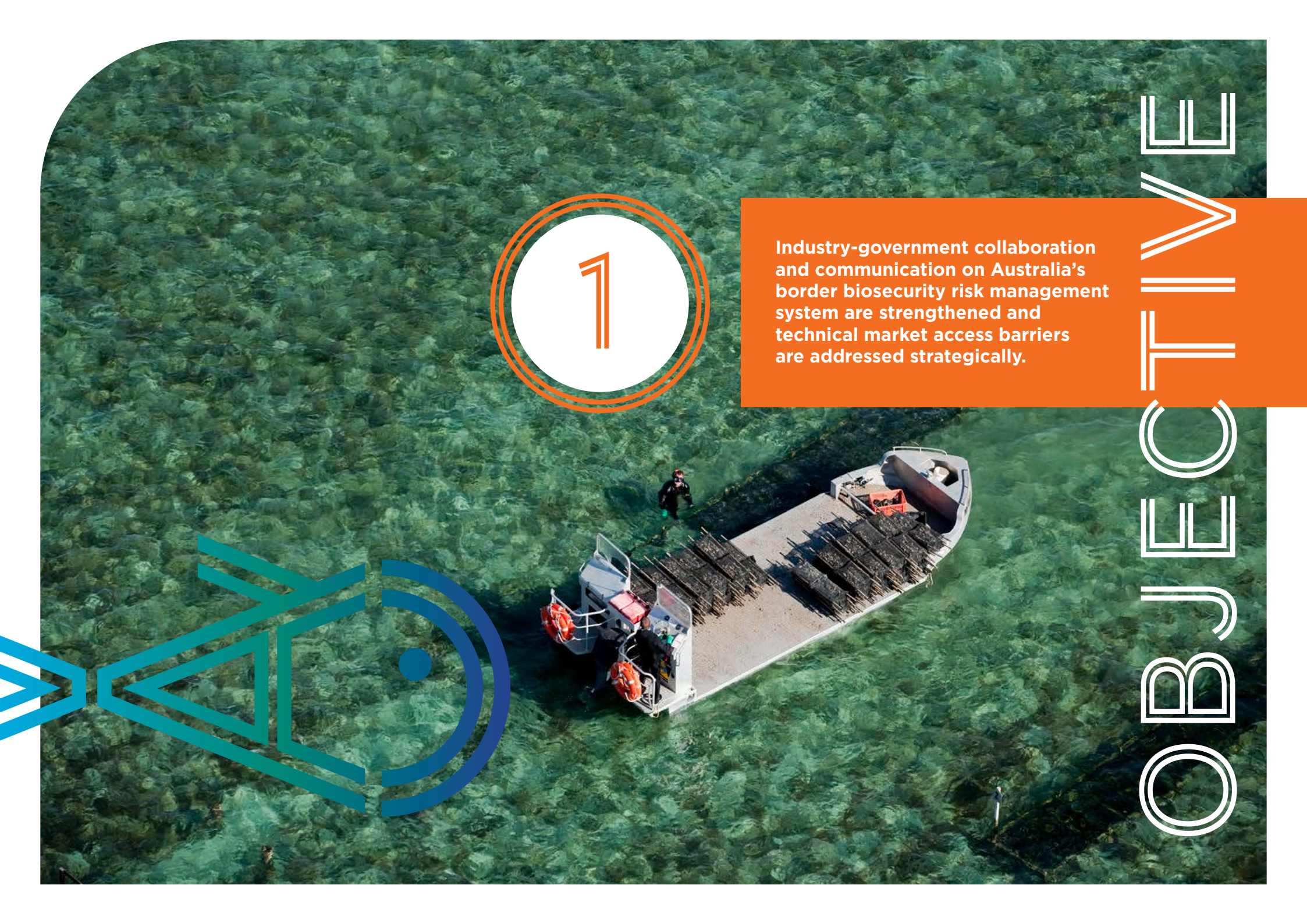
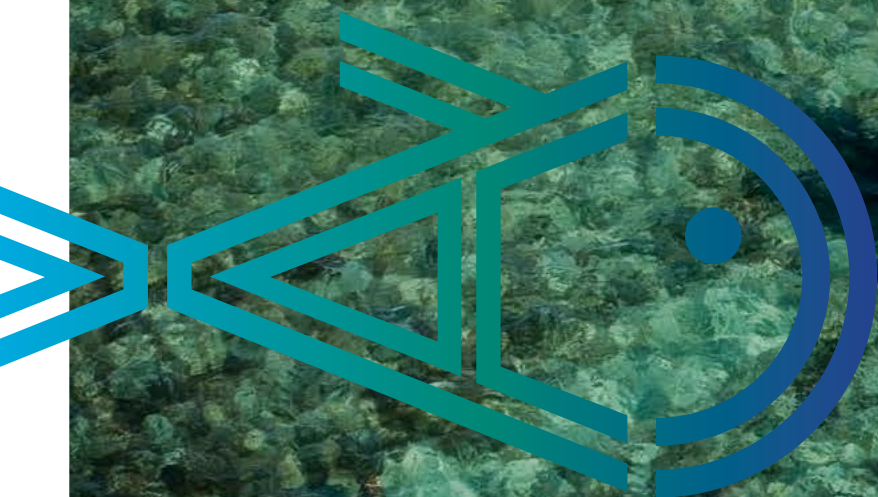


7.3 AQUAPLAN webinar series.

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Industry-government collaboration and communication on Australia's border biosecurity risk management system are strengthened and technical market access barriers are addressed strategically.

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BORDER BIOSECURITY AND TRADE

Australia is free from many damaging aquatic animal diseases found elsewhere in the world. This provides advantages for market access, aquaculture productivity, fisheries sustainability and for protecting Australia's unique aquatic animals and environments.

Trade is an important part of Australia's \$3.15 billion (GVP, 2019-20) aquaculture and fisheries industry, with \$1.41 billion of this total value contributed to seafood exports². Imported seafood products are another important component of the trade cycle, valued at an estimated \$2.20 billion (2019-20)². Trade in aquatic animal products is facilitated by Australia's biosecurity risk management measures for imported products and by Australia's systems to meet the sanitary requirements of our trading partners for our exported products.

The biosecurity continuum includes measures pre-border, at the border and post-border. Border biosecurity measures are an important component of Australia's biosecurity continuum that aims to preserve and enhance Australia's favourable disease status.

Border biosecurity measures are implemented in accordance with the Australian Government's *Biosecurity Act 2015* and consistent with Australia's international obligations. These include the Sanitary and Phytosanitary Agreement of the World Trade Organization (WTO) and the aquatic animal health standards of the World Organisation for Animal Health (WOAH).

A key internationally recognised mechanism of developing border biosecurity measures is through risk analyses. These underpin an objective and transparent approach to evaluating animal health risks and developing the least trade restrictive measures required to reduce those risks to an acceptable level. The Australian Government conducts risk analyses in accordance with the *Biosecurity Act 2015* which is consistent with the international standard for Import Risk Analyses adopted by the WOAH.

A common challenge for aquatic animal risk analyses is a lack of sufficient scientific information. In some cases, information may be so lacking that detailed analysis is simply not possible—this is particularly the case for new and emerging diseases. Research is fundamentally important to provide data to inform estimates of likelihood of entry, exposure and establishment, and the consequences of disease establishment and spread to farmed and wild aquatic animals, including fisheries resources.

Australia imports a wide variety of aquatic animal products including seafood and aquatic animal feeds. Consumers benefit from access to global supply chains that allow for diverse consumer choices at globally competitive prices. Ornamental fish are the only significant imports of live aquatic animals into Australia and, unmanaged, would present a high risk of disease entry into Australia. The management of aquatic animal health risks associated with ornamental fish includes pre-border, at border and post-border biosecurity measures and regulation of privately-owned ornamental fish quarantine facilities.

Australia's aquaculture and fisheries industries are export orientated. Key exports largely comprise of high value commodities such as, but not limited to rock lobster, abalone, salmon and tuna. Australia's favourable disease status supports market access for seafood exports. However, trading partners are increasingly requiring assurance that export products meet their sanitary requirements. This trend is likely to continue and Australia's aquatic animal health management systems will need to evolve to maintain and expand market access into the future. Through AQUAPLAN 2014-2019, progress was made on aspects of technical market access. One example is the abalone health accreditation program that successfully delivered market access opportunities. Border biosecurity was also an objective of AQUAPLAN 1998-2003.



Activity 1.1

Two-way engagement on import policy and decision-making processes.

This activity will provide a means for increased stakeholder understanding of and engagement in risk analyses and other import policy setting processes. In addition to the legislated consultation processes of formal Biosecurity Import Risk Analyses, it has been acknowledged that increased engagement and understanding by industry and government stakeholders would strengthen decision-making processes. A program of two-way communication will be established to facilitate greater information exchange and increase transparency. This activity will increase shared understanding of Australia's border biosecurity risk management system and cultivate industry-government collaboration and communication on border biosecurity issues.



Activity 1.2

R&D strategic priorities for aquatic risk analyses and import policies.

This activity will engage stakeholders to identify strategic research priorities that will address information gaps to inform import biosecurity policies. There is an ongoing need for research to support and inform the risk assessment process for aquatic animals imported into Australia. There are some common gaps in knowledge, particularly for emerging diseases, that include the susceptibility of Australian species, impacts on wild populations, and the stability of pathogenic agents in different commodities. Offshore or pre-border intelligence gathering will also be considered; to better track known and/or emerging pathogens. Through a collaborative approach to identifying research priorities this activity will focus research investment on the highest priority research issues to support import biosecurity policies. This activity will complement activities 1.1 and 7.1.



Activity 1.3

Strategic approach to meet technical requirements and support market access.

This activity will engage stakeholders to develop a strategic and prioritised approach to addressing technical market access opportunities. Australia's strong aquatic animal health management systems provide numerous opportunities to meet importing country sanitary requirements. However, the requirements may change over time and new disease challenges may emerge. Through this activity, stakeholders will be engaged to identify and prioritise strategic opportunities and vulnerabilities that may be addressed to improve or secure market access. Some possible examples include identifying sector-specific surveillance or health accreditation programs. This activity will provide a strategic mechanism to prioritise and address aquatic animal industries' technical market access challenges and needs.





Objective 1 Activities

Activity	Expected benefits/outcome	Lead and key collaborators	Resources
1.1 Establish a program of two-way engagement activities that supports collaboration and communication on issues surrounding import policy and decision-making processes.	Increased stakeholder understanding of, and engagement in, import policy setting processes, including risk analyses.	Lead DAFF Industry peak bodies Collaborators State and territory governments	Principally in-kind
1.2 Identify agreed RD&E strategic priorities to inform and support aquatic IRAs and import policies based on the best available evidence.	Strategic research priorities are identified to address significant gaps in aquatic animal health knowledge to inform import biosecurity policies.	Lead FRDC AAHBCP* Collaborators Industry peak bodies, DAFF	Principally in-kind Draws on outcomes of activities 1.1 and 7.1.
1.3 Develop a strategic approach to meet the technical requirements of Australia's trading partners and support market access opportunities for industry.	A strategic approach to address technical market access opportunities and vulnerabilities is developed collaboratively by industries and governments.	Lead DAFF Collaborators Industry peak bodies	Direct resources for consultation and analysis

Note: the 'activity lead' is expected to drive the activity (i.e., develop and implement the project plan, source available funding [where required]) and to liaise with key collaborators to achieve the expected benefits and outcome (refer to page 50 on Implementation).

*FRDC AAHBCP is the Fisheries Research and Development Corporation's Aquatic Animal Health and Biosecurity Coordination Program.





2

Integrated enterprise and regional biosecurity programs are strengthened to support the productivity and sustainability of aquaculture and fisheries.

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ENTERPRISE AND REGIONAL BIOSECURITY

Enterprise biosecurity describes the systems put in place to protect aquatic businesses (or “enterprises”) from disease. It is a systematic way of reducing business-level risks and forms a foundation for the management of aquatic animal health. It is important for business risk management to reduce the likelihood of a serious disease outbreak occurring, and to reduce the impact if it were to occur.

The application of biosecurity practices by aquaculture and fisheries enterprises supports business productivity and profitability by maintaining and improving animal health and welfare.

Enterprise biosecurity is a key component of the broader biosecurity system. Collective implementation of biosecurity measures by aquaculture enterprises reduces the risk of disease at both the regional and national level, as well as for aquatic ecosystems, including fisheries resources. Enterprise biosecurity integrates with other elements of the biosecurity system and the six other objectives of AQUAPLAN.

Responsibilities for enterprise and regional biosecurity extend beyond aquaculture industries to other users of aquatic resources and environments. This includes commercial, recreational, and customary fisheries, public users, and governments. Each of these parties have responsibility to implement measures to minimise and manage risk. However, this objective focuses deliberately on enterprise and regional level biosecurity where it is expected that gains in health management and business outcomes can be made.

Substantial progress has been made through the previous AQUAPLANs to develop generic and sector-specific biosecurity planning guidance documents. Most recently, a survey of aquaculture businesses identified future needs to support the development and implementation—or refinement—of enterprise-specific biosecurity plans. Building on these activities, this objective will support individual enterprises to develop biosecurity measures that are practical, cost-effective and make sense for a farm’s specific priorities and risks. There are three key stages to on-farm biosecurity plan implementation: 1) developing a fit-for-purpose auditable biosecurity plan, 2) implementing the plan, and 3) continually measuring its effectiveness and appropriateness. Activities of this objective address all three stages.

Domestication and genetic improvement are key avenues for increasing productivity by pursuing desirable traits such as disease resistance, improved growth, food conversion, or environmental tolerance. Domestication also provides opportunities to strengthen biosecurity by producing animals of a known health status, for example, specific pathogen free stock. However, for domestication programs to reach their full potential and be applied nationally, the biosecurity risks associated with the movement of live aquatic animals need to be effectively managed, so that translocations can occur safely. Domestic translocation of genetic material needs to be addressed to promote investment in breeding programs and support the long-term growth and productivity of the aquaculture industry.

The ornamental aquarium fish trade in Australia is worth an estimated \$350 million annually⁴ and includes commercial fish breeding facilities, wholesale traders, retail outlets and fish hobbyists. Unmanaged ornamental fish can present a significant risk of transmitting aquatic animal diseases leading to outbreaks or incursions, particularly in freshwater habitats. National management of ornamental fish has been guided by the *Strategic approach to the management of ornamental fish in Australia* (published in 2006). A review of this national strategy and an associated national communication campaign would contribute to managing the aquatic animal disease risks associated with ornamental fish.



Activity 2.1

Enterprise biosecurity plan writing workshops.

This activity will deliver a series of biosecurity plan writing workshops for interested sectors where businesses can develop or review their enterprise biosecurity plan. The workshops will be interactive, driven by the needs of attendees and provide an opportunity to work with peers and other experts. The output will be a fine-tuned or drafted enterprise biosecurity plan that is business relevant and practical. This activity will support development of fit for purpose biosecurity plans that systematically identify and manage biosecurity risks at an enterprise level.



Activity 2.2

Enterprise biosecurity plan implementation support program.

This activity will deliver a program for farm managers to access a panel of trusted subject-matter experts to support implementation of fit-for-purpose biosecurity practices. The program will also be open to fishers, where needs are identified. Once an enterprise biosecurity plan is developed, the next step is to apply it on site and address specific challenges that arise. This activity will provide business managers access to subject-matter experts to refine and operationalise their biosecurity plans.



Activity 2.3

Evaluating and improving enterprise biosecurity plans.

This activity will deliver training for business managers and other interested industry members to evaluate the effectiveness of their biosecurity plans and to identify ways to improve them over time (e.g., through incorporation into a quality management system). Implementing biosecurity plans requires substantial investment of resources, making it essential that businesses have the tools to evaluate its effectiveness and continually adapt as the business develops, or risks change. Effective biosecurity planning provides powerful evidence to support trade, creates business opportunities and demonstrates adherence to existing regulatory requirements. The training will use the principles of self-auditing and will be developed with industry, for industry, to ensure it is practical and fit-for-purpose. This activity will empower businesses to monitor the effectiveness of their biosecurity plans and cultivate a culture of continuous improvement that supports adaptation to changing risks or operating conditions.





Activity 2.4

Translocation of broodstock and genetic material.

This activity will investigate the barriers to, and opportunities for, the domestic translocation of high value aquatic animals (e.g. broodstock) and genetic material. There will be increasing importance placed on domestication and selective breeding of aquatic animals to improve desirable characteristics such as growth and disease resistance. This activity will explore current and expected translocation needs of industry, existing regulation, and possible frameworks for managing biosecurity risks. This activity will provide recommendations for how translocation of high value animals and genetic material can be facilitated while effectively managing biosecurity risks.



Activity 2.5

Review current approaches for managing ornamental fish in Australia.

This activity will support revision of the nationally agreed approaches for managing ornamental fish in Australia. Management of ornamental fish is complex and entails risks associated with invasive pest species and aquatic animal diseases. Much work has been undertaken nationally to improve management of ornamental fish, guided by the *Strategic approach to the management of ornamental fish in Australia* published in 2006. This activity will contribute to the revision of this national strategy to ensure it continues to provide for sound management of the aquatic animal health risks associated with ornamental fish.



Activity 2.6

National ornamental fish communication campaign.

This activity will contribute to the development and implementation of a national communication campaign on ornamental fish to instil behavioural change in target stakeholder groups (including aquarium shops and the general public). This activity will build on previous state and territory focused campaigns and will raise awareness nationally of the aquatic animal diseases risks associated with ornamental fish and educate target stakeholders on how to effectively manage those risks. The effectiveness of the communication campaign will be assessed through a series of stakeholder surveys and will provide recommendations on priorities and approaches for any further initiatives. This activity will provide stakeholders with clear and consistent messaging on the disease risks associated with ornamental fish and contribute to their effective management.



Objective 2 Activities

Activity	Expected benefits/outcome	Lead and key collaborators	Resources
2.1 Develop and deliver sector-specific biosecurity plan writing workshops	Workshop attendees have developed or refined an enterprise biosecurity plan that is specific to their business.	Lead Peak industry bodies Collaborators Commonwealth, state and territory governments, FRDC	Direct for facilitators; in-kind for participants
2.2 Develop an on-farm biosecurity support program for farm managers: to implement fit for purpose biosecurity practices	Farm managers have worked with subject-matter experts to refine their biosecurity plan and solve challenges in implementing the plan.	Lead Peak industry bodies Collaborators Commonwealth, state and territory governments	Direct for subject matter experts; in-kind for participants Draws on outcomes of activity 2.1.
2.3 Develop a continual improvement training program: to support the evaluation and improvement of on-farm biosecurity plans and practices	Farm managers and other interested industry members have been trained in tools to evaluate the effectiveness of their biosecurity plan and improve and adapt the plan over time to meet changing risks.	Lead Peak industry bodies Collaborators Commonwealth, state and territory governments	Direct for trainers; in-kind for participants Draws on outcomes of activity 2.2.
2.4 Identify barriers to and opportunities for the domestic translocation of broodstock and genetics	Opportunities, needs, and barriers to domestic translocation of high value animals and genetic material have been clarified, and options for developing a national approach to domestic translocation have been identified.	Lead SCAAH* Collaborators Peak industry bodies	Direct to coordinate stakeholder consultation and analysis

* The Sub-Committee on Aquatic Animal Health (SCAAH) is an advisory committee to Animal Health Committee (AHC). SCAAH provides high-level scientific, technical and strategic advice to AHC, supporting policy and program development regarding national aquatic animal health. SCAAH comprises representation from the Australian, State, Northern Territory and New Zealand governments, CSIRO ACDP, and Australian universities





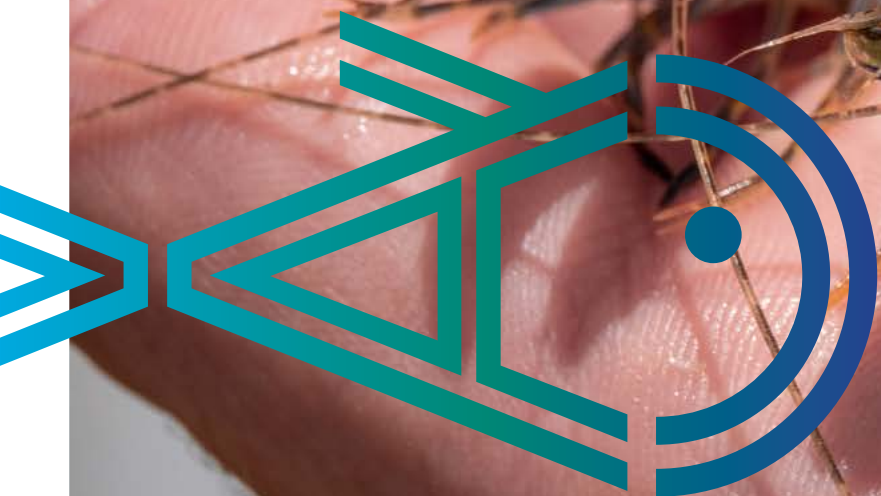
Activity	Expected benefits/outcome	Lead and key collaborators	Resources
2.5 Contribute to a review of the 'strategic approach to the management of ornamental fish in Australia' (2006).	Aquatic animal health issues are considered in the review of the 'strategic approach to the management of ornamental fish in Australia' and where appropriate, the strategy is revised to support sound management of aquatic animal health risks associated with ornamental fish.	Lead EIC* Freshwater Vertebrates and Invertebrates working group, and industry Collaborators SCAAH	Principally in-kind; direct for publication.
2.6 Develop a national ornamental fish communication campaign to instil behavioural change in target stakeholder groups.	Target stakeholder groups have an increased understanding of the disease risks posed by ornamental fish species in Australia and have the information available to help them take greater responsibility for effectively managing those risks.	Lead Industry peak bodies Collaborators EIC Freshwater Vertebrates and Invertebrates working group	Direct for preparation and dissemination of materials and for measuring impact.

Note: the 'activity lead' is expected to drive the activity (i.e., develop and implement the project plan, source available funding [where required]) and to liaise with key collaborators to achieve the expected benefits and outcomes (refer to page 50 on Implementation).

*The **Environment and Invasives Committee** is responsible for providing national policy leadership on the identification, prevention and management of invasive plant, vertebrate and invertebrate species that adversely impact the environment, economy and community

3

Government and industry
investment in the national
surveillance system is
optimised





SURVEILLANCE

Surveillance is fundamentally important for early detection of disease, demonstration of Australia's disease status and market access. It also underpins many aquatic animal health management decisions on issues such as regional biosecurity, translocation policy and on-farm risk management measures.

There has been significant investment in Australia's aquatic animal health surveillance system, including through each of the three previous AQUAPLANs. These investments have built an enviable surveillance system that is efficient and fit for purpose. However, surveillance needs are changing, driven by changes within industry and the environment, technological advances, the changing requirements of trading partners, and new disease threats. Australia's national surveillance system will need to evolve to address and preferably anticipate some of these changes – this is the focus of this objective.

There are many drivers for industry sectors to take an increasingly strategic view of surveillance. Australia's aquaculture and fisheries sectors face different combinations of challenges and opportunities with respect to emerging disease threats, climate change, market access, domestication, and genetic selection of stock. Strategic consideration of sector-specific surveillance needs will assist sectors to address future challenges, take advantage of opportunities and ensure surveillance investments are targeted to the highest priority needs.



Australia's passive surveillance system underpins many key surveillance needs such as early detection and claims for historical freedom from disease. Passive surveillance is also known as observer-initiated surveillance, meaning that it relies on an observer viewing a health event, reporting it and subsequent investigation identifying or excluding infectious disease.

Passive surveillance operates constantly; whenever animals are being observed by a farmer, fisher, veterinarians, or others. However, the sensitivity* of Australia's passive surveillance system to detect certain diseases has not been calculated. By determining the sensitivity of the system, its ability to meet certain needs, such as early detection, can be determined and the system optimised.

This objective will take a strategic view of Australia's surveillance system at the national and sector-specific level and will identify how Australia's surveillance system can be strengthened to meet future needs. The objective will contribute to fundamental needs of our aquatic animal health system such as demonstrating disease status and ensuring early detection of emerging and exotic diseases.

* Sensitivity in this context refers to the ability of the passive surveillance system to detect the occurrence of aquatic emergency animal diseases should they be present.



Activity 3.1

National surveillance strategy.

This activity will develop a national aquatic animal health surveillance strategy that describes what is needed from the national surveillance system, now and into the future. The strategy will identify, common needs, objectives, responsibilities, priority areas for investment and how they can be funded sustainably. The strategy will be developed collaboratively by investors in aquatic animal health surveillance, including industry and governments. It will provide a framework against which sector-specific surveillance plans (activity 3.2) can be developed. This activity will provide an agreed national approach for the surveillance system to underpin confidence in Australia's disease status and ability to rapidly detect and respond to diseases.



Activity 3.2

Sector-specific surveillance plans.

This activity will develop sector-specific surveillance plans that identify priority surveillance objectives and how these can be achieved at a sector level. Participating sectors, in consultation with governments, will agree on desired surveillance outcomes and identify the necessary surveillance activities to achieve them, including for specific diseases. Issues such as data sharing, active surveillance activities and the role of passive surveillance will be addressed and mechanisms to share domestic disease reporting and surveillance data will be formalised. Sustainable funding to implement the surveillance plans will need to be considered. This activity will identify sector-specific and operational surveillance goals and in doing so, support confidence in disease-status for market access, translocation of animals, and increased opportunities for effective responses through early detection of disease.



Activity 3.3

Sensitivity of the passive surveillance system.

This activity will investigate the sensitivity of the passive surveillance system to detect an example disease in a specific sector as a pilot study. The methodology for this activity will be informed by previous studies that have quantified the sensitivity of the passive surveillance systems for some terrestrial animal diseases. From this analysis, strengths and weaknesses in the system will be identified and used to provide recommendations for improvement. The analysis may act as a benchmark of sensitivity from which interventions to improve the performance of the passive surveillance system can be measured over time. This activity will contribute to understanding the sensitivity of the passive surveillance system and identify the areas that need to be addressed to strengthen it.





Objective 3 Activities

Activity	Expected benefits/outcome	Lead and key collaborators	Resources
3.1 Develop a national surveillance strategy for aquatic animal diseases	A national surveillance strategy is developed that guides how investors in aquatic animal health surveillance will strengthen the system and address changing needs and technologies.	Lead SCAAH Collaborators Peak industry bodies	Principally in-kind Direct to facilitate consultation
3.2 Develop sector-specific surveillance plans to identify surveillance objectives and how they will be achieved	Interested industry sectors have identified and prioritised their surveillance objectives (including data sharing) in cooperation with governments and have a plan for how they will achieve these.	Lead Peak industry bodies Collaborators Commonwealth, state and territory governments	Principally in-kind Direct for consultation and drafting Draws on outcomes of activity 3.1
3.3 Understand the sensitivity of the passive surveillance system for an example sector and disease	The sensitivity of passive surveillance is quantified for an example sector and disease as a pilot study, and strengths and weaknesses of the system are identified.	Lead DAFF Collaborators Peak industry bodies, state and territory governments	Direct for research project In-kind for consultation

Note: the 'activity lead' is expected to drive the activity (i.e., develop and implement the project plan, source available funding [where required]) and to liaise with key collaborators to achieve the expected benefits and outcomes (refer to page 50 on Implementation).





4

Australia's national diagnostic network for aquatic animal diseases provides reliable testing capability for known and emerging diseases

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DIAGNOSTIC CAPABILITY

Australia's national diagnostic network for aquatic animal diseases has been developed over time to support the many functions of Australia's aquatic animal health management system. These include confirmation or exclusion of exotic diseases, implementing disease management measures, enterprise health accreditation and demonstration of regional or national disease status.

The investment in Australia's diagnostic network and diagnostic methods has been substantial and has resulted in significant strength for testing reliability and capacity.

Australia's diagnostic network draws on nodes of expertise throughout national and state government laboratories, research laboratories and private service providers. The high standard of diagnostic service is built upon quality research, validation of methods, diagnostic and laboratory standards, and programs to support quality assurance. However, despite these strong and established elements, Australia's diagnostic network must continue to evolve.

Many factors are driving changing needs and providing opportunities for our diagnostic system. There is growing demand for diagnostic services due to increasing requirements of trading partners, emerging diseases and the growing needs of industry to monitor stock health status. New opportunities are also emerging through technologies such as high throughput sequencing, point of care tests and autonomous or remote monitoring systems. While demand and opportunities are increasing, the number of specialist aquatic diagnosticians are diminishing. Consideration is required to ensure expertise is available to meet the demand for services. These drivers of change will need to be considered and planned for if affordable and reliable diagnostic services are to continue to serve the needs of industries and governments.



**DESPITE THESE STRONG
AND ESTABLISHED ELEMENTS,
AUSTRALIA'S DIAGNOSTIC
NETWORK MUST CONTINUE
TO EVOLVE**

Diagnostic test validation is a fundamentally important process for determining the performance of a diagnostic test for defined purposes of use. Australia follows the WOAHS standards for validation of diagnostic methods to demonstrate their accuracy. Validation is expensive but can provide substantial return on investment by allowing optimisation of surveillance programs and reducing their cost, while also providing confidence in the evidence they produce. For example, by determining the performance of methods on pooled samples, the number of tests required might be reduced with very significant cost savings.

New diagnostic approaches and technologies are being developed that are becoming powerful tools for field and laboratory application. While these new technologies are proving valuable, their appropriate application and reliability must be determined. By exploring and evaluating new technologies (e.g. for whole genome sequencing or environmental DNA), Australia's diagnostic network will be able to take advantage of opportunities and avoid any pitfalls from possible inappropriate use.

As technologies change so do fields of diagnostic expertise. Specialist aquatic histopathologists are becoming less common despite the ongoing value of their skills – particularly for research and disease investigation of new and unknown diseases. Neptune, Australia's aquatic animal health information system, was established to collate and share aquatic animal health information, including digitised histopathology slide collections. There is a need for ongoing maintenance of the information assets in Neptune if it is to continue to serve the needs of the aquatic animal health community, including to provide a resource for training.





Activity 4.1

Assess the future needs of Australia's diagnostic system.

This activity will assess the future needs of end-users from Australia's aquatic animal disease diagnostic system such as industry and governments. Stakeholder consultation will inform the future demands on the diagnostic system over the next 5-10 years and how new technologies could contribute to meeting those demands. Based on the views of stakeholders, including anticipated growth and changes within industry, priority areas for investment in the diagnostic system—including research and policy—will be identified. This activity will provide stakeholders with a direction for the future development of Australia's diagnostic system for aquatic animal diseases.



Activity 4.2

Technical guidelines for validation of aquatic animal disease diagnostic tests.

This activity will develop national technical guidelines for each of the different stages of validation of aquatic animal disease molecular diagnostic tests. Although international standards are available to guide validation they can be applied with varying rigour. Through this activity, national technical guidelines will be developed that provide a consistent standard of rigour for applying the international standards when validating diagnostic methods to be used within Australia. The activity will provide stakeholders (including industry, governments, and laboratories) with a clear and consistent approach to the validation of diagnostic tests.



Activity 4.3

Diagnostic accuracy studies for priority aquatic animal disease diagnostic tests.

This activity will evaluate the validation level of existing diagnostic tests for priority aquatic animal diseases and prioritise those that require additional validation. The activity will be informed by the action plans developed through activities 5.1 and 5.2. Prioritisation will also be informed by several factors including the current level of validation, importance for border or regional biosecurity, importance for on farm health management, and potential return on investment. Diagnostic accuracy studies will be conducted for the highest priority diagnostic tests and identified purposes of use. This activity will provide end-users with greater access to fit for purpose diagnostic tests of known performance.



Activity 4.4

Explore the use of novel and emerging diagnostic methods.

This activity will explore the use of novel and emerging diagnostic methods (for example, pond-side test kits, environmental DNA and non-lethal sampling methods such as sentinels) for aquatic animal health surveillance and management. Methods will be identified and prioritised for further assessment based on their suitability to address the needs of Australia's aquatic animal health management system, and where warranted, national guidelines will be developed for their evaluation, interpretation, and use. This activity will contribute to an increased diversity in diagnostic capability and capacity, while ensuring that identified diagnostic tests are fit for purpose and reliable.



Activity 4.5

Improve Neptune and its database.

This activity will improve the utility and functionality of Neptune, Australia's national system for storing and sharing aquatic animal disease information and resources. Neptune contains a database of all published records of aquatic animal pathogens from crustaceans, finfish, and molluscs in Australia. It also includes a digitised library of histological slides. Neptune's database will be enhanced to provide additional content, including histological slides for reference and training purposes. Neptune will be promoted within the aquatic animal health community using a targeted communication campaign and training to encourage the input of new data. This activity will enhance the value of Neptune's information system and will further engage users in sharing and accessing resources to build its value.



Objective 4 Activities

Activity	Expected benefits/outcome	Lead and key collaborators	Resources
4.1 Assess Australia's aquatic animal health diagnostic capability and capacity for the next 5-10 years and identify a strategic approach to meet those future needs	The capability and capacity of Australia's diagnostic system for aquatic animal diseases is assessed and the future needs of its end-users and service providers are identified.	Lead SCAAH Collaborators Industry peak bodies	Direct to facilitate consultation and report drafting; in kind for participants
4.2 Develop national technical guidelines for the validation of aquatic animal disease molecular diagnostic tests	National technical guidelines for validation of aquatic animal disease molecular diagnostic tests are developed.	Lead SCAAH Collaborators SCAHLs*	In-kind
4.3 Undertake diagnostic accuracy studies for priority aquatic animal disease diagnostic tests	The validation status of priority aquatic animal disease diagnostic tests is identified, and diagnostic accuracy studies are conducted for prioritised tests.	Lead CSIRO-ACDP Collaborators SCAAH	Direct for diagnostic accuracy studies Draws on outcomes of activities 4.2, 5.1 and 5.2.
4.4 Explore the use of novel and emerging diagnostic methods and develop national policy guidelines for their evaluation, validation, interpretation, and use	New and emerging diagnostic methods are prioritised for further assessment based on their suitability to address the needs of Australia's aquatic animal health management system, and where warranted, national guidelines are developed for their evaluation, interpretation, and use.	Lead SCAAH Collaborators Industry peak bodies, researchers, SCAHLs	Direct for laboratory assessments Draws on outcomes of activity 4.1.
4.5 Improve the utility, usability and functionality of Neptune and its aquatic animal disease database	Neptune's database is enhanced to incorporate additional content and is promoted within the aquatic animal health community to increase access and contributions to its resources.	Lead CSIRO-ACDP Collaborators DAFF, SCAAH	Direct for data acquisition

Note: the 'activity lead' is expected to drive the activity (i.e., develop and implement the project plan, source available funding [where required]) and to liaise with key collaborators to achieve the expected benefits and outcomes (refer to page 50 on Implementation).

* The Subcommittee on Animal Health Laboratory Standards (SCAHLs) provides technical advice to Chief Veterinary Officers around Australia on animal health laboratory issues. SCAHLs coordinates several essential laboratory functions to support Australia's national animal health system.



5

Industries and governments enhance their capacity and capability, and understand their roles and responsibilities in mounting rapid, appropriate, and collaborative emergency responses.

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EMERGENCY PREPAREDNESS

Emergency aquatic animal disease outbreaks are a substantial threat to aquatic animal production and aquatic environments.

The nature of emergency aquatic animal diseases makes them difficult to predict and manage as they are often highly pathogenic and have the potential to affect both wild and captive populations. New and emerging aquatic animal diseases* are common, and eradication is challenging where outbreaks occur in open systems due to the presence of wild reservoir hosts.

If an emergency response is to be effective preparation before the event is essential. Through previous AQUAPLANs, efforts have focused on developing contingency plans (AQUAVETPLAN) and governance structures (e.g. national coordination mechanisms) to support an effective and timely response.

The focus of this objective is to identify the highest priority disease threats and strengthen preparedness and risk mitigation for them. The first step will be to identify priority exotic diseases that present the greatest concern to industries and government. Action plans will be developed for these diseases that address identified gaps in preparedness or risk mitigation.

Australia has a world-leading system of contingency planning arrangements in place for aquatic animal disease outbreaks. However, there is an on-going need to test contingency arrangements for priority diseases to ensure that they remain fit-for-purpose. Testing will be achieved through exercises based on possible outbreak scenarios. A subsequent activity will be to update or create contingency arrangements to reflect any gaps identified through the exercises or biosecurity action plans.

Emerging diseases are challenging because reliable diagnostic methods are often not available and epidemiological information to guide responses may be absent. These circumstances present challenges for decision making and disease investigation because there may be competing priorities between the need to learn about a disease and the need to contain or eradicate it.

While the circumstances of each outbreak differ, general principles and approaches apply and if they are documented they can be used to guide responses to emerging diseases.

Trust, transparency, effective communication, clear responsibilities and common goals are key elements of a successful response. While no activity is specifically dedicated to these issues, all activities in this objective will support the building of trust and understanding among industry and governments. These elements can then be drawn on in a disease outbreak and facilitate collaboration in high pressure situations.

**IF AN EMERGENCY RESPONSE
IS TO BE EFFECTIVE,
PREPARATION BEFORE THE
EVENT IS ESSENTIAL**

* According to the WOA Aquatic Code, an emerging disease is "a) a change of known pathogenic agent or its spread to a new geographic area or species; or b) a newly recognised or suspected pathogenic agent". Emerging diseases characteristically are poorly understood which creates challenges for surveillance and management.



Activity 5.1

National priority aquatic animal disease list.

This activity will identify exotic aquatic animal diseases that are a shared priority for industry and government to invest in targeted preparedness and risk mitigation activities. Development of priority disease lists was a recommendation of the *Review of the capacity of Australia's biosecurity system and the underpinning Intergovernmental Agreement on Biosecurity (2012)*. The list will be developed through a detailed analysis of the possible consequences of disease establishment and spread and consultation with relevant stakeholders. Similar priority lists have been developed for terrestrial animal, plant, and environmental sectors. For each of the listed diseases a biosecurity action plan will be developed (through activity 5.2) to guide resource allocation for preventing disease outbreaks and preparing to respond effectively should outbreaks occur. Development of a sound priority disease list will ensure that other activities identified in this plan are targeted at the agreed highest priority disease risks.



Activity 5.2

Biosecurity action plans for priority aquatic animal diseases.

This activity will build on activity 5.1 and develop biosecurity action plans for each of the identified priority exotic diseases. The biosecurity action plans will address planning activities across all major areas of the biosecurity system, such as surveillance, response planning, risk management and risk assessment, and prioritise action on any identified gaps. Collaboration among industry, government and relevant stakeholders will be fundamental to identify and implement shared priority actions. The action plans will be a living document and used to guide resource allocation towards identified gaps. This activity will provide a systematic approach to improve risk mitigation and preparedness for Australia's highest priority aquatic animal diseases.



Activity 5.3

Sector-specific simulation exercises.

This activity will deliver a series of sector-specific emergency disease simulation exercises focusing on exotic disease outbreak scenarios that involve industry and government participants, and other relevant stakeholders. Priority diseases identified in activity 5.1 will be the subject of the exercises in accordance with needs identified in the biosecurity action plans developed under activity 5.2. The exercises will have a strong focus on technical aspects of a response and will test the fitness-for-purpose of existing contingency planning arrangements (e.g., AQUAVETPLAN). This activity will build partnerships, cultivate a shared understanding of managing a response and identify ways to strengthen contingency planning before a disease outbreak occurs.





Activity 5.4

New or revised contingency planning arrangements.

This activity will enhance Australia's contingency plans for emergency aquatic animal diseases outbreaks based on the outcomes and priorities identified through activities 5.1, 5.2, and 5.3. An agreed workplan will be developed to guide this activity. The focus will be on improving existing AQUAVETPLAN manuals and may also develop new manuals or guidance documents where they are prioritised. This activity will enhance Australia's contingency planning arrangements for the highest priority aquatic animal diseases and ensure they are fit-for-purpose and practical for industry and government needs.



Activity 5.5

Practical disease investigation guidelines for new and emerging diseases.

This activity will develop practical disease investigation guidelines that clearly and concisely outline the investigation process for new and emerging aquatic animal diseases. The disease investigation process will be outlined in a step-by-step manner that ties together available contingency plans and diagnostic standards (for example, AQUAVETPLAN and Australian and New Zealand Standard Diagnostic Procedures). This activity will complement Activity 5.4 and will provide businesses, laboratories and field and government staff with increased confidence and certainty during disease investigations. This in turn will lead to more effective and efficient emergency aquatic animal disease investigations.



Objective 5 Activities

Activity	Expected benefits/outcome	Lead and key collaborators	Resources
5.1 Develop a national priority aquatic animal disease list	Priority aquatic animal diseases have been identified and agreed by industry and governments. A priority disease list has been developed.	Lead DAFF Collaborators Industry peak bodies, state and territory governments	In-kind
5.2 Develop biosecurity action plans for national priority aquatic animal diseases that identify gaps in preparedness or risk mitigation for those diseases	Biosecurity action plans have been collaboratively developed for each priority disease, and gaps identified where resources need to be applied to improve preparedness or risk mitigation.	Lead DAFF Collaborators Industry peak bodies, state and territory governments	Direct to develop action plans Draws on outcomes of activity 5.1.
5.3 Develop and deliver sector-specific simulation exercises for industry and governments to test and strengthen preparedness arrangements	A series of sector-specific simulation exercises have tested existing contingency planning arrangements and identified opportunities to strengthen arrangements.	Lead DAFF Collaborators Peak industry bodies, state and territory governments	Direct to plan, hold and report on exercises; in-kind participation Draws on outcomes of activities 5.1 and 5.2.
5.4 Build on existing national contingency planning arrangements to support industry and government needs during a response	A work plan to review and revise existing AQUAVETPLAN manuals and develop new manuals or guidance documents (where they are prioritised) is developed and delivered.	Lead DAFF Collaborators Peak industry bodies, SCAAH	Direct and in-kind Draws on outcomes of activities 5.1, 5.2 and 5.3.
5.5 Develop practical disease investigation guidelines for new and emerging aquatic animal diseases	Practical disease investigation guidelines are developed that outline the investigation process for new and emerging aquatic animal diseases.	Lead SCAAH Collaborators Industry peak bodies, FRDC AAHBCP	Direct for drafting and consultation; in-kind for stakeholder review

Note: the 'activity lead' is expected to drive the activity (i.e., develop and implement the project plan, source available funding [where required]) and to liaise with key collaborators to achieve the expected benefits and outcomes (refer to page 50 on Implementation).

A close-up photograph of a person's hands holding a small, blue, elongated fish. The fish has a silvery-blue sheen and a slightly mottled pattern. The person's hands are visible, with fingers gently gripping the fish. The background is blurred, showing a yellow shirt and a blue jacket. The text is overlaid on the right side of the image.

**THE FOCUS OF THIS
OBJECTIVE IS TO IDENTIFY THE
HIGHEST PRIORITY DISEASE
THREATS AND STRENGTHEN
PREPAREDNESS AND RISK
MITIGATION FOR THEM**

6

Improved access to veterinary medicines, chemicals and vaccines strengthens management of aquatic animal health and welfare, and supports prudent use of antimicrobials and therapeutics.





VETERINARY MEDICINES

Australia's aquatic animal industries require timely access to safe, appropriate, and effective veterinary chemical products—including medicines, vaccines, and antimicrobials (collectively referred to hereafter as *veterinary medicines*).

Veterinary medicines are used to prevent or alleviate animal diseases by administration of the product to animals or their environment. They are an important tool for managing aquatic animal health and welfare. However, inappropriate usage of veterinary medicines can affect trade and have adverse consequences on human and animal health.

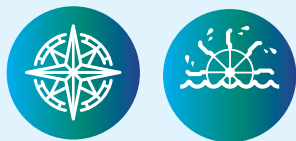
Improved access to safe and appropriate veterinary medicines was a focus of both AQUAPLAN 2005-2010 and AQUAPLAN 2014-2019 and considerable progress was made through those plans. However, due to the size and diversity of the Australian aquaculture industry, market failures for registration and supply of veterinary chemicals remain. The minor use permit (MUP) process is viewed as a means for addressing these market failures; however, the expertise required and cost to prepare applications is an obstacle for many sectors and business.

Many sectors would benefit from a nationally coordinated approach for the development of permit applications to the Australian Pesticides and Veterinary Medicines Authority (APVMA), leading to efficiencies and MUPs that have broader benefit.

Antimicrobial resistance (AMR) is a significant international issue that threatens the effectiveness of antimicrobials to treat some diseases of animals and humans. Measures to reduce AMR encompass a range of health management issues such as prudent antimicrobial use, vaccination, and biosecurity and husbandry measures to prevent or minimise disease.

National and international efforts to reduce the development of AMR are likely to affect regulations for veterinary chemical use in aquaculture (and animal production broadly) and will likely impact on trade and market access. It will be important that Australia's aquaculture industries can demonstrate ongoing efforts to support the management of AMR.

**IT WILL BE IMPORTANT THAT
AUSTRALIA'S AQUACULTURE
INDUSTRIES CAN DEMONSTRATE
ONGOING EFFORTS TO SUPPORT
MANAGEMENT OF AMR**



Activity 6.1

Understand existing veterinary medicine use.

This activity will undertake a cross-sectoral survey of the aquaculture industry and aquatic veterinarians to better understand the use of veterinary medicines, including antimicrobials, and to identify the needs and priorities of the sectors over the next 5 to 10 years. The survey results will establish a baseline for veterinary medicine use and will be used to identify the veterinary medicine needs and priorities of the aquaculture industry. This activity will complement other activities under this objective and will inform the development of future actions at both the national and sector-specific level.



Activity 6.2

Aquatic animal minor use permit applications.

This activity will develop a nationally consistent approach to facilitate future aquatic animal MUP applications with the APVMA and to maintain existing permits and registrations. This activity will build on the progress of the previous two AQUAPLANs to decrease the duplication of MUPs across the aquaculture industry and harmonise the research data generated through the MUP application process. Through this activity industry's access to safe and effective veterinary chemicals will be improved through a coordinated and efficient process.



Activity 6.3

Establish antimicrobial resistance baselines for aquaculture sectors.

This activity will establish antimicrobial resistance (AMR) baselines for interested industry sectors within the Australian aquaculture industry. The activity will be undertaken in three phases. Pilot studies conducted with the salmon and barramundi industries will be reviewed to inform the development of this activity and to identify the key benefits of AMR surveillance for industry (phase 1). An industry-government workshop will be held to discuss the outcomes of the review, identify industry needs and to develop the design and objectives of an AMR active surveillance program for aquaculture sectors (phase 2). Interested sectors will then participate in the AMR active surveillance program developed (phase 3). This activity will strengthen the Australian narrative on AMR in aquaculture by establishing baselines for aquaculture sectors.





Objective 6 Activities

Activity	Expected benefits/outcome	Lead and key collaborators	Resources
6.1 Understand existing veterinary medicine use to identify industry needs and priorities	A cross-sectoral survey is undertaken to better understand veterinary medicine use and priorities across the aquaculture industry.	Lead DAFF Collaborators Industry peak bodies, SCAAH Aquatic Veterinary Medicines working group	Direct for survey design and analysis Draws on the aims of activity 6.2
6.2 Develop a nationally consistent approach to facilitate future aquatic animal minor use permit applications	A nationally coordinated approach to facilitate applications for aquatic animal minor use permit applications to the APVMA and to maintain existing permits and registrations.	Lead SCAAH Aquatic Veterinary Medicines working group Collaborators Peak industry bodies, University of Adelaide	Direct for national coordination; FRDC funding has been provided Draws on outcomes of activity 6.1
6.3 Conduct active surveillance to establish baseline antimicrobial resistance (AMR) across interested industry sectors	Baseline AMR data is established for interested sectors within the Australian aquaculture industry. The importance and key benefits of AMR surveillance in aquaculture are communicated with industry in an effective and collaborative manner.	Lead DAFF Collaborators Peak industry bodies, state and territory governments	Direct for AMR surveillance activities

Note: the 'activity lead' is expected to drive the activity (i.e., develop and implement the project plan, source available funding [where required]) and to liaise with key collaborators to achieve the expected benefits and outcomes (refer to page 50 on Implementation).





7

Research priorities are driven by industry and government needs and new knowledge is created, made accessible and extended to industry to improve aquatic animal health and welfare.

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RESEARCH AND INNOVATION

The rapid growth of aquaculture over recent decades has been supported by significant advances in knowledge and technology, including improved understanding of cultured species, aquatic animal diseases and their epidemiology, treatment, and management methods.

Innovation is fundamentally important to support ongoing strengthening of aquatic animal health management systems. Innovation is also important to address new challenges such as emerging diseases and to drive continual improvement in areas such as productivity and sustainability.

Some circumstances of aquatic animal health management place greater demands on research and innovation. These include the diversity and relatively unique fauna of Australian aquatic animal species, diseases that are unique to Australia, the relatively short history of domestication of aquatic species, and the variety of production systems and environments.

Australia has well-established institutional arrangements for fisheries and aquaculture research, development and extension (RD&E), including for aquatic animal health. Through the Fisheries Research and Development Corporation (FRDC) industries and governments co-invest in aquatic animal health RD&E priorities. These investments are made on an industry sector basis, or at a national level through the FRDC's Aquatic Animal Health and Biosecurity Coordination program (AAHBCP), which was established through AQUAPLAN 1998–2003. Additional investments have been made by government and industry through different mechanisms such as Cooperative Research Centres, Australian Research Council grant programs, and state government programs and institutions.

Australia's aquatic animal health research community extends through academic institutions, private sector organisations and government research entities. The research community includes many internationally recognised scientists that are leading experts in their fields. Additionally, applied research is often conducted by industry or in close collaboration with industry within their operating environments.

Despite Australia's well-established and successful arrangements for aquatic animal health RD&E, the opportunities and importance of innovation demands that more be done in this area. Through this objective, AQUAPLAN will drive improvements to ensure that investments are made in areas of greatest benefit, and that new knowledge is shared effectively and in a way that facilitates adoption and application by end-users. Importantly, research and innovation are common themes that will be essential in supporting many other activities in this plan to continue to build on Australia's world's best practice, evidence-based and innovative aquatic animal health system.





Activity 7.1

Research priority setting, engagement, and communication.

This activity will develop an efficient and enduring approach to aquatic animal health RD&E priority setting that identifies the highest priority needs of end-users (including industries and governments). Priority setting is fundamentally important to success at later stages of the RD&E lifecycle, leading ultimately to adoption by end-users (addressed by activity 7.2). This activity will engage relevant parties to develop an approach led by the FRDC AAHBCP and its research partners. Through a collaborative and efficient research priority setting process, RD&E investments can be applied to issues that will have the greatest impact for end-users.



Activity 7.2

Extension and adoption of aquatic animal health research.

This activity will assess how the aquatic animal health R&D extension and adoption system is currently working and identify opportunities for improvement. The activity will identify ways for the RD&E system to deliver outputs that can and will be implemented by end-users. For this to be achieved, the engagement of end-users in priority setting (through activity 7.1) needs to be built on to ensure end-user needs are met and that the research lifecycle is not considered complete until end-users adopt the research outputs or outcomes. This activity will identify RD&E system improvements that provide for meaningful research outcomes and maximise return on investment.



Activity 7.3

AQUAPLAN webinar series.

This activity will develop and deliver a webinar series on aquatic animal health activities of interest to Australia's aquatic animal health community. The webinar series will cover a range of topics linked to AQUAPLAN activities and will provide opportunities for industry, governments, and researchers to present and exchange information. The webinar series will also provide a means for research outcomes to be routinely shared with end-users (Activity 7.2) and interested stakeholders in a manner that promotes collaboration and the exchange of ideas. It will build on the successful webinar series developed under AQUAPLAN 2014-2019. This activity will be a key initiative to cultivate engagement and meaningful discussion on AQUAPLAN activities among Australia's aquatic animal health community.

AQUAPLAN WILL DRIVE IMPROVEMENTS TO ENSURE THAT INVESTMENTS ARE MADE IN AREAS OF GREATEST BENEFIT

Objective 7 Activities

Activity	Expected benefits/outcome	Lead and key collaborators	Resources
7.1 Develop an enduring approach to collaborative RD&E priority setting, engagement, and communication.	An efficient research priority setting, engagement, and communication process is collaboratively developed.	Lead FRDC AAHBCP Collaborators Industry peak bodies, SCAAH, universities.	In-kind
7.2 Identify barriers to and opportunities for extension and adoption of aquatic animal health RD&E.	Barriers to and opportunities for extension and adoption inform RD&E system improvements that ensure that research is not considered complete until it is extended by end-users, and opportunities for adoption identified, maximising return on investment.	Lead FRDC AAHBCP Collaborators Industry peak bodies, Commonwealth, state and territory governments	Direct for consultation and analysis
7.3 Develop and deliver the AQUAPLAN webinar series	A webinar series is delivered for Australia's aquatic animal health community that provides meaningful engagement and extension opportunities for AQUAPLAN activities.	Lead DAFF Collaborators Industry and governments.	In-kind

Note: the 'activity lead' is expected to drive the activity (i.e., develop and implement the project plan, source available funding [where required]) and to liaise with key collaborators to achieve the expected benefits and outcomes (refer to page 50 on Implementation).



IMPLEMENTING THE PLAN

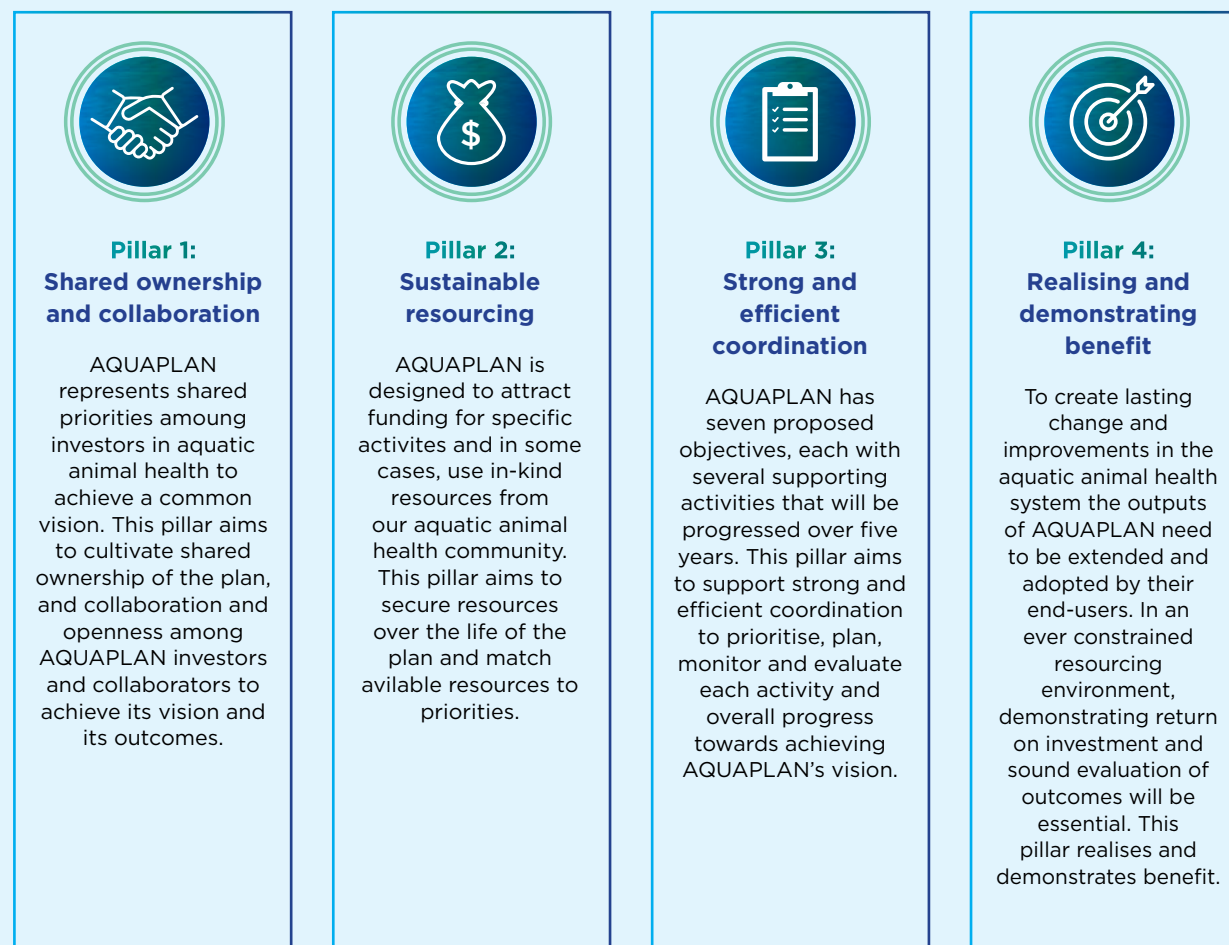
Approach to implementation

The objectives and activities of this plan were developed collaboratively among industries and governments (Appendix A and B). Implementation of the plan will also emphasise a collaborative approach. There are four pillars that will underpin implementation (Figure 1), and these will be used to develop the **implementation, communication and engagement, and monitoring and evaluation plans.**

A mid-term review will play a key role in monitoring progress and allowing for flexibility to adapt if priorities or circumstances change. For example, aquatic emergency animal disease events can cause substantial shifts in priorities.

It is recognised that over the five-year term of the plan, additional activities aligned with the objectives of the plan may be identified as priorities by stakeholders. The development and delivery of additional activities aligned to the objectives of the plan is encouraged. These may be captured in the mid-term review of the plan, or stakeholders can report these additional activities as part of the regular progress reporting on implementation, which will assist in demonstrating the overall benefit of AQUAPLAN.

Figure 1 Four pillars of AQUAPLAN Implementation



Roles and responsibilities

Clarity on roles and responsibilities is important for implementation. To successfully implement AQUAPLAN, everyone must play their part to build and share their expertise, strengths, and capabilities.

Representatives from the Australian Government Department of Agriculture, Fisheries and Forestry (DAFF), the state and territory governments and industry peak bodies will share responsibility for the implementation of AQUAPLAN. An industry-government workshop will be held annually to help guide implementation of the plan and to represent industry and governments shared interests (Figure 2).

Representatives from DAFF will provide central coordination of AQUAPLAN, by liaising with industry and governments, activity leads, and collaborators as required to progress AQUAPLAN's implementation, communication and engagement, and monitoring and evaluation plans (Figure 2).

It will be the responsibility of the activity leads to drive their nominated activities. This includes liaising with collaborators, developing and implementing the activities' project plan, and sourcing available funding (where required) (Figure 2).

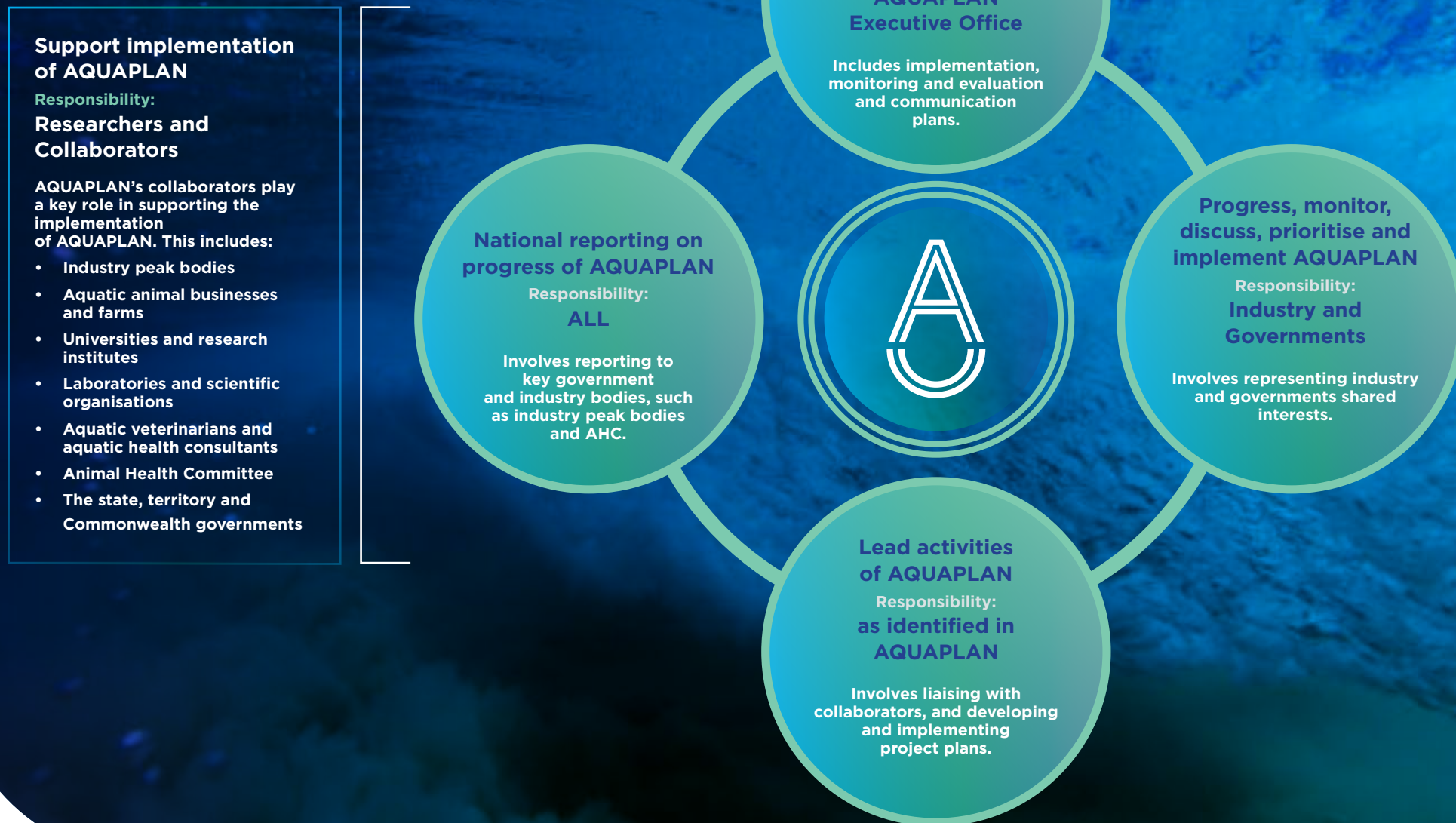
Implementation will require collaboration with others in the aquatic animal health community, including universities, laboratories, aquaculture and fisheries businesses, aquatic health consultants and veterinarians, the FRDC, and other scientific organisations (Figure 2). It will be the responsibility of everyone to champion the plan and to report on its progress (Figure 2).

All activities in AQUAPLAN will be collaborative, cultivate ownership and will aim to realise benefit for the aquatic animal health community.



**ALL ACTIVITIES IN AQUAPLAN WILL
BE COLLABORATIVE, CULTIVATE
OWNERSHIP AND WILL AIM TO
REALISE BENEFIT FOR THE AQUATIC
ANIMAL HEALTH COMMUNITY**

Figure 2 **AQUAPLAN roles and responsibilities**



CONCLUSION

The world's aquatic environments provide extraordinary values – for food production, human nutrition, commerce and as an important haven for biodiversity. These values have been recognised by the United Nations in the sustainable development goals⁶ and by the High Level Panel for a Sustainable Ocean Economy⁷.

Aquatic environments are increasingly important for human nutrition and we are witnessing a global revolution in how aquatic animals are produced and consumed. Aquaculture, as the fastest growing food production sector is driving this revolution. It now produces more food for human consumption than capture fisheries and has contributed to a doubling of per capita seafood consumption since the 1950s (despite a doubling of human population over the same period)⁸. New aquatic animal species are also being domesticated at a rate about 100 times faster than terrestrial plants or animals at any time in human history⁹.

In Australia, the value of aquatic environments is substantial. They are critical to economic, cultural, recreational and environmental values (see 'drivers' on page 10). In 2019-2020, the gross value of aquaculture production in Australia exceeded capture fisheries for the first time. While fisheries will continue to supply high quality and sustainable seafood, it is Australia's aquaculture industry where production growth is expected.

Industry and the Australian Government share an ambitious goal to expand the value of Australia's agricultural production, including seafood, to \$100 billion by 2030¹⁰. Forecasts show that Australia's seafood industry will be one of the fastest growing sectors over that time and the forecasts are backed by substantial private investment in significant new aquaculture projects, expansion of existing enterprises and exciting prospects for production of new species. The Australian Government has also invested significantly in the 2030 goal across 7 themes, including trade and biosecurity¹¹.

Despite the exciting prospects for aquatic animal industries there are significant threats to aquatic environments and the health of aquatic animal populations. The United Nations Environment Program describes the triple planetary crisis – climate change, biodiversity loss, and pollution.

These challenges apply to aquatic environments and potentially exacerbate the impact of aquatic animal diseases.

If investment is to be maximised, growth sustained, livelihoods and cultural and environmental assets protected – the health of aquatic animals must be managed effectively at national, regional and enterprise levels. Not only is disease one of the greatest threats to aquatic animal populations, but healthy and thriving animals provide the best and most sustainable outcomes for all. This is the role of AQUAPLAN.

The vision of AQUAPLAN has never been more important – to improve the productivity and profitability of aquatic animal industries and protect aquatic environments.

THE VISION OF AQUAPLAN HAS NEVER BEEN MORE IMPORTANT – TO IMPROVE THE PRODUCTIVITY AND PROFITABILITY OF AQUATIC ANIMAL INDUSTRIES AND PROTECT AQUATIC ENVIRONMENTS

APPENDIX A

Organisations involved in the development of AQUAPLAN 2022-2027

INDUSTRY

- Australian Abalone Growers Association
- Australian Barramundi Farmers Association
- Australian Prawn Farmers Association
- Australian Southern Bluefin Tuna Industry Association
- Clean Seas Kingfish
- National Aquaculture Council*
- Oysters Australia
- Pearl Producers Australia
- Pet Producers Industry Association (ornamental fish industry)
- Southern Rock Lobster Limited
- Tasmanian Salmonid Growers Association

NATIONAL

- Animal Health Australia
- Commonwealth, Department of Agriculture, Fisheries and Forestry
- CSIRO Australian Centre for Disease Preparedness
- Fisheries Research and Development Corporation
- Northern Australia aquaculture institutional industry situational analysis project
- Sub-Committee on Aquatic Animal Health

JURISDICTIONS

- New South Wales, Department of Primary Industries
- Northern Territory, Department of Industry, Tourism and Trade
- Queensland, Department of Agriculture and Fisheries
- South Australia, Department of Primary Industries and Regions
- Tasmania, Department of Natural Resources and Environment
- Victoria, Department of Jobs, Precincts and Regions
- Western Australia, Department of Primary Industries and Regional Development.

* Note that during the development process, NAC was disbanded, and national aquaculture industry representation transitioned to Seafood Industry Australia's Aquaculture Advisory Committee

APPENDIX B

Process to develop AQUAPLAN 2022-2027

AQUAPLAN 2022-2027 was developed collaboratively by governments, aquaculture and fishing industries and other organisations. Industries and governments worked together at every stage of the process to develop the plan.

Development of the plan was guided by a steering group (with equal industry and government membership) that was supported by a secretariat provided by DAFF. The following graphic shows the key steps to develop the plan commencing from late 2019 to mid-2022.



APPENDIX C

Linkages

Australia's arrangements for aquatic animal health management are integrated with those of the WOA and national biosecurity, animal welfare, emergency disease response and research and development initiatives and arrangements. AQUAPLAN 2022-2027 was developed in consideration of other national strategic plans and agreements, including:

- the **Intergovernmental Agreement on Biosecurity (IGAB)** – an agreement that aims to strengthen partnerships between the Australian, state and territory governments and improve the national biosecurity system by identifying roles and responsibilities and outlining collaboration priorities.
- the **Commonwealth Biosecurity 2030 Roadmap** – provides a clear and practical roadmap to direct and guide projects, initiatives and investments associated with the Australian Government's biosecurity remit. Annual action plans will be developed to guide its delivery and ensure transparency.
- the **the National Biosecurity Strategy (2022-2032)** – will align current and future efforts of key stakeholders across the system in a common purpose, enhancing the long-held commitment to shared responsibility with a clear and transparent commitment to action and investment.
- the **National Aquaculture Strategy (2017-2027)** (NAS) – a 10 year strategy that outlines the industry-government actions required to double the current value of Australia's aquaculture industry to \$2 billion a year by 2027.
- the **National Antimicrobial Resistance Strategy (2020 and Beyond)** (2020 AMR Strategy) – builds on Australia's first national AMR strategy 2015-2019. The 2020 strategy sets a 20 year vision to protect the health of humans, animals and the environment, and aligns with the **the World Health Organisation's Global action plan on AMR**.
- the **Fisheries Research and Development Corporation's (FRDC) R&D Plan (2020-2025)** – this strategy conveys a shared vision for the future, the outcomes required to pursue that vision, and the enabling strategies to achieve them.
- the **Strategic approach to the management of ornamental fish in Australia** (published 2006) – provides recommendations for the management and regulation of the ornamental fish trade in Australia.
- the **National Environmental Biosecurity Response Agreement (NEBRA)** – this agreement sets out emergency response arrangements, including cost-sharing arrangements, for biosecurity incidents that primarily impact the environment and/or social amenity and where the response is for the public good. It applies to aquatic animal diseases if they meet the eligibility criteria.

AQUAPLAN 2022-2027 was also developed in consideration of the FRDC's [Aquatic Animal Health and Biosecurity Coordination Program](#) and the common sector-specific needs reflected in:

- the Australian Abalone Growers' Association Research, Development and Extension (RD&E) Plan 2020-2025 (available on the [FRDC's website](#))
- the Australian Barramundi Farmers' Association Strategic Plan 2020-2025
- the Australian Prawn Farmers' Association Strategic Plan 2020-2025
- the Australian Southern Bluefin Tuna Industry Association Research, Development and Extension (RD&E) Plan 2020-2025 (available on the [FRDC's website](#))
- the Oysters Australia Strategic Plan 2020-2025
- the Southern Rock Lobster Limited Strategy 2022 (available on the [FRDC's website](#))
- the Tasmanian Salmonid Growers' Association strategic areas of RD&E.

For more information on the FRDC's industry partnership agreements (IPAs) and current sector plans refer to the [FRDC's website](#).

Although not directly linked, AQUAPLAN 2022-2027 will complement the activities of the first national strategic plan for terrestrial animal health, Animalplan 2022-2027. Animalplan provides a vision for a better national animal health system by 2025 and identifies activities to be delivered over the next five years for the benefit of the terrestrial animal sector.



**THE INDUSTRY AND GOVERNMENT
PARTNERSHIPS THAT ARE
FUNDAMENTAL TO ACHIEVING THE
COMMON GOALS OF THE PLAN HAVE
BEEN GIVEN PARTICULAR EMPHASIS
IN AQUAPLAN 2022-2027**

APPENDIX D

Acronyms and abbreviations

Acronym or abbreviation	Meaning
AHC	Animal Health Committee
AMR	Antimicrobial resistance
APVMA	Australian Pesticides and Veterinary Medicines Authority
AQUAPLAN	Australia's National Strategic Plan for Aquatic Animal Health
AQUAVETPLAN	Australia's Aquatic Veterinary Emergency plan
DAFF	Australian Government Department of Agriculture, Fisheries and Forestry
EIC	Environment and Invasives Committee
FRDC	Fisheries Research and Development Corporation
FRDC AAHBCP	Fisheries Research and Development Corporation Aquatic Animal Health and Biosecurity Coordination Program
NAC	National Aquaculture Council
WOAH	World Organisation for Animal Health
SCAAH	Sub-Committee on Aquatic Animal Health
SCAHLs	Sub-Committee on Animal Health Laboratory Standards
SIA	Seafood Industry Australia

REFERENCES

- 1 Food Innovation Australia Limited, 2019, Protein Market: Size of the prize analysis for Australia. <https://workdrive.zohopublic.com.au/external/4xHhCwTPeA-7DLi0N>.
- 2 Steven AH, Dylewski M and Curtotti R, 2021, Australian fisheries and aquaculture statistics 2020, Fisheries Research and Development Corporation project 2020-124, ABARES, Canberra, April. CC BY 4.0. . <https://doi.org/10.25814/0wzy-re76>.
- 3 Australian Fisheries and Aquaculture Industry 2017/18: Economic Contributions Estimates Report. FRDC project 2017-210, October 2019.
- 4 Austrade, 2015, Aquaculture and fisheries industry capability report, Australian Trade Commission, Sydney, January. CC BY 4.0.
- 5 Henry GW, Lyle JM, 2003, The National Recreational and Indigenous Fishing Survey. FRDC project no. 99/158. Tasmanian Aquaculture & Fisheries Institute, University of Tasmania, Tasmania. fish.gov.au/reports/Documents/Henry_and_Lyle_2003.pdf.
- 6 United Nations, 2021, The 17 Goals: UN Sustainable Development Goals, United Nations Department of Economic and Social Affairs, <https://sdgs.un.org/goals>.
- 7 World Resources Institute, 2021, High Level Panel for a Sustainable Ocean Economy, <https://www.oceanpanel.org>
- 8 FAO. 2020. The State of World Fisheries and Aquaculture 2020. Rome.
- 9 Duarte et al., 2007, Rapid domestication of marine species, Science, 316: 382-383.
- 10 National Farmers Federation, 2018, 2030 Roadmap, <https://nff.org.au/policies/roadmap>
- 11 Australian Government Department of Agriculture, Water and the Environment, 2022, Delivering Ag2030, <https://www.awe.gov.au/agriculture-land/farm-food-drought/ag2030>

Photos used in this plan were kindly provided by the Australian Barramundi Farmers Association, the Australian Prawn Farmers Association, Craig Mostyn Jade Tiger Abalone, Huon Aquaculture Group Limited, Ornatas, the South Australian Oyster Growers Association, Katie Scutt, the Australian Government Department of Agriculture, Fisheries and Forestry and shutterstock.



For more information:

Visit **AQUAPLAN – Australia's national strategic plan for aquatic animal health** using the hyperlink or QR code provided:

www.agriculture.gov.au/agriculture-land/animal/aquatic/aquaplan

How to be involved:

Visit the links provided above for up-to-date information on:

- the progress of AQUAPLAN and its activities, including progress reports
- the implementation of AQUAPLAN
- the AQUAPLAN webinar series

Or contact the Aquatic Pest and Health Policy section at: **aquaplan@agriculture.gov.au**

