Australian Government
Department of Agriculture, Fisheries and Forestry

INTERIM INSPECTOR - GENERAL OF BIOSECURITY

AUDIT REPORT

An examination of the effectiveness of Department of Agriculture, Fisheries and Forestry controls to manage biosecurity risks in the importation of freshwater and marine ornamental fish

INTERIM INSPECTOR - GENERAL OF BIOSECURITY

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Note: For the public release of this report personal information has been removed in accordance with the *Privacy Act 1998*.

Glossary

AIMS	DAFF's database system for retaining records of quarantine entries for goods entering Australia. AIMS provides quarantine management of imported goods (including food) and non-commodity items, records DAFF's decision-making process and communicates this information to the owner/agent/importer.
Beale review	An independent review of Australia's quarantine and biosecurity arrangements by a panel chaired by Mr Roger Beale AO. The report *One biosecurity: a working partnership* was released by the Australian Government on 18 December 2008.
biosecurity risk	Potential harm to the economy, environment and human health from the negative impacts associated with entry, establishment or spread of exotic pests (including weeds) and diseases. Also referred to as quarantine risk.
cargo terminal operator (CTO)	Cargo terminal areas where cargo can be handled prior to export or after arrival.
cichlids	Fish from the family *Cichlidae* in the order *Perciformes.* Cichlids are members of the group *Labroidei*. This family is both large and diverse and includes many familiar aquarium fish, including angelfish, oscars, and discus.
competent authority (CA)	The national veterinary sciences services or other authority of a country having the responsibility for aquatic animal health measures within the country and for export certification.
DAFF	Department of Agriculture, Fisheries and Forestry
eLodgement	A sub-system of the ICON database that allows import permit applicants to lodge and pay for an import permit application online.
FishBase	An online database of information about fish species, specifically finfish. FishBase provides comprehensive species data, including information on taxonomy, geographical distribution, biometrics and morphology, behaviour and habitats, ecology and population dynamics as well as reproductive, metabolic and genetic data.
freshwater fish	Fish inhabiting water with less than 4 parts per thousand dissolved salts.

gouramis	All gourami species are tropical fish belonging to the *Labyrinth* family, and they live exclusively in fresh water. This family includes climbing perch and the Betta/fighting fish.
import risk analysis (IRA)	This process enables the Australian Government to formally consider risks that could be associated with proposals to import new products into Australia. IRAs are conducted by DAFF.
Integrated Cargo System (ICS)	A software application used for all import and export reporting and processing procedures. The only method of electronically reporting the legitimate movement of goods across Australia's borders to the Australian Customs and Border Protection Service.
iridovirus	A family of viruses that contain DNA as their genetic material. Iridoviruses have been found in a wide variety of fish, including both freshwater and saltwater species.
marine fish	Fish inhabiting the sea or marine waters.
Minimum Documentation Policy	The policy defines the minimum requirements that must be met for all documents presented to DAFF or industry to support risk assessment of imported cargo and/or packaging, whether for quarantine or imported foods purposes.
National Appointment System	A single electronic appointment and scheduling booking system for DAFF officers undertaking inspection activities.
poeciliids	A family of freshwater fish that includes guppies, mollies, platies, and swordtails. Widely kept as ornamental fish.
pre-border controls	Pre-border activities seek to prevent biosecurity risks reaching Australia's border. Specific pre-border activities include cooperation in multilateral forums, import risk analyses, intelligence gathering, and quarantine and audit activities.
quarantine approved premises	A facility that is approved by DAFF for the performance of quarantine under section 46A of the *Quarantine Act 1908.* For the purpose of this document, the term 'Quarantine Approved Premises' is the area specifically meeting the necessary standards for the Class of QAP.
risk management	The identification, documentation and implementation of the measures that can be applied to reduce the risks and consequences (OIE International Animal Health Code).
standard operating procedures (SOP)	A document that outlines procedures for conducting significant operational activities, taking into account the management of risk, legislation and Occupational Health and Safety requirements.

tank record chart	A documentary record of the health status of live ornamental fish during post-arrival quarantine at their quarantine approved premises.
work instruction (WI)	A short, easy-to-understand document that complements a SOP and provides definitive guidance for performing specific operational tasks.

Executive summary

The Interim Inspector - General of Biosecurity (IIGB), as part of his audit work plan, has examined the effectiveness of controls used by the Department of Agriculture, Fisheries and Forestry (DAFF) to manage biosecurity risks associated with the importation of freshwater and marine ornamental fish.

In 2009–10 about 16 million ornamental fish, valued at around $5 million, were imported into Australia. Although 26 countries are approved to export freshwater and marine ornamental fish to Australia, only six countries account for 99 per cent of trade in this commodity.

The *Environment Protection and Biodiversity Conservation Act 1999* and the *Quarantine Act 1908* govern the importation of live animals and plants into Australia. Key risk management measures to minimise biosecurity risks reaching Australia are implemented by DAFF under the *Quarantine Act 1908* and subordinate legislation, including the Quarantine Proclamation 1998.

Audit findings and recommendations are based on IIGB investigations involving:

- observations from three inspection visits during the period 29 November to 9 December 2011
- examination of 25 cases studies and of DAFF's pre-border and border operations
- discussions with DAFF management and regional officers responsible for biosecurity, and with operators of quarantine approved premises (QAP).

The supporting data analysis and audit outcomes and inspection visits are outlined in the body of this report. The IIGB also conducted interviews with officers from DAFF's Animal Biosecurity and Animal Import Operations Divisions in Canberra and reviewed relevant documentation.

Key findings

Ornamental fish have long been considered a high risk import commodity due to the potential for introduction and establishment of exotic diseases of aquatic animals. Certain imported species of fish also have the potential to impact negatively on Australian ecosystems. The management of these risks during importation poses challenges, such as the identification of species and detection and exclusion of diseased fish. In addition, the science and technologies available to manage disease risks are less well developed and comprehensive in the area of fish health than those in the terrestrial animal health sphere.

Australia's current risk management measures for the importation of ornamental fish are based on the *Import risk analysis on live ornamental finfish* (IRA) (DAFF 1999a). For example, quarantine risk management measures are in place for all imported cichlids (family *Cichlidae*) and gouramis (subfamily *Luciocephalinae* of the family

Osphronemidae) due to the biosecurity risks associated with iridoviruses. Iridoviruses, which affect freshwater and saltwater species, have been associated with serious disease and mortality in fish.

The IIGB finds the systems DAFF currently has in place to detect and mitigate biosecurity risks associated with imported freshwater and marine ornamental fish could be strengthened in four key areas by:

- restricting exporting countries to those that Australia has assessed and endorsed as having biosecurity controls and standards that fully meet Australia's import requirements
- developing appropriate training packages for DAFF inspection officers
- enhancing approval process for operating post-arrival quarantine facilities
- improving data collection, monitoring and documentation.

Pre-border

The existing pre-border baseline controls for managing the biosecurity risks associated with imported freshwater and marine ornamental fish include:

- approval and monitoring of each approved country and its official competent authority (CA) by DAFF
- requirement for freedom from specified diseases for export premises
- pre-export quarantine periods
- health certification by the CA of the exporting country.

Unlike the approval for certain terrestrial animal imports, Australia's process for approving export of ornamental fish to Australia does not require the exporting country to be free from specific diseases. At the time of this review, the list of approved countries has not been updated since the 1999 IRA recommended extending approval for countries that had been exporting ornamental fish to Australia prior to 1999.

A key component in the acceptance of a country to export to Australia is approval of its CA. This involves a detailed evaluation by DAFF of the CA's biosecurity services and its performance. The CA is usually the national veterinary service or other relevant authority. This approval process is intended to provide DAFF with confidence that the CA is capable of providing independent, reliable and valid certification that exported live fish meet Australia's import permit requirements.

One of the recommendations from the 1999 IRA was that there would be an evaluation of the performance of the CA in each of the approved countries. The IIGB noted that competing priorities for DAFF resources have delayed implementation of

this evaluation process. It was not until May 2009 that DAFF commenced a structured program to evaluate CAs.

The IIGB found the evaluations conducted by DAFF to date have been comprehensive and suitably rigorous. However, ongoing monitoring of the standards and systems used by each CA remains a challenge.

Biosecurity risk management needs to be enhanced at the pre-border stages. This would require in situ inspections by experienced DAFF staff of fish health control systems and standards in exporting countries. This has resource implications especially in view of competing priorities across DAFF.

Verification of compliance with Australia's import requirements can be monitored by inspection of imported fish consignments and accompanying documentation.

Most countries on the approved country list have not had their CA assessed against current DAFF processes. Although the countries that have not been assessed are not major suppliers of ornamental fish to Australia, this does not necessarily mean that they pose a lower biosecurity risk. DAFF's ability to monitor fish disease risks are less than ideal in cases that involve developing countries with scant histories of reporting fish health, disease outbreaks or statuses. Although DAFF has implemented an improved, more objective system for evaluating countries, it is likely that many yet to be evaluated will have difficulty meeting the standard. The IIGB is concerned that so many unassessed countries remain on the current list of approved exporters of ornamental fish to Australia.

The IIGB found that approval and monitoring of approved countries and CAs could be enhanced by coordinating data/intelligence collection and analysis between those sections of DAFF responsible for managing importation of ornamental fish.

The scope of this audit excluded examination of the IRA for ornamental fish or policy relating to their importation. However, the IIGB considers that the provisional final IRA on imported freshwater ornamental fish has revealed significant risk management challenges and serious deficiencies in the integrity of the current system of import controls. The IIGB recommends the process of consideration of the IRA's findings be expedited as soon as possible.

Over the last two years DAFF has adopted a risk return approach to biosecurity risk management. This approach places greater biosecurity emphasis on risk management processes in countries exporting ornamental fish to Australia than on post-entry quarantine of fish in Australia. The IIGB noted that in the future DAFF is planning to increase the risk management emphasis on pre-border arrangements with a corresponding reduction in emphasis on post-arrival quarantine holding periods.

With this change in policy and procedural emphasis DAFF will have to ensure that the approval, verification and auditing of exporting country systems can be sustained to adequate levels, especially from a resourcing viewpoint.

In addition to the approval and monitoring processes of CAs, there is a need for DAFF controls at the exporting country level to be strengthened. This could be achieved by developing and maintaining lists of approved exporters (by country); and establishing systems for closely monitoring supplier performance using results from arrival inspections and documentation, and disease testing undertaken.

Border

Biosecurity risk management controls exercised by DAFF at the border include:

- verification procedures for documentation accompanying import consignments
- inspection on arrival to confirm species identification and to assess observable health signs of the fish
- use of mandatory quarantine periods with further inspections to be undertaken at a quarantine approved premises (QAP).

Standardisation of these controls is assisted by documented standard operating procedures (SOP) and work instructions (WI) for DAFF officers. Standardisation is enhanced by verification through DAFF's audit procedures.

Inspection of consignments relies on DAFF fish inspectors having experience and skills, including the ability to identify permitted and non-permitted fish species and/or genera. Although documented procedures and reference material is available to inspectors, controls rely on their ability to differentiate between permitted and non-permitted species in a bag of 100 to 300 fish. While this audit was underway a consignment of a non-permitted fish species was mistakenly released. The IIGB also noted differences in the physical standards of inspection facilities across the regions that may affect consistency and effectiveness of inspection processes.

The IIGB's assessment did not identify any weaknesses in DAFF's communication strategies. Information and data are communicated continuously within and across regions, to staff and industry. Specific examples are:

- internally—through a SharePoint site/discussion forum and frequent teleconferences between DAFF regions
- externally—through ICON, DAFF's import conditions management system, which updates industry on requirements and conditions relating to the importation of ornamental fish into Australia.

Release of non-permitted species

During the documentation review, the IIGB found that a consignment of 225 *Acrobrycon ipanquianus* was listed on an invoice/packing list. This non-permitted fish species was not identified during the initial documentation assessment, or at the Cargo Terminal Operator (CTO) inspection, or at subsequent

QAP inspections. There was no evidence to suggest that appropriate action was taken—that is, seizure of the non-permitted species. It appears that the species was subsequently mistakenly released.

Training and skills development

No formal training packages are in place dealing with inspection and clearance procedures for the importation of ornamental fish. Most training undertaken by DAFF officers occurs on the job, when new fish inspectors accompany more experienced staff during initial inspection activities. Occasional staff absences and reliance on the corporate expertise of a small group of key staff adds to the pressures placed on building and maintaining an experienced inspectorial team. DAFF acknowledges the importance of experienced and knowledgeable officers, especially given the difficulties identifying ornamental fish.

Inspections at the border and quarantine approved premises

In observing processes for conducting inspections at the border and QAPs, the IIGB noted:

- Differences in the physical standards of inspection facilities affect the inspection process and contribute to variation in inspection methods, in some cases limiting the effectiveness of inspections.
- Detecting and controlling the presence of disease relies on observation and the application of arbitrary standards of tolerance of fish morbidity and mortality levels during the period of post-arrival quarantine. The low intrinsic commercial value of most imported fish and relatively high cost of diagnostic testing in laboratories contribute to the low use of objective disease testing as a standard biosecurity risk management requirement during quarantine at a QAP. Existing QAP procedures are a significant cost consideration to importers.
- The effectiveness of inspection for signs of disease, presence of non-permitted species or of other quarantine risk materials appeared to be enhanced by systems that allow easier handling of bags containing fish and that provide better illumination.

Documentation

There appears to be a lack of consistency about the type of information DAFF requires on a consignment file. In most cases there was limited documented evidence to substantiate decisions regarding consignments in a QAP—that is, whether fish were released from quarantine. More specifically, tank records are not kept on DAFF files, but are held by QAP operators. The information kept on tank records informs the decision to release or destroy a fish consignment. QAP operators are required to keep consignment documentation for a maximum of two years. If DAFF retained this information, rather than QAP operators, future reviews/scientific analysis of ornamental fish mortalities would be better served.

Another inconsistency is in the interpretation of fields in the Audit of Health Certificate for Ornamental Fish forms; for example, in the section asking for 'number of tails on invoice/packing list', some DAFF inspectors record the numbers entered on the packing list, while others recorded the numbers submitted on the invoice.

DAFF approval and monitoring of quarantine approved premises

The IIGB noted that the integrity of the current import control system relies heavily on QAP management to comply with import conditions. While this audit showed that DAFF officers generally operate with procedural correctness, the integrity of biosecurity for imported fish throughout most of the quarantine period is dependent upon the operational diligence of private sector QAP operators.

The IIGB noted that DAFF's investigation and review processes have identified significant deficiencies in the reliance of the current system on the trustworthiness of operations of privately owned and operated QAPs. DAFF investigations have found instances of illicit removal of fish from quarantine and importation of non-permitted species.

Given the reliance on trust and on the integrity of private QAP owners, the IIGB considers a reasonable case exists for developing legislative requirements for DAFF to exercise 'fit and proper person' controls in the QAP approval process.

When feasible, DAFF fish inspectors accompany officers during routine monitoring audits of QAPs. The IIGB noted that this combined focus enables a useful across-the-board assessment of a QAP's performance, in addition to the evaluation of fish quarantine operations and premises standards.

In summary, the current system of pre-border and border controls for imported ornamental fish cannot be described as capable of ensuring a high level of protection against entry of new or emerging fish diseases. Specific disease risk management is applied to only a few diseases in either pre-border or border stages. That many countries approved to export ornamental fish to Australia have not undergone detailed evaluation of their CAs is of concern.

Current risk management measures applying to border stages of importation rely heavily on isolation of eligible fish in privately-operated QAPs and general observational inspection and assessment of import consignments.

DAFF inspection officers face inherent challenges when deciding when fish should be released from quarantine. Mortality data recorded on tank records and patterns of observed illness form the basis for decision-making on the health of each consignment and whether it can be released from quarantine. Laboratory testing is rarely used mostly for cost and logistical reasons. These limitations point to a weakness of the system to manage risks of emerging and sub-clinical diseases.

Additional limitations at the border are the reliance on operator integrity in QAPs and an inability to confidently track imported fish through the system.

The IIGB found that the current system associated with the importation of freshwater and marine ornamental fish is operated by dedicated and skilled DAFF officers who recognise the limitations of the biosecurity risk management it delivers.

Recommendations

Number	Recommendations
1	That future importation of ornamental fish be permitted only from exporting countries that, after evaluation by DAFF, are found to meet contemporary country and competent authority standards.
2	That DAFF establish and maintain a list of approved suppliers/exporters to facilitate monitoring of compliance and to initiate timely remedial action in response to detected noncompliance with Australian import requirements.
3	That DAFF put in place a system for gathering and analysing data on seizure and noncompliance of live imported fish consignments to enable timely monitoring of performance of each approved country's competent authority and exporters against Australian import requirements.
4	That the Director of Animal and Plant Quarantine respond as soon as possible to the recommendations of the July 2010 provisional final IRA with respect to biosecurity risk management for iridoviruses.
5	That DAFF develop a formal training package for fish inspectors. This should include monitoring of the ongoing competency of inspectors.
6	That DAFF pursue development of legislative requirements that enable fit and proper person considerations in the QAP application and approval process.

The IIGB considers that improvements to documentation procedures would assist the effectiveness of border inspections. Suggested improvements are:

- developing a minimum recording requirement for documents and information that must be kept on consignment files, including electronic documentation
- establishing procedures to ensure tank record data are retained and available for analysis for a minimum of five years
- amending the Audit of Health Certificate for Ornamental Fish forms to ensure consistency of information recorded on the form
- requiring importers to provide an electronic copy of the consignment invoice/packing list, as set out in the import conditions, and list scientific names alphabetically on the packing list.

The IIGB also identified a number of better practices that could be applied across all the regions. These relate to:

- inclusion of a clearance checklist on the cover of a DAFF hard copy consignment file

- verification of species names against the lists of permitted species (freshwater and marine) through improved access to electronic data matching tools
- development, in all DAFF regions, of imported fish inspection facilities of a similar standard to those currently used at the South East Region office in Melbourne.

[signed]

Dr Kevin Dunn
Interim Inspector - General of Biosecurity

Conduct of the audit

Role of the IIGB

As part of its preliminary response to the 2008 review of Australia's quarantine and biosecurity arrangements (the Beale Review), the Australian Government agreed to establish a statutory office of Inspector - General of Biosecurity. The role would be established under new biosecurity legislation currently being developed. In advance of this enabling legislation, interim administrative arrangements are in place.

On 1 July 2009 the government appointed an Interim Inspector - General of Biosecurity (IIGB). The scope of the role covers those systems and their risk management measures for which DAFF is responsible.

The role also includes biosecurity measures relating to human health and environmental responsibilities undertaken by DAFF on behalf of the Department of Health and Ageing, the Department of Sustainability, Environment, Water, Population and Communities. A 2011 memorandum of understanding between DAFF and the Australian Customs and Border Protection Service supports a common approach to border operations.

The IIGB works with DAFF, relevant Australian Government departments, and competent authorities/companies involved in the biosecurity continuum.

The IIGB is independent from the organisational and functional arrangements of the Biosecurity Divisions within DAFF and reports to the Minister for Agriculture, Fisheries and Forestry. The IIGB makes key findings and recommendations publicly available unless they contain confidential information. The department provides administrative support to the IIGB through the IIGB Support unit.

Audit objective

The objective of this audit was to examine the effectiveness of DAFF's pre-border and border controls for managing biosecurity risks associated with imported freshwater and marine ornamental fish.

Scope

The scope of the audit was limited to DAFF's risk identification processes and the controls in place to manage identified biosecurity risks for imported ornamental fish and the water in which the fish are transported, including:

- identification of requirements for importing ornamental fish and the adequacy of these requirements in managing biosecurity risks
- communications strategies/activities for conveying biosecurity risks associated with importing ornamental fish

- assessment of the systems in place to ensure compliance with import conditions.

Out of scope

The audit did not examine:

- rock or plant material transported with ornamental fish
- import risk analysis for ornamental fish or policy for the importation of ornamental fish
- commercial considerations and trade illegality, including those areas for which Australian Customs and Border Protection Service is directly responsible
- post-border surveillance activities undertaken by a state or territory authority
- post-border natural resource management impacts.

Methodology

The IIGB's approach in undertaking this audit included:

- reviewing literature as it relates to biosecurity risk for imported ornamental fish
- reviewing relevant DAFF documentation and data (standard operating procedures, work instructions, permits, health certificates)
- reviewing DAFF's approval of overseas CAs and verification processes
- reviewing DAFF's approval of QAPs and verification processes
- observing procedures and operations of DAFF and QAPs
- examining documentation associated with 25 selected case studies covering a period 2010-11.

To inform his report, the IIGB engaged a consultant to examine and report on the border control aspects of import permit systems, inspections and verification activities relating to the import into Australia of ornamental fish.

The IIGB examined DAFF's systems for approving and monitoring of QAPs and pre-border controls relating to approval and review of CAs and approved countries.

The IIGB selected QAPs from three DAFF regions—North East, South East and South West—to audit a sample of approval and monitoring processes for imported ornamental fish (Map 1). Sample consignments were selected to proportionately represent the volume and type of imports for 2010–11 across the three regions. The selection was made using risk profiling that considered aspects such as total number of consignments received in a region during a 12-month period and the number of a particular species imported in a particular region.

The following rationale was used to select the three regions:

- The North East Region, with offices in Brisbane, Gladstone, Mackay and Townsville, has a more tropical climate than the other two regions. It also receives, through Brisbane Airport, the highest number of imported goldfish. Goldfish are the only ornamental fish that require a 21-day quarantine period. The baseline quarantine period for most freshwater and marine species is 7 days, or 14 days for gouramis and cichlids.
- The South East Region, with offices in Hobart and Melbourne, received a significant number of ornamental fish in 2010–11.
- The South West Region, with offices in Adelaide and Perth, had the lowest number of consignments of imported ornamental fish in 2010–11 and consequently, conducted fewer ornamental fish inspections.

This fieldwork included an examination, where possible, of import documentation relating to the 25 selected consignments received at the border and quarantine inspections at the relevant QAP. Visits to DAFF regional offices and QAPs occurred from 29 November to 9 December 2011. Appendix A contains details on sample selection.

Map 1 Biosecurity regional boundaries

Northern includes Torres Strait and south to Cardwell, Northern Territory, west to Broome and the Indian Ocean territories.

South West from south of Broome, includes South Australia (including Broken Hill – excluding Riverland).

South East includes Tasmania, Riverland and extends north to Riverina and east coast NSW to Eden.

Central East includes NSW with the exception of Eden and areas south, Riverina and far north coast.

North East extends from Cardwell to far north coast NSW, south to Grafton.

Source: DAFF

Issues or observations outside the scope of the audit

Findings and recommendations made in this audit are in accordance with the scope of the audit. Other issues or concerns outside scope—but observed and noted by the IIGB during this audit could be reflected in the IIGB's audit work program and/or provided by the IIGB's in correspondence to the Minister for Agriculture, Fisheries and Forestry and DAFF.

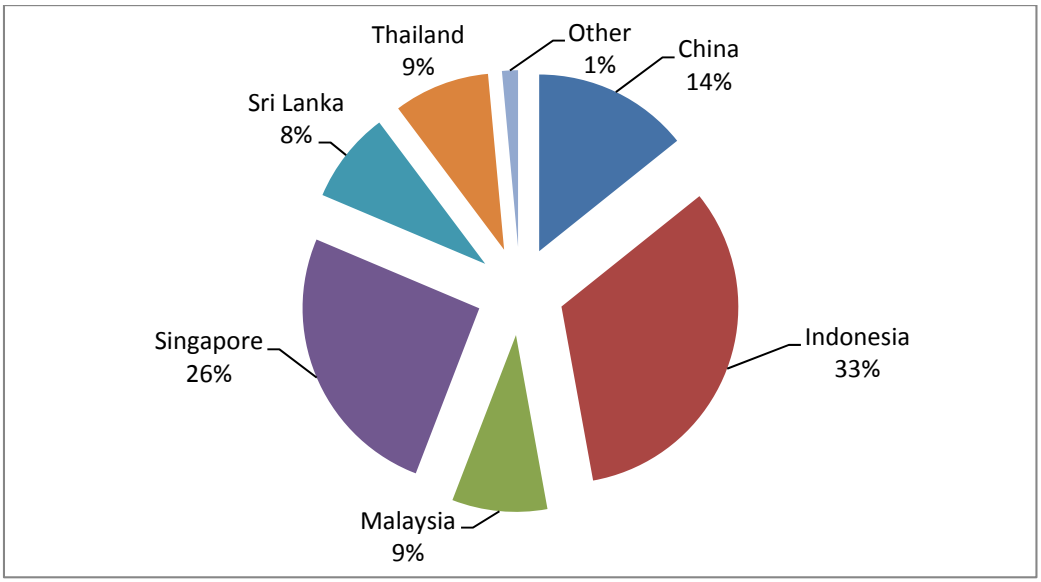
Background and context

In 2009–10 about 16 million ornamental fish (ABS were imported into Australia (Figure A). The largest supplier was Indonesia (33 per cent), followed by Singapore

(26 per cent) and China (14 per cent). These imports were valued at around $5 million (ABARES 2010–11).

Six major countries supply ornamental fish to Australia. Of the 26 countries permitted to export ornamental fish to this country, 22 have approval to export freshwater and marine species, and four are approved to export marine species only. There are usually around 46 individual importers, mainly in Sydney and Melbourne. Some importers have both freshwater and marine permits and others only one type of import permit. In 2012 there are 37 import permits for freshwater ornamental fish and 21 import permits for ornamental marine fish.

Figure A Major suppliers of freshwater and marine ornamental fish to Australia, 2009–10



Sources: ABARES 2011; Australian Bureau of Statistics

Based on DAFF consignment data for 2010–11, freshwater fish species made up 98 per cent of the total number of individual imported ornamental fish. Of the freshwater species, goldfish comprised 14 per cent.

The ornamental aquarium fish trade in Australia is estimated to be worth approximately $350 million annually (BRS 2010). The ornamental fish industry encompasses commercial fish breeding facilities, wholesale traders and importers, retail outlets and the hobby sector, and includes accessories such as food, medication, tanks and other allied products.

Australia's biosecurity risk management system for imported ornamental fish is managed and delivered by various areas of DAFF.

Like other animals, imported ornamental fish can carry and transmit infectious diseases to susceptible host fish when favourable epidemiological conditions exist. Additionally, certain species pose potential ecological threats if they become established in new aquatic habitats.

These risks occur because of the possibility of:

- importation and release of non-permitted species
- release of imported permitted species carrying transmissible disease agents that remain undetected during the quarantine control period.

Introduced foreign diseases could deleteriously affect Australia's wild fisheries, waterways and aquaculture industries if infected fish or pathogen-contaminated water are released from aquariums into the environment.

For example, some imported species are known to be capable of carrying gourami iridovirus and related viruses. Apart from seriously affecting the health of gouramis, the virus can infect and kill native Murray cod. The 1999 IRA considered several species of gouramis and concluded that specific risk management measures were required for these species due to the biosecurity risk posed by iridoviruses.

Water in which fish are transported during shipment to Australia also poses biosecurity risks. In addition to possible pathogen contamination, water from the country of export may carry quarantine risk materials such as unapproved plants and pests, for example, foreign snail species.

Risk areas for DAFF

DAFF's risk management for the importation of ornamental fish faces significant challenges, including:

- The number of individual ornamental fish imported is vast by comparison with the number of other live animals imported into Australia.
- Most fish imports are consigned from six countries. However, there are 26 approved source countries, many of which are developing countries in which English is little-used. Presentation quality of documents, including health certificates, varies significantly.

In the case of two major exporting countries, the country in which the fish were bred is not the country from which the exported shipments were certified and consigned. In these circumstances, details of fish disease in the country of origin may be unknown.

- Disease surveillance systems in many countries of origin or export would be unlikely to achieve early detection and characterisation of a new or emergent fish disease.
- The challenge to ensure fish survive air cargo transport puts pressure on the timeliness of Australia's biosecurity inspection service at arrival.
- While the science of fish health has seen significant developments over the last ten years, the pathology, epidemiology and diagnosis of fish diseases remain less well researched and understood than in the terrestrial animal veterinary science area.

- In addition to fish disease risk management, DAFF controls for imported ornamental fish include a regulatory responsibility to prevent entry into Australia of species that are undesirable from an environmental or ecological perspective.

Risk management measures

DAFF's Biosecurity Animal Division manages biosecurity risks associated with entry of imported ornamental fish through:

- surveillance and understanding of global risks
- science-based import risk analysis to underpin import policy
- approval and auditing of overseas exporting countries and CAs
- setting pre-border and border controls for importation
- approval and auditing of QAPs.

DAFF's Biosecurity Animal Division manages the delivery of these activities through the Animal Import Operations Branch with the support of the Animal Biosecurity Branch, which provides scientific and technical advice, and the Border Compliance Division, which undertakes various border control activities.

DAFF's biosecurity import controls are set out via ICON, an open access database. ICON contains the import conditions that outline the risk management measures for more than 20 000 plant, animal, microbial, mineral and human products. ICON provides information to the public on import processes and conditions for commodities.

The import process is also supported by online and manual permit systems, and a range of forms. The systems are intended to support consistent application of risk management measures for specific commodities. The process also collects information about imports that can inform the setting of risk management measures.

DAFF has a set of work instructions and standard procedures that DAFF officers follow when assessing import permit applications, undertaking the entry management process, inspection and surveillance as well information dealing with risk management measures.

Legislative controls

Imports of live animals and plants into Australia are subject to regulation under the *Quarantine Act 1908* and *Environment Protection and Biodiversity Conservation Act 1999* (*EPBC Act 1999*).

The *Quarantine Act 1908* provides a range of powers in relation to animals, plants or other goods to prevent or control the introduction, establishment or spread of disease or pests that will or could cause significant damage to humans, animal plants,

environmental or economic activities. The key risk management measure to minimise biosecurity risks reaching Australia is contained in this Act through the power vested in the Governor-General of Australia to prohibit, by proclamation, the introduction or importation of certain goods into Australia.

The proclamation enables DAFF to assess the risk associated with the importation of ornamental fish and to then implement risk management measures to control the associated risks. These measures are managed by DAFF through the import permit process.

Regulation 70 of Quarantine Regulations 2000 sets out the requirement for an application for an import permit to import freshwater and marine ornamental fish. Section 70 of the Quarantine Proclamation 1998, section 34 in the Quarantine (Cocos Islands) Proclamation 2004 and the Quarantine (Christmas Island) Proclamation 2004 states how the power to grant a permit is to be exercised.

For the purpose of importing live ornamental fish, the consideration of the level of biosecurity risk stems from DAFF's Import risk analysis on live ornamental finfish (IRA) (1999a). IRA recommendations are reflected in the Animal quarantine policy memorandum 1999/77 (AQPM) (DAFF 1999b), which provides detailed conditions for the importation of freshwater and marine ornamental fish from all countries in accordance with the policies announced in AQPM 1999/2750 (DAFF 1999c).

The IIGB noted that another IRA process commenced in September 2008; however, until its finalisation, the existing import conditions remain in force. On 12 January 2012, in a DAFF Advice 2012/01 (DAFF 2012a), it was announced that the final consideration of the IRA process would be deferred until results of survey work were known (see Box 1 for more detail).

In September 2008 DAFF announced the formal commencement of an IRA to review Australia's freshwater ornamental finfish policy with respect to quarantine risks associated with gourami iridovirus (DAFF 2008). The 2008 IRA covers iridovirus risks associated with families of all freshwater ornamental fish species eligible for entry under the *EPBC Act 1999*. As such, the IRA is not restricted to species of gouramis and cichlids, but includes other families of freshwater ornamental fish on the permitted species list (such as *Poeciliidae* and *Cyprinidae)* that are associated with iridoviruses of potential quarantine concern.

Box 1 Progress of import risk assessment on freshwater ornamental fish, 2008–10

The import risk assessment process began in 2008. In July 2010 DAFF Biosecurity released a provisional final IRA report on freshwater ornamental fish. The process has not been finalised. The IRA has been undertaken in response to new information, including:

Research by the University of Sydney has indicated possible changes to the understanding of gourami iridovirus and other iridoviruses associated with freshwater ornamental fish.

Gourami iridovirus was detected in gouramis sourced from Sydney pet shops—it is not clear whether infected fish were imported.

A virus very similar to gourami iridovirus was linked to mortalities in locally farmed Murray cod in 2003.

Under experimental conditions, gouramis iridovirus infected Murray cod causing disease and mortalities.

Under experimental conditions, gouramis were able to harbour the virus for periods greater than 28 days without showing clinical signs of disease—longer than the current combined pre-export and post-arrival quarantine periods.

The IRA covers the gourami family, including dwarf gouramis, paradise fish and Siamese fighting fish, cichlids, including angelfish, oscars and poeciliids, including guppies, mollies, platys and swordtails. These are attractive, sought after ornamental fish comprising several species native to Asia and Africa.

DAFF's Director of Animal and Plant Quarantine has considered the final IRA report, but decided to await further work being undertaken by the University of Sydney before making a policy decision. This further work on megalocytivirus is due for completion in March 2013. The current import conditions for freshwater ornamental fish with respect to iridovirus remain in place.

Source: Edited extract from DAFF website 2010a

While this audit was underway changes were made to the import conditions for goldfish. On 1 September 2011 DAFF announced an amendment to the health certification requirements for the importation of goldfish (*Carassius auratus auratus*) (DAFF 2011a). Research found that Australia's aquatic animal health status with regard to goldfish haematopoietic necrosis virus had changed. This virus is now present in domestic goldfish populations in Australia. So the requirement for exporting countries to declare that goldfish intended for Australia are free from the disease was removed by DAFF from relevant import conditions.

The *EPBC Act 1999* establishes the List of Specimens taken to be Suitable for Live Import (Live Import List) and is administered by the Australian Government Department of Sustainability, Environment, Water, Population and Communities (SEWPaC). This Live Import List is based upon assessment of the environmental impact associated with the proposed live import species. This live import list consists of two parts: part one contains live specimens (including fish) that can brought into Australia without a permit from (SEWPaC) and the other part contains live specimens (including) species that require a permit from SEWPaC.

The DAFF' Guideline to Fish Taxonomy – A Guide to Understanding the Permitted Species list, provides assistance to DAFF fish inspectors with the understanding and implementation of the 'List of Specimens taken to be Suitable for Live Import (maintained by SWEPaC) and DAFF's list of permitted freshwater and marine fish suitable for import.

Even though a species of ornamental fish may be listed suitable for import under the *EPBC Act 1999*, there are still the requirements laid out in the *Quarantine Act 1908* that must be met as every import has the potential to introduce new pests and diseases into Australia. In summary, fish must meet both DAFF's and SEWPaC's requirements to be allowed into Australia.

Pre-border controls

In summary, the biosecurity risk management pre-border baseline controls are:

- animal health certificates from the CA of the country of export, attesting to the health of the fish in the consignment and the health status of the source population
- certification from the CA that the exporter and the exporter's premises are currently approved to export ornamental fish to Australia
- certification from the CA attesting that the fish had not been kept in water in common with farmed food fish.

In addition, controls exist to address specific disease concerns and identification verification. In summary these are:

- health certification from the CA that the source of the fish was free of specified disease agents
- parasiticide treatment for goldfish within seven days before export to Australia
- freshwater fish must have been kept for a minimum of 14 days before export in export premises approved by a competent authority that has been approved by DAFF
- freshwater fish consignments must have been inspected by the CA seven days before export and show no clinical signs of infectious disease or pests
- consignments of freshwater fish must only include mature fish (to permit accurate identification).

DAFF approval processes for overseas competent authorities and exporting countries

Apart from monitoring and verifying that consignments meet the requirements on the import permit, DAFF also manages biosecurity risks associated with the importation

of ornamental fish through its approval and monitoring of the performance of overseas CAs and exporting countries.

Approved countries

The established trade in live ornamental fish was permitted to continue under transitional arrangements specified in DAFF's 1999 IRA. Import requirements based on the IRA recommendations resulted in more restrictive conditions; health certification is now required for each consignment and post-arrival quarantine applies to all imports of live ornamental finfish.

Approval is normally based on an assessment of the ability of the certifying authority of the country to provide informed and reliable certification that Australia's quarantine requirements have been met during the export process.

DAFF uses the 'approved country' approach to provide a mechanism for rapid introduction of new controls on imports from a particular country. These controls are imposed in the event of a change in the animal health status of that country or where DAFF detects breaches of quarantine requirements, such as fraudulent certification.

As at March 2012, 22 countries are approved to export freshwater and marine ornamental fish to Australia and four countries are approved to export marine species only (Table 1).

Table 1 Countries approved to export ornamental fish to Australia, as at March 2012

Freshwater and marine species		Marine species
Belgium	United States of America	Bahrain
China	Hong Kong	Taiwan
Federated States of Micronesia	Indonesia	Tanzania
Fiji	Kenya	Vanuatu
French Polynesia	Malaysia	
Germany	New Caledonia	
Seychelles	New Zealand	
Singapore	Philippines	
Solomon Islands	Saudi Arabia	
South Africa	Senegal	
Thailand	Sri Lanka (excluding *Carassius auratus auratus)*	

Source: DAFF Animal Biosecurity

DAFF takes into account the following criteria when considering the approval of countries to export to Australia:

- animal health status of the country

- the effectiveness of veterinary services and/or other relevant certifying authorities
- legislative controls applying to aquatic animal health, including quarantine policies and practices
- standard of reporting to the Office International des Epizooties (OIE) of major contagious disease outbreaks
- effectiveness of veterinary laboratory services, including compliance with relevant international standards
- effectiveness of systems for control over certification/documentation of products intended for export to Australia.

For countries that have an established history of regularly exporting to Australia commodities such as live animals, genetic material and animal products in commercial volumes in compliance with Australian sanitary requirements, DAFF would normally approve export without further formal assessment. For those countries with no established export trade in animals/products to Australia, DAFF's formal assessment process for approving a country may include:

- examination of information supplied by the country
- consideration of the results of an assessment by Australia's major trading partners to the country as an exporter of like commodities (such assessment will take into account the extent to which the regulatory requirements of trading partners are consistent with those of Australia)
- formal evaluation of the country's veterinary services and/or certifying authority (this may involve country visits by DAFF or DAFF authorised officers).

DAFF monitors the performance of approved countries in reporting OIE-listed diseases, and notifying Australia of changes in disease status. The monitoring is done via routine collection of intelligence on disease, including from scientific literature and internet postings, through the conduct of visits and inspections, and by liaison with other Australian veterinary authorities, including chief veterinary officers of Australian states/territories.

However, all approved countries remain under review and approval can be suspended on an emergency basis at any time.

Competent authority

A CA is a body recognised by the Director of Quarantine (Secretary of DAFF) as the competent authority for a country under the Quarantine Proclamation 1998, section 38(5).

The CA must have in place a system for the approval of ornamental fish export premises to ensure that such premises maintain standards required to export

ornamental fish to Australia. This system is subject to audit by DAFF at any time. Details of the approval process are contained in *Guidelines for the approval of countries to export animals (including fish) and their products to Australia*—Animal Quarantine Policy Memorandum 1999/62 (DAFF 2010b).

In addition, the CA of the exporting country must have the authority to suspend or withdraw export certification and/or approval of export premises at any time if requirements are not being met. The person approving export premises must be an official of the CA charged with responsibility for fish health and have knowledge of the premises and operations.

Border controls

Border entry controls exercised by DAFF on imported ornamental fish comprise:

- verification of documentation accompanying consignments
- inspection to perform species, or in the case of certain marine fish, family and genera, identification checks and fish health assessments
- mandatory quarantine periods.

Import permits

DAFF regulates the entry of ornamental fish through an import permit system that specifies requirements that must be met for fish to enter Australia.

Import permit applications are administered through DAFF's national office in Canberra. Applications can be lodged electronically through eLodgement or manually. Separate import permits are required for freshwater and marine ornamental fish.

Import permits are granted for one year, from the date of issue. Importers may use the permit to import unlimited numbers of fish from approved countries during this period, subject to the conditions of the import permit.

The import permit process is supported by the DAFF Import Conditions database — ICON public access database, which sets out requirements for importing ornamental fish. A list of permitted species is included in the import permits for both freshwater and marine fish.

DAFF has in place general import conditions that set out minimum risk management measures for imported ornamental fish. These include:

- all consignments must be accompanied by either a valid import permit or means to allow the identification of the import permit
- the list of permitted species
- each consignment must be accompanied by documentation that

    - lists individual box or carton identification numbers
    - the scientific name and number of fish in each box
    - name and address of the QAP
- a signed health certificate from the CA of the exporting country
- DAFF standards for handling and packaging of live marine and freshwater ornamental fish for export
- quarantine inspection on arrival of all consignments to ensure
    - fish are healthy
    - the veterinary certification and invoice are in order
    - fish are of an approved species
    - there is no prohibited material or material of quarantine concern
- fish undergo quarantine at a QAP.

Border inspection/verification—initial assessment

Before a consignment arrives in Australia, the importer or agent lodges the consignment in the Integrated Cargo System (ICS) as soon as the air waybill for the consignment has been cleared. When the importer identifies that the consignment contains live animals, the ICS directs it for quarantine inspection and provides a consignment tracking number. As ICS and the DAFF Import Management System (AIMS) are linked, this tracking number is used to track the consignment through the post-entry quarantine process. At various points in this process AIMS is updated to reflect directions imposed and decisions taken until the consignment is released from a QAP.

The importer is required to notify DAFF at least three working days before the arrival of a consignment. The notification is accompanied by, at a minimum, a copy of the relevant health certificate, ICON permit number and a copy of the invoice/packing list. The documents are assessed for completeness in accordance with DAFF's Minimum Documentation Policy (MDP).

Inspection of the consignment on arrival at the international airport

Due to the short period of viability of live fish in water in transport packaging, all import consignments arrive as international air freight.

Arrival inspections of consignments take place at either the container terminal operator (CTO) or at the DAFF regional office. Using the appropriate Audit of Health Certificate for Ornamental Fish form, the import documentation, original health certificate and endorsed invoice/packing list are assessed and checked for compliance with the relevant valid import permit and DAFF's MDP.

The assessment process includes verification that the fish species/genera in the documentation are in accordance with the permitted species list. If the documentation is compliant with the valid import permit and DAFF's MDP, the consignment is directed for inspection. If there is a major documentary noncompliance, the consignment is not inspected and the DAFF Animal Import Operations Branch is contacted for further direction.

DAFF inspectors meet the importer/agent at the CTO at an appointed time to conduct the inspection. For the most regions, appointments are made through the National Appointment System. Where the inspection is to be conducted at a DAFF regional office inspection facility, a DAFF inspector at the CTO verifies that the consignment has been received and either officially seals the vehicle transporting the consignment to the facility or seals the boxes if the vehicle cannot be sealed.

Inspections of consignments are carried out in accordance with DAFF's work instruction dealing with clearance of live ornamental fish to quarantine approved premises (DAFF 2011b). The work instruction, which provides detailed steps for inspecting consignments, is used by inspectors to ensure that there is consistency in the application of inspection processes. These activities commence when DAFF receives notification from an importer or their representative of the impending import of a consignment of fish. The inspection process is complete when the consignment of fish is ordered into quarantine for a specified quarantine period.

DAFF inspectors assess consignments by:

- verifying the number of boxes, including individual bags inside each box, against the information provided on the invoice/packing list
- inspecting all boxes internally and externally for any live insects, other organisms or contaminants
- inspecting individual bags containing fish to verify the
    - validity of the species in the bag and that only one species is in the bag
    - the number of fish in the bag is consistent with the documentation
    - health of the fish (including parasites attached to the fish)
    - absence of snails or any other invertebrates in the consignment
    - absence of plant material.

Where the contents of bags are identified as noncompliant with the import conditions, the bag is formally refused entry by DAFF and the importer is given the option to either export the bag or direct it for destruction. As exporting is expensive, importers usually prefer that noncompliant bags be destroyed. Destruction of the particular fish is conducted in accordance with requirements set out in DAFF's *Reference for Euthanasia of Ornamental Fish* (DAFF 2010e).

Quarantine approved premises

Under the existing biosecurity policy for imported ornamental fish, DAFF approves places where post-entry quarantine requirements may be carried out on a wide range of plants, animals and plant and animal products. DAFF oversees the approval process to ensure that these activities are performed with appropriate management of biosecurity risk.

A detailed assessment and approval process by DAFF aims to ensure that registered places provide an appropriate degree of security and control against the introduction of foreign pests and diseases.

Quarantine approved premises (QAP) conditions of approval (DAFF 2010c) specifies the conditions that must be met to obtain and maintain DAFF Biosecurity approval as a QAP under section 46A of the *Quarantine Act 1908*. Ornamental fish are placed in Class 7.1 QAP.

DAFF's requirements for a Class 7.1 QAP cover the location of the facility, physical structures and administrative procedures for the approval of a private post-arrival quarantine facility for the quarantine isolation of live animals.

QAP operators will need to meet the QAP conditions of approval, undertake applicable training and meet the structural and procedural requirements detailed in the applicable class criteria.

Following receipt of an application for approval as a QAP for ornamental fish, an assessment is undertaken by a DAFF officer who is experienced in the importation of ornamental fish. This process includes the use of a checklist (QAP application coversheet) to ensure that all required details have been provided. Details that are not provided in the application are requested from the applicant by the DAFF officer concerned.

The assessment covers suitability and serviceability of the premises with regard to location, and physical and procedural requirements specified by DAFF for a Class 7.1 QAP. Also included in the assessment are requirements pertaining to ownership, management and administration, accredited operator training, standard operating procedures, workplace health and safety, hygiene and quarantine waste management (including treatment of water that has held fish during quarantine).

In addition to the DAFF fish inspector, an auditor from DAFF's Industry Arrangements Management Program has a role in the assessment of the application and premises. When the application has been assessed as suitable to requirements, approval of the QAP is formally issued by the delegate, usually the DAFF regional manager or a senior executive of DAFF.

Nominated senior managers and QAP accredited persons must also be assessed and approved. These persons are nominated by the applicant.

Once approved, a certificate of registration is issued for the QAP and the certificate details are added to the DAFF QAP register. DAFF registers QAPs annually and audits them twice a year. After four consecutive audits that satisfy DAFF requirements, a QAP may be audited every nine months. A QAP that fails to comply with DAFF requirements is subjected to a more frequent audit schedule. Audits may be announced or unannounced. These audits are conducted in accordance with the work instructions – On-sites Audits of Quarantine Approved Premises and Compliance Agreements (DAFF 2012b).

Noncompliance with the approval criteria or any breach of the *Quarantine Act 1908* will result in DAFF issuing a corrective action notice that must be complied with by the QAP. In the case of serious noncompliance this may result in approval of the premises being withdrawn or suspended and legal action instigated.

When a QAP ceases to operate, DAFF undertakes a close-out audit. In this managed process, detailed inspection and measures to manage all quarantine risk material are applied.

Movement to a QAP after arrival inspection at the border

Once a DAFF inspector is satisfied that the consignment complies with the import conditions it can be ordered into quarantine. An Order into Quarantine, section 52, will then be issued to the importer directing that the consignment be moved to the nominated QAP as indicated on the import permit.

Subsequent inspections by DAFF take place at the QAP based on the prescribed quarantine periods for species, as set out in the import conditions:

- all freshwater ornamental finfish are ordered into quarantine for the following periods
    - goldfish: 21 days
    - gouramis and cichlids: 14 days
    - other freshwater ornamental finfish: 7 days
- all marine ornamental finfish are ordered into quarantine for 7 days.

Inspection and release from a QAP

Inspections at QAPs are carried out during the prescribed quarantine periods and are directed by DAFF's Work instruction—Post entry animal quarantine of live ornamental finfish at 7.1 Quarantine Approved Premises (DAFF 2011).

The basic steps in performing post-entry animal quarantine and release from quarantine are:

- maintain fish in quarantine for mandated periods

    - fish may be treated with a fungicide or parasiticide approved by the Australian Pesticide and Veterinary Medicines Authority while in quarantine and any treatments are recorded on tank records
- inspect all tanks records to
    - compare the number of live fish on arrival, the number of fish in the tank and the number of fish recorded
    - record and verify the number of mortalities in quarantine
    - ensure the scientific and common name of species is on the tank record
    - ensure any treatments used are recorded
    - ensure the details on the fish tank record identify each consignment and have been completed for each day of the quarantine period
- examine fish in the consignment to
    - confirm that all live fish in the consignment are on the permitted species list
    - inspect for signs of diseases or parasite infection
- at the end of the mandatory quarantine period, examine the consignment and tank records to determine whether to release from quarantine or direct for quarantine
- release from quarantine or direct for further quarantine
- documentation and reporting.

DAFF also provides detailed instructions to determine whether the quarantine period should be extended. In the following cases, the release of fish from quarantine would be considered an unacceptable risk:

- there is more than one species present in a freshwater tank
- there is contamination in a tank
- mortality is greater than 5 per cent and occurs over a few days
- tank records are incomplete or inaccurate
- fish show signs of disease or parasitic infestation.

If the inspector is satisfied that the consignment can be released, the importer will be provided with a release from quarantine direction.

Suspected breaches and actual breaches of the *Quarantine Act 1908,* import permit conditions, conditions relating the QAP criteria, disease detections or high level of mortality rates are reported to the relevant areas in DAFF central office in Canberra.

If the mortality rate is inconsistent through the entire quarantine period or at an unacceptable level, a formal direction is given to destroy the fish in the tank. Mortalities are also confirmed by inspecting the designated quarantine freezers in order to clear those for quarantine waste disposal.

In the South West Region, DAFF has a unique opportunity to submit periodic samples of fish destroyed because of breaches to undergo free pathology tests. The tests are funded by the department of fisheries in Western Australia, which also has a particular biosecurity interest in identifying the cause of mortalities. Because of the costs involved for the importer in conducting such testing in the other regions, DAFF is rarely able to objectively determine what caused the mortalities and to assess the presence or absence of diseases of aquatic animals in imported fish that are directed for destruction or export.

IIGB findings and recommendations

DAFF approval process for approved countries

The import conditions in place for the importation of ornamental fish are based on the IRA completed in 1999. Several changes have been made to import conditions since that time.

In line with the risk return approach adopted by DAFF in the last two years, greater biosecurity emphasis is placed on risk management in countries exporting ornamental fish to Australia. The planned improvement to on-arrival verification of standards and compliance of exporters and CAs is expected to be enhanced under these arrangements.

Currently, 22 countries have approval to export freshwater and marine ornamental fish species to Australia and another 4 countries have approval to export marine species only. However, in recent years about half of the approved countries have not exported fish to Australia.

Unlike approvals for terrestrial animal imports, the basis for country approval of ornamental fish does not require the exporting country to be free from specific diseases that affect aquatic animals. The IIGB noted that this reflects the relatively intangible nature of determining aquatic animal health status due to the absence of countrywide aquatic animal disease surveillance systems and the presence of cross-border common aquatic systems between many countries. However, reports of disease emergence and outbreaks in approved countries are monitored by DAFF.

In recent years exporters in unapproved countries have expressed interest in supplying ornamental fish to Australia. DAFF reported to the IIGB that this interest has not been pursued once DAFF has provided information about Australia's CA approval process and the likely timing of new CA approvals.

The IIGB noted that, in response to enquiries from overseas governments and industry stakeholders, DAFF explains its program of evaluating the CAs of countries currently approved to export to Australia. DAFF also makes it clear that evaluation of a CA representing a new applicant country would only be begin once evaluations of current exporting countries are completed.

The current list of countries approved to export ornamental fish to Australia was recommended in the 1999 IRA for ornamental fish. In so doing, the IRA recommendation sought to extend the approval for countries that had been exporting fish over the years leading up to 1999.

A recommendation from the 1999 IRA was that the performance of the CA in each of the approved countries be evaluated. Competing priorities for DAFF resources resulted in action on this recommendation being delayed. It was not until May 2009

that DAFF commenced a structured program to evaluate CAs of countries exporting ornamental fish.

Foremost in DAFF's consideration of whether a country can be approved is an assessment of its CA. This is usually the national veterinary service or other relevant certifying authority.

DAFF assessment process of competent authorities

The essential outcome sought in the approval process is confidence that the CA is capable of providing independent, reliable and valid certification that exported ornamental fish meet Australian import permit requirements.

DAFF Animal Biosecurity has developed and uses operational guidelines and templates for evaluating an exporting country's CA and animal health status. This is a framework document for undertaking an evaluation process, either:

- in response to a potential exporting country's request for market access
- as part of the process recommended by the 1999 IRA to undertake CA evaluation of those countries given approved status on the basis of pre-existing approvals granted before 1999
- as part of an ongoing process where periodic assessments are required in order for an exporting country to maintain market access.

The process used by DAFF to undertake an evaluation of an overseas CA involves:

- gathering and analysis of documented information provided by the CA and from a wide range of sources
- an on-ground visit by DAFF officials to the relevant country to undertake a detailed assessment of the CA
- an assessment that looks for expected baseline capabilities, including the capability and skills to inspect for clinical signs of disease in aquatic animals and to detect, investigate and report significant disease events within the CA's jurisdictional area
- an assessment of the exporting country's capabilities and performance of veterinary laboratory services, legislative and administrative systems to support inspection and certification and international reporting of the country's fish disease status
- an assessment that includes broader considerations, such as entry pathways for diseases through import processes
- an assessment to ensure that international standards applying to disease risk management of ornamental fish are being met.

DAFF has developed a template and guidelines for these CA evaluations based on ISO standards for management and auditing. DAFF undertakes desktop audits of documentation and of information gained from country inspections. This approach has increased the objectivity of the process.

Once a draft evaluation has been finalised, it is forwarded to the relevant CA for fact checking, with a processing time of about one month. The fact checking can be done by email, teleconference or written correspondence.

After considering the CA's response to the draft evaluation, DAFF finalises its assessment report. A letter is then sent to the CA outlining areas of unsatisfactory standard(s) and priorities of action to mitigate or remediate any areas of noncompliance. The CA is requested to develop an action plan that includes a timetable for implementing actions to address the issues needing improvement. However, the IIGB found that DAFF has no formal plan at present to follow up and monitor these action plans on the ground in the exporting countries concerned. DAFF proposes to use opportunistic visits by its officers to monitor fish export systems, including action plans.

The IIGB noted that DAFF is developing an operational policy relating to the frequency of follow-up CA audits. The IIGB also noted DAFF's planned changes to post-arrival disease surveillance arrangements. The outcomes of these changes are expected to provide an evidence-based means for prioritising CA audits and evaluations. The effectiveness of these changes could be the subject of a future audit and review by the IIGB.

During data gathering for this audit, DAFF completed two evaluations of competent authorities in Singapore and Malaysia, and was in the process of finalising evaluations of CAs in Sri Lanka and Thailand.

On 22 March 2012 DAFF made a public advisory statement that as at 1 April 2012, Sri Lanka will no longer be an approved country for the export of live goldfish (*Carassius auratus auratus*) to Australia.

This amendment to the approved country list came about due to developments in the evaluation by DAFF of Sri Lanka's Department of Animal Production and Health (DAPH), the competent authority for health certification of ornamental fish from Sri Lanka. This suspension of market access for goldfish may be lifted once DAPH implements prescribed pre-export controls that provide the appropriate surveillance and monitoring of goldfish as required for health certification.

In the evaluations to date of the above four CAs, DAFF found that the CAs had suitable basic diagnostic capabilities. However, DAFF believes this may not be the case in all countries currently approved to export to Australia.

Another issue considered by DAFF during the evaluation process is that while a country may have adequate legislative provisions to underpin health certification, it

may not have the appropriate administrative arrangements to implement and monitor the arrangements effectively.

The IIGB noted that DAFF has plans for a further two evaluations of CAs to be undertaken in China and Indonesia. Once completed, these CA evaluations will cover the source countries that supply up to 99 per cent of Australia's imported ornamental fish.

It was also noted that DAFF considers it is requesting enough information from the CAs to conduct the evaluation process effectively. DAFF also considers its requirements are consistent with, and are generally above, international standards set by the World Trade Organisation's Sanitary and Phytosanitary Agreement and the World Animal Health Organisation (OIE).

The IIGB found that evaluations based on information obtained during country visits by DAFF officers were comprehensive. Documentation and outcomes of interviews with assessment officials showed evidence of a suitably rigorous evaluation process for country and CA approvals.

The IIGB also found the DAFF process of identifying deficiencies is effective and allows the relevant CA to carefully plan and undertake remedial action. This structured approach that aims to maximise the use of evidence-based assessment of each CA is well considered and suitably implemented.

However, the challenge remains of how to monitor standards and systems used by each CA over time. While verification of compliance with import requirements can be monitored to some degree by the inspection of imported fish consignments and accompanying export documentation, return visits by suitably experienced DAFF officers to each country must be carried out. This has resource implications, especially in view of competing priorities across the DAFF biosecurity system.

The introduction of the risk return approach is likely to influence DAFF's future CA evaluation program. Further assessments of other CAs involved in minor trade to Australia may not be regarded as a priority when considering the return on the required investment. The IIGB noted that biosecurity risks associated with aquatic environments are often more difficult to monitor and mitigate than those for land-based activities.

The IIGB noted that the system for pre-border risk management is in the process of being upgraded and that an increased level of objective assessment is being applied to CAs and certification systems.

These system improvements are being applied to an imperfect base in the case of ornamental fish imports. Approved countries remain essentially those that were exporting ornamental fish to Australia before 1999. Most of these listed countries have not had their CAs assessed under current DAFF processes. On grounds of priority, it is doubtful whether DAFF can devote the resources to undertake detailed

assessments of countries other than those supplying the bulk of Australia's ornamental fish imports.

Specific disease risk management applies to only a few fish diseases. Broader risk management measures applying to pre–border and border stages of importation rely on isolation of eligible fish, general observational inspection and assessment of import consignments. Mortality data and patterns of observed illness form the basis for decision-making on the health of each consignment and whether it can be released from quarantine. Laboratory testing is rarely used mostly for cost and logistical reasons.

In summary, this system is not capable of ensuring a high level of protection against entry of new or emerging fish diseases. The system is not adequate for the detection of sub-clinical infected fish.

Only four country and competent authority evaluations have been undertaken using the newly developed evidence-based assessment processes. It is likely that many of the countries approved to export over the last 15 to 20 years would have difficulty passing the new robust evaluation processes.

Recommendation 1
That future importation of ornamental fish be permitted only from exporting countries that, after evaluation by DAFF, are found to meet contemporary country and competent authority standards.

The approval process is undertaken by dedicated and skilled DAFF officers who recognise the limitations of the biosecurity risk management it delivers. The IIGB noted that a small, skilled team from DAFF undertakes the evaluations of countries and CAs involved with importing ornamental fish. An existing training program for these officers appears to adequately address current and near future needs.

Effectiveness of performance of evaluations is underpinned by several factors, including:

- An audit verification approach, developed for use by DAFF officers, provides a rigorous approach by focusing on evidence-based evaluation.
- Relevant DAFF officers have appropriate skills and knowledge of aquatic animal diseases and biosecurity management.
- Relevant experience relating to country and CA assessment exists in the DAFF Animal Biosecurity Branch and this enables reasonable intuitive decision-making, when necessary.
- Audit tools/methodologies developed by the DAFF Animal Biosecurity Branch are aimed at minimising subjectivity in assessments.

- Relevant DAFF officers are trained in ISO 9000 quality assurance.
- Relevant DAFF officers are knowledgeable in Hazard Analysis Critical Control Point (HACCP) codes and processing.

DAFF does not maintain a list of suppliers/exporters, but expects each CA to maintain, and have available, a list for monitoring purposes. If DAFF identifies, through its information/intelligence gathering processes, a potential problem with an exporter, the relevant CA is DAFF's primary point of contact for investigation.

The IIGB noted that DAFF has embarked on a planned course to increase emphasis on off-shore risk management measures for ornamental fish imports, and to reduce the current emphasis on post-arrival quarantine.

Under such a model, the integrity of the supplier/exporter to fully comply with Australian import requirements comes into even sharper focus than is the case with the current model. The proposed approach, which is gradually being introduced, requires DAFF to take a more direct approval, monitoring and feedback role at the individual supplier level in the exporting country.

Recommendation 2
That DAFF establish and maintain a list of approved suppliers/exporters to facilitate monitoring of compliance and to initiate timely remedial action in response to detected noncompliance with Australian import requirements.

Asked by the IIGB about any observable change in the performance of a CA following evaluation and subsequent imposition of remedial action, DAFF indicated that the numbers of fish Malaysia consigned to Australia fell significantly. However, these numbers have gradually risen and the Australian industry has reported to DAFF that fish health in these imports has improved.

Under this developing model, biosecurity can only be as robust as the lowest levels of capability of CAs and compliance by ornamental fish exporters. DAFF must be confident through its approval and verification processes that the standards of pre-export controls are set and are being met. This places demands expectation on the skills and resources DAFF is prepared to apply to this system.

With competing resource priorities across the spectrum of services delivered by DAFF, the department must find a way to ensure adequate compliance verification is applied across the large and dynamic live fish import industry.

The aquatic animals section of DAFF Biosecurity Animal Division does not routinely monitor seizure or noncompliance data from arrival inspections and from the post-arrival quarantine period. Therefore, there could be delays in detecting whether any systemic issues exist with regard to the performance of a particular CA.

Recommendation 3
That DAFF put in place a system for gathering and analysing data on seizure and noncompliance of live imported fish consignments to enable timely monitoring of performance of each approved country's competent authority and exporters against Australian import requirements.

DAFF systems for gathering data and monitoring animal health in importing countries

DAFF gathers information on emerging diseases and disease outbreaks in other countries to assist in monitoring the performance of approved CAs.

An officer of the aquatic animals section in DAFF Biosecurity Animal Division monitors outbreaks of disease using software that scans official government and relevant scientific and social media websites associated with fish health. In collaboration with the Australian Centre of Excellence for Risk Analysis, DAFF is using the data to map trends in disease outbreaks, such as herpes virus mortalities in certain EU countries.

Use of offshore information by DAFF in setting risk management measures

When circumstances warrant, DAFF amends import requirements for ornamental fish mainly in response to:

- revisions of the live permitted import list by the Australian Department of Sustainability, Environment, Water, Population and Communities
- revisions of disease risk assessment following receipt of new scientific information on fish diseases
- significant disease events or changes in overseas disease patterns
- changes in Australia's status regarding fish diseases, for example, in the early and mid-2000s detections in Australian goldfish of goldfish haematopoietic necrosis herpes virus resulted in removal of specific requirements to safeguard against that disease in imported goldfish.

In July 2010 DAFF released a provisional final IRA report (DAFF 2010d) on imported freshwater ornamental fish, with particular reference to risks associated with gourami iridovirus and related viruses. The report found the current biosecurity import controls on cichlids, gouramis and poeciliids do not meet Australian standards for protection against megalocytiviruses.

The provisional final IRA recommends that the importation of fish of the gouramis, cichlids and poeciliids for ornamental purposes be permitted if the fish are batch tested post-arrival in Australia and found to be free of megalocytiviruses; or are

sourced from a country, zone or compartment that is recognised by Australia to be free of megalocytiviruses.

The Director of Animal and Plant Quarantine has considered the provisional final IRA report and has decided to await the completion of a University of Sydney survey of Australian fish for megalocytivirus before making a determination on the IRA's recommendations. The survey, expected to be completed in March 2013, will provide additional information about the disease status of Australian fish with respect to megalocytivirus. The current import conditions for freshwater ornamental fish with respect to iridovirus will remain in place until the survey findings are assessed.

The current IRA process illuminates significant risk management challenges and seriously deficient gaps in the ability of the current system of import control measures to detect and prevent establishment in Australia of significant foreign diseases of fish, especially diseases that can be carried in sub-clinically infected fish. There is an urgent need to complete the IRA process as soon as possible given the nature of the findings.

Recommendation 4
That the Director of Animal and Plant Quarantine respond as soon as possible to the recommendations of the July 2010 provisional final IRA with respect to biosecurity risk management for iridoviruses.

Border inspections and verification

This element of the audit has made a number of findings based on observations of inspections at CTO/regional office inspection facilities, inspections at QAPs and documentation reviews. Apart from the findings and recommendations, the IIGB has identified a need for the adoption of better practices within particular regions; these would further enhance the efficiency and effectiveness of the overall inspection process. Appendix A summarises IIGB observations at the three regional offices.

The identification of fish species is one of the few physical controls in place to ensure that only permitted fish are released. The IIGB observed that significant skill, familiarity and knowledge are required by DAFF officers conducting inspections. Ultimately, the identification process is an imperfect science, influenced by factors sometime outside the control of the individual conducting the inspection.

The IIGB observed how consignments were received at CTOs and regional offices and the processes followed by inspectors to verify consignments and related documentation. It was clear that the physical inspection of bags requires reasonable effort to lift it high enough to facilitate proper inspection. The inspection facilities also have an impact on the outcome of the inspection.

Figure B Inspection of ornamental fish consignments by DAFF staff

Source: IIGB 2011

The IIGB observed that DAFF regions have adapted to requirements set out in the relevant SOPs and WIs by modifying their practices to suit the individual circumstances of each regional facility. However, the IIGB acknowledges that it is not always possible to modify the design of inspection facilities in regions where third-party premises are used. The IIGB understands that improvements have been made to some regional inspection facilities; for example, raising the height of inspection benches to ease the physical strain of conducting inspections.

The lack of comprehensive guidance on the maximum size of bags in which fish are transported, as well as the maximum number of fish allowed in a single bag, contribute to challenges that need to be overcome in the inspection process.

A significant issue identified through the IIGB's examination of import documentation relates to a non-permitted species, *Acrobrycon ipanquianus*, mistakenly cleared for release. The review found that the non-permitted species was listed on the invoice/packing of a consignment. This species was not identified during the initial documentation assessment, nor at the CTO inspection, nor during subsequent QAP inspections. There was no other evidence in the documentation to suggest that appropriate action was taken, that is seizure of the non-permitted species. It appears that the non-permitted species was subsequently mistakenly released.

The permitted species *Boehlkea fredcochui* (Cochu's blue tetra) resembles *Acrobrycon ipanquianus*. An added difficulty with inspection activities is that fish tend to discolour as a result of travel and movement. Identifying a non-permitted species in a bag of 200 fish, each approximately 2 to 3 centimetres in length, adds to the inherent risks of visual identification practices.

Figure C Permitted and non-permitted species

Boehlkea fredcochui *Acrobrycon ipanquianus*

Source: IIGB 2011

DAFF should consider electronic databases to assist inspection officers to match species names on packing lists with permitted species lists. This could help reduce the possibility of human error in the identification of permitted, non-permitted or prohibited species. If automation is not possible, at a minimum, scientific names on packing lists should be sorted alphabetically.

Ornamental fish represent a unique and complex commodity. Only a small number of DAFF inspection officers have the experience, knowledge and skills to affectively carry out the post-entry quarantine processes required. As evidenced by the mistaken release of a non-permitted fish species, it is vital that inspectors are able to differentiate between non-permitted or prohibited species, through visual identification and in import documentation.

In response to IIGB inspections of the regions, DAFF has prepared a guide for inspectors on fish taxonomy and the permitted species list. The guide includes links to reputable websites listing scientifically valid and accepted synonyms. The provision, at inspection sites, of access to online databases should improve the effectiveness of identifying which fish are on the permitted species list. With relatively few importers in each DAFF region, inspectors become familiar with the species being imported by a particular importer.

Another challenge to maintaining the skills and knowledge of inspectors is the departmental officer rotation policy. Staff rotation limits opportunities to build an experienced team that can affectively assess ornamental fish, as do occasional officer absences and reliance on the corporate knowledge of key officers.

The IIGB noted DAFF has no formal training package in place that deals with border inspections of ornamental fish consignments. Most training takes place on the job when new fish inspectors accompany more experienced inspectors during initial

inspection activities. This mentoring approach has merit and is valued by new fish inspectors. However, trainees also need formal training.

The IIGB recommends a training package be developed to build the skills and knowledge fish inspectors require. Ensuring the ongoing competency of inspectors should be part of the process. Training will enhance the effectiveness of the identification process and strengthen the overall system to manage biosecurity risks.

Recommendation 5
That DAFF develop a formal training package for fish inspectors. This should include monitoring of the ongoing competency of inspectors.

Inspection processes

While DAFF regions have adapted to the requirements set out in the relevant SOPs and WIs, the IIGB identified some practices that were either inconsistently applied between regions and/or posed additional, possibly unacceptable, risks.

The IIGB found that differences in inspection facilities resulted in differences in inspection methods and affected the procedures for visually identifying fish species. The IIGB acknowledges that there are certain limitations to effectiveness of inspection that are associated with design faults of the inspection facilities. In most cases, the inspections occur in premises owned and operated by private sector parties.

The IIGB observed inconsistent use of protective clothing during consignment inspections. Not all inspectors wore rubber gloves, jackets or splatter guards to protect the arms. Not wearing appropriate protective clothing puts an inspector at risk should there be contaminated water in a consignment box.

The quarantine processes for ornamental fish appeared to be applied consistently and in accordance with the relevant SOPs and WIs across the three regions visited, apart from small variances required to adapt to local circumstances and facilities.

A recurring theme throughout this audit was the link between the inherent challenges of identification and inspection activities and the lack of formal training for ornamental finfish inspectors.

Processes at quarantine approved premises

During QAP inspections the IIGB observed quarantine activities conducted by QAP operators and DAFF inspectors.

Most inspections undertaken by DAFF at QAPs are similar in approach across the regions with slight variations depending on the circumstances and facilities. Inspections consist of scheduled and occasional unscheduled visits.

DAFF officers face several challenges when undertaking inspections of imported fish during the quarantine period:

- verifying fish numbers in a consignment
- identifying and tracking individual imported fish in a privately operated QAP
- determining whether a significant disease agent or parasite not endemic in Australia is present.

Verification of fish numbers in a consignment is mostly by estimation. This is due to the practical difficulty of obtaining an accurate count from, for example, large numbers of constantly moving fish in a tank.

DAFF's control system cannot confidently identify and track individual imported fish in a privately operated QAP throughout the required quarantine period. For a given species, it is not possible to verify that the fish in a tank in the QAP are the same individuals that were ordered into quarantine after inspection by DAFF officers on the relevant arrival date. Accuracy in recording the number of fish deaths during a quarantine period in a QAP is reliant on the operational integrity of the QAP. The removal, or substitution, of fish under quarantine cannot be controlled by DAFF inspectors, who are off-site for most of the quarantine period. DAFF compliance investigations have detected compliance breaches involving the removal of fish.

DAFF does not undertake routine sampling and laboratory testing to determine the cause of significant morbidity or mortality events in a consignment of fish undergoing quarantine at a QAP. This reflects the preference of importers to opt for all the fish in an affected tank to be destroyed rather than incur the costs of laboratory testing.

DAFF inspectors use a set of parameters based on morbidity/mortality records during the quarantine period in privately operated QAP to decide whether a consignment of imported fish should be released after the mandatory quarantine period. However, the IIGB noted some subjectivity in decisions to release or not release fish from quarantine.

Fish not released from quarantine are destroyed under DAFF supervision. This process does not include an assessment of whether a significant disease agent or parasite not endemic in Australia is present.

DAFF inspectors examine the tank records relating to specific consignments to determine whether there were unacceptably high mortality rates during the quarantine period. A decision is then made to destroy, hold or release the fish from quarantine based on the information reported on the tank records. These directions are passed onto the QAP operator.

The IIGB observed differences between the regions with regard to the level of documentation on file and who kept the tank records. For example, in the South West Region tank records are not kept on DAFF files; instead, they are maintained by the QAP operator.

Heavy reliance is placed on the diligence of QAP operators in conducting their business in compliance with quarantine requirements. Once inspectors leave the premises operators could potentially switch fish between tanks or between the shopfront and the quarantine areas. During inspections at QAPs, DAFF inspectors cannot count each individual fish and must rely on tank records to indicate numbers.

DAFF's work instructions provide criteria to assist DAFF inspectors assess when the level of risk is acceptable to release fish from quarantine. The level of risk is considered unacceptable if the mortality rate is greater than 5 per cent *over a few days*. Interpretation of this instruction is difficult due to the inherent problem of estimating the mortality rate for fish swimming around in a tank and in defining what constitutes 'a few days'. These difficulties can also lead to inconsistencies in the application of the criteria.

The IIGB examined tank records at one of the selected QAPs to review the application of criteria by DAFF inspectors used to decide whether to release a tank from quarantine. This examination revealed to the IIGB a lack of consistency in the application of criteria to release fish from quarantine.

At this QAP, a number of tanks were subject to a seven day quarantine requirement. Information in the tank records for this seven day period indicated that the mortality rate was high in the early period of quarantine but was decreasing towards the end of the seven days. A DAFF inspector decided to hold the tanks in quarantine for a further seven days, because the mortality rates during the initial seven days were high. The tank records indicated that a low to moderate rate of mortality persisted. However, at the end of the 14-day quarantine, an inspector stamped and signed the tank records and approved the fish for release.

This example highlights the challenges and the essential need for DAFF to have well trained and experienced officers to make decisions based on often less then precise information. There is a considerable degree of subjectivity in the process.

When asked by the IIGB about this particular instance other DAFF officers indicated they might not have released the tanks from quarantine, given the information contained in the tank records. It should be noted that the assessment made by these other DAFF officers was based on their analysis of information in hard copy documents, without having a direct insight into the health of the fish at the time, or knowledge of circumstances that may have caused the inspector to make the decision. It appeared that the decreasing mortality rate across a 14-day period was a key influence in the inspector's decision to release the tanks.

The IIGB identified the need for consistent use of a cover sheet on consignment files kept by DAFF regional offices. The cover sheet provides a one-page snapshot of the movement and actions of the particular consignment. Further examination by the IIGB identified inconsistencies regarding what should and should not be kept on file. There were also inconsistencies between the information on file and in AIMS.

From an audit trail perspective, the lack of documentation, including tank records, limits DAFF's ability to substantiate why certain decisions were made. Although AIMS is used to track the consignment, it only allows for free text comments that make reference to hard copy documentation and particular actions taken or directions imposed on the consignment. AIMS does not have the functionality to maintain electronic copies of required documents. The IIGB appreciates that any modifications to AIMS would have to be assessed against any achieved net benefits.

The information contained on tank records would assist DAFF in any future reviews or scientific analyses relating to the importation of ornamental fish. Under current arrangements, QAP operators are required to maintain consignment documentation (including tank records) for two years only.

Inspection of relevant documentation revealed inconsistencies in the interpretation of fields in the Audit of Health Certificate for Ornamental Fish forms. The forms contain three fields where information needs to be entered: the number of tails arrived, number of tails recorded on the health certificate and the number of tails recorded on the invoice/packing list.

The IIGB found there was some confusion as what numbers should go into what field. For example, in the section asking for 'number of tails on invoice/packing list', some inspectors recorded the numbers of fish entered on the packing list, while others recorded numbers from the invoice document. These numbers can differ for a given consignment. The packing list is used during the initial documentation verification whereas the invoice is referred to at the visual inspection of consignments and is considered as having the definitive numbers against which the consignment is checked. The IIGB considers that improvements to documentation procedures would assist the effectiveness of border inspections. Suggested improvements are:

- development of a minimum recording requirement for documents and information that must be kept on consignment files, including electronic documentation
- procedures to ensure tank record data are retained and available for analysis for a minimum of five years
- amendments to the Audit of Health Certificate for Ornamental Fish forms to ensure consistency in the source of information used in the completion of fish numbers on the forms
- the requirement that importers provide in advance an electronic copy of the consignment invoice/packing list as set out in the import conditions and that scientific names are listed alphabetically.

DAFF approval and monitoring processes for quarantine approved premises

The IIGB noted that the effectiveness of the current import control system for aquarium fish relies heavily on QAP management to comply with import conditions, including accurately representing and recording deaths and signs of disease, and not moving or transferring fish during the quarantine period.

The IIGB noted that DAFF's investigations and reviews of particular QAPs identified significant deficiencies in the current system caused by a reliance on the trustworthiness of operations of privately owned and operated QAPs, including the early removal of fish from quarantine and importation of non-permitted species. DAFF investigations have also uncovered undeclared criminal convictions in applications for approval to operate a QAP for ornamental fish.

In many cases, several persons are accredited in the approval of a QAP for ornamental fish. The integrity of these persons receives little scrutiny in the assessment process due in large part to limited checks of identity and criminal history.

The *Quarantine Act 1908* contains inadequate provisions for the assessment of applications for approval of a QAP and rejection of applications with respect to previous breaches of, or convictions under, relevant other legislation by the applicant and other relevant persons nominated by or associated with the applicant.

DAFF form QAP 06/09 is requires applicants seeking approval of a place for the performance of quarantine to declare whether they, the nominated senior manager or an accredited contact person have been convicted of any (or certain specified) offences against the *Quarantine Act 1908,* the *Customs Act 1901* or any other relevant legislation.

In one QAP application document on a regional DAFF file, the IIGB found that the applicant had declared a previous conviction and significant fine for an offence against state legislation involving an illegal species. This conviction was more than 10 years prior to the application. The IIGB understands DAFF's ability to take account of previous convictions is restricted to the past ten years under the provisions of the *Crimes Act 1914*. This is governed by the Commonwealth Spent Convictions Scheme applying to that statute. That application for the QAP was subsequently approved. Through examination of file records and discussion with DAFF officers involved in the assessment and approval process, the IIGB was unable to discover what considerations were given to the declaration in the decision to approve the application.

Given the heavy reliance on trust and integrity of private owners and operators, there is a reasonable case for developing legislative requirements for DAFF to exercise fit and proper person controls in the QAP approval process.

Recommendation 6
That DAFF pursue the development of legislative requirements that enable fit and proper person considerations in the QAP application and approval process.

The IIGB noted that in recent years DAFF's procedures have been amended to deal with QAPs that have changed ownership. Formerly, while new owners were recorded in existing QAP files there is no evidence that new full assessments were undertaken.

Under current arrangements, a change in ownership requires a full assessment before renewal of an approval. This more rigorous process ensures that new owners and management are made aware of and assessed against the full set of requirements for operating a QAP.

The IIGB supports these changes, which strengthen the integrity of the DAFF QAP approval process.

DAFF's Industry Arrangements Management Program officers conduct the majority of audits that monitor compliance with QAP Class 7.1 requirements. In the North East and South West regions these audits are usually done in conjunction with a DAFF inspector who has fish quarantine experience.

Due to complexities regarding archived records for some case studies in this audit, the IIGB was unable to review all the historical file data regarding applications for approval as a QAP, applications for renewal of approval as a QAP and compliance audits undertaken before 2009. However, examination of relevant documentation dating from 2009 onwards showed that DAFF implemented and acquitted approval and monitoring satisfactorily.

The IIGB also noted that, with amendments to procedures, the frequency of compliance audits by DAFF has changed over recent years. The frequency of audits has generally increased but can be varied depending on the level of compliance over time of individual QAPs. QAP approval monitoring usually involves six-monthly compliance audits, but these can be extended to nine-monthly if a QAP has had four successive audits with no non-compliances recorded.

With regard to assessment, approval and auditing of QAPs, the IIGB noted that DAFF has a mandatory training program to provide officers with basic auditing skills. This is delivered under the National Auditing Training Program and involves a two-day training program, on-the-job coaching with an experienced auditor and assessment in conducting a field audit. The IIGB noted that this training program appears to be appropriate and adequate for auditing QAPs for imported ornamental fish.

Appendix A Case study selection and IIGB observations

This audit included detailed testing in relation to a sample of 25 consignments selected across three DAFF regions based on specific risk profiling—North East, South West (WA) and South East. The testing followed consignments through the border managements and quarantine release process to determine whether:

- there was compliance with DAFF's policies and procedures in relation to
    - the assessment of import permit applications
    - the issuing of permit applications
    - the verification of import documentation and consignment's compliance with import conditions
    - the inspection of consignments
    - the management and tracking of consignments to QAPs
    - managing consignments at QAPs by operators and DAFF staff
    - the release of consignments from quarantine where applicable.

The 25 sample consignments were selected to proportionately represent the volume and type of imports for 2010–11 across all regions. The risk profiling considered a number of aspects such as total number of consignments received during a 12 month period in a region and the number of a particular species being imported in a particular region. Tables A1 and A2 show the numbers of consignments and freshwater and marine ornamental fish that are processed by each of DAFF's regions.

The South East region handled the largest number of consignments in 2010–11, accounting for around 40 per cent of total consignments, with the North East and Central East each accounting for around 30 per cent of the total number of consignments.

Table A 1 Number of consignments and individual fish, 2010–11

DAFF region	Consgts	Freshwater	Marine	Other freshwater	Cichlid	Gourami	Goldfish
	no.	no.	no.	no.	no.	no.	no.
South East	689	6 898 327	45 302	5 341 898	350 020	125 972	1 080 437
North East	446	4 787 558	50 919	3 703 851	198 560	98 127	787 020
Central East	458	1 628 121	146 394	1 356 879	133 298	36 486	101 458
South West (WA)	78	338 896	30 886	314 182	16 183	6 750	1 871
South West (SA)	12	72 767	–	64 416	5 883	1 003	1 465
Northern	10	25 338	–	22 611	1 568	540	619

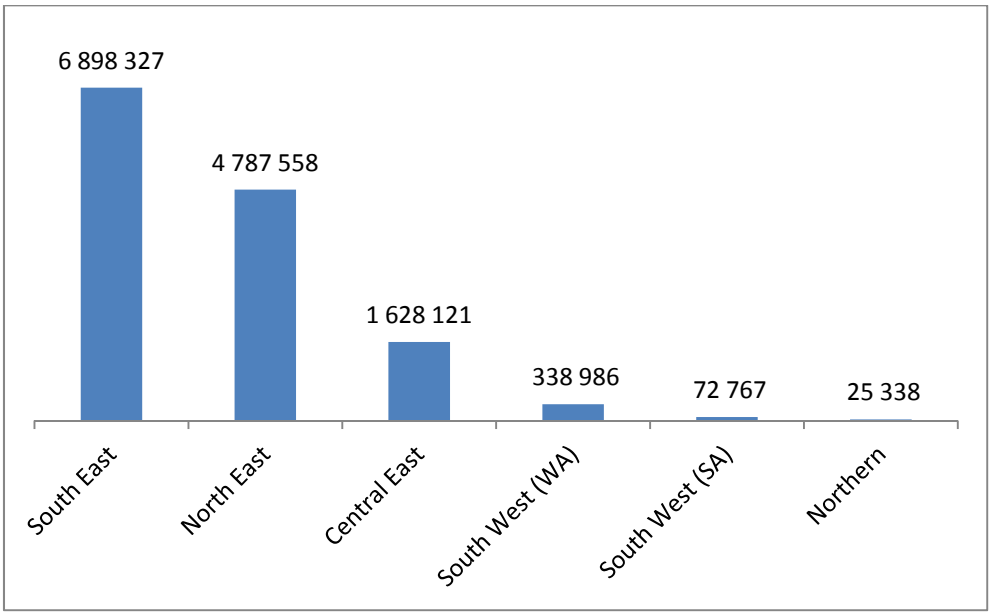
Consgts = Consignments; WA = Western Australia; SA = South Australia
Source: DAFF

Table A 2 Highest number of individual fish, by consignment, 2010–11

DAFF region	Freshwater	Marine	Other freshwater	Cichlid	Gourami	Goldfish	Samples
	no.	no.	no.	no.	no.	no.	no.
South East	181 260	1 742	124 200	181 260	3 360	25 954	11
North East	57 720	2 281	57 175	6 930	3 520	38 400	9
Central East	35 728	1 724	32 820	7 560	1 580	9 070	–
South West (WA)	25 040	**5** 745	22 930	2 934	830	1 871	5
South West (SA)	7 180	–	6 849	860	269	781	–
Northern	6 432	–	6 202	396	220	247	–

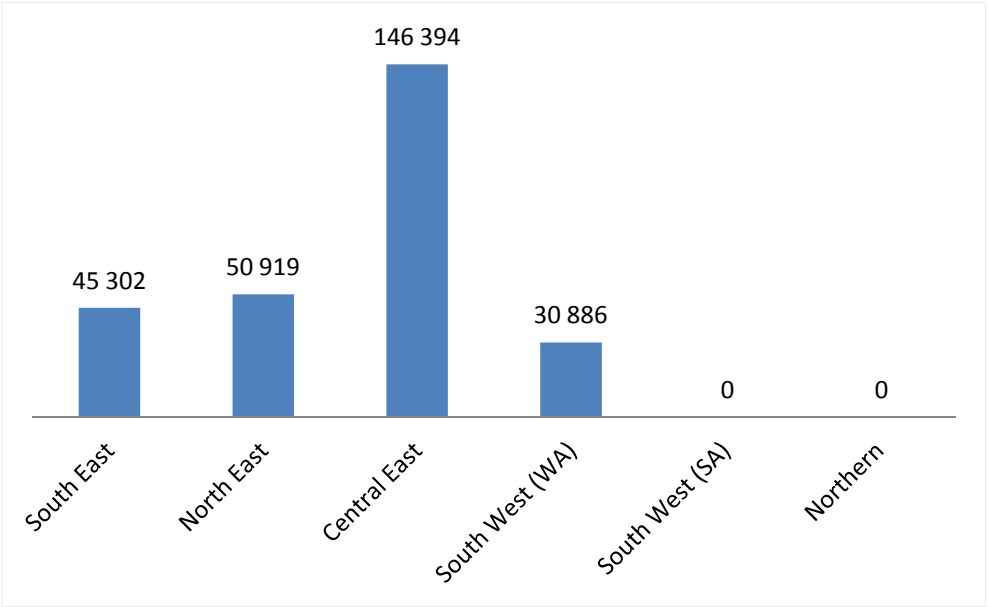
Source: DAFF

Figure A 1 Number of imported freshwater fish, 2010–11



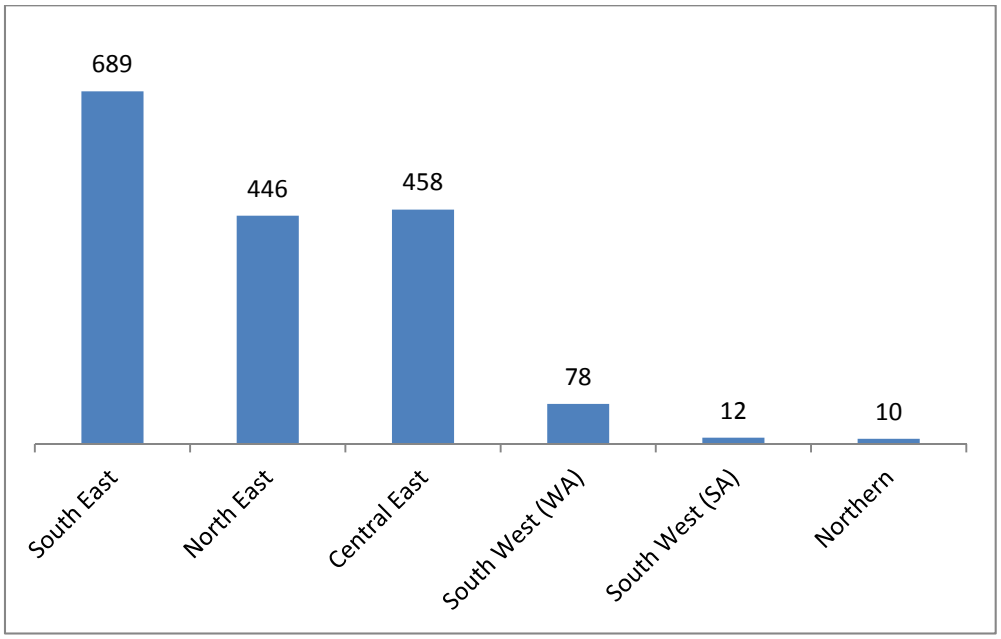
Source: DAFF

Figure A 2 Number of imported marine fish, 2010–11



Source: DAFF

Figure A 3 Total number of consignments, by region, 2010–11

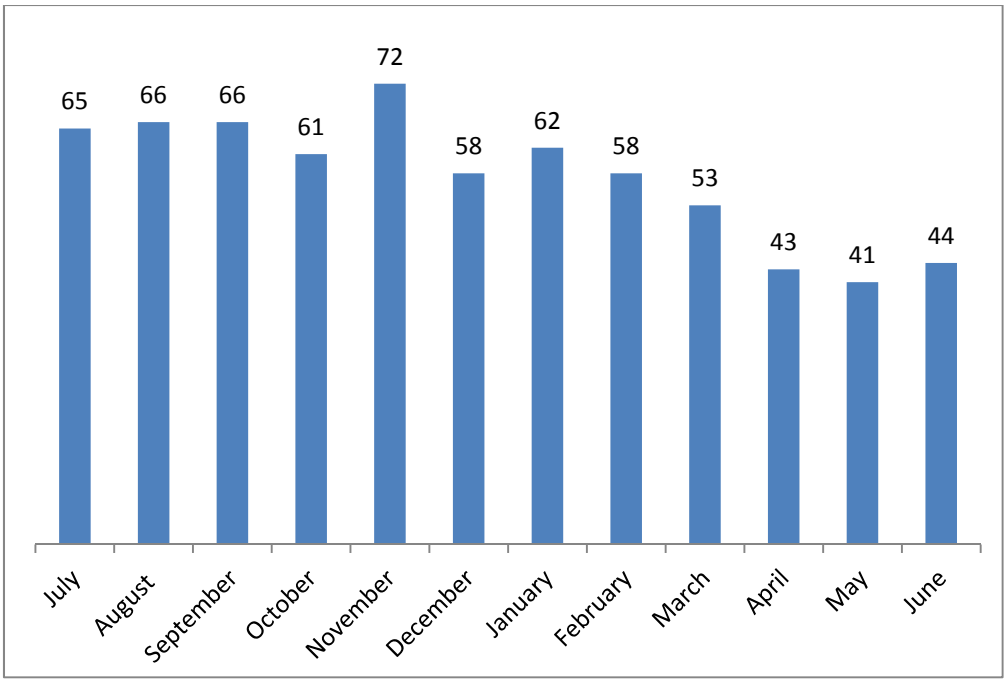


Source: DAFF

South East Region (Melbourne office)

The region includes Victoria, Tasmania, the Riverland in South Australia and the south coast of New South Wales.

Figure A 4 South East Region ornamental fish consignments, by month, 2010–11



Source: DAFF

On average, this region received 57 consignments of imported ornamental fish per month in 2010–11 (Figure A 4). The IIGB examined import documentation for 11

consignments, observed entry management and quarantine inspections at regional offices and CTOs and observations at the four QAPs relevant to the consignment sample. The type and scale of business operated by the QAPs ranged from a wholesaler to a small aquarium shop. This provided the IIGB with insight into, and appreciation for, the activities taking place at DAFF regional office and the ornamental fish trade in general.

The South East Region inspection facility is located at the regional office, rather than the CTO, which is approximately 200 metres away.

In many ways, the South East Region is leading other regions in its inspection processes through the quality of its onsite inspection facility and the number of resources available to conduct inspections. The IIGB considers the region's facility observes best practice.

Two to three inspectors take part in the inspection of a consignment and a different inspector may attend the QAP to complete quarantine inspections. A dedicated administration team is responsible for scheduling appointments for inspections based on the availability and skills of inspectors. The IIGB observed an inspection where inspectors identified irregularities that resulted in the euthanasia of the fish.

During an inspection at one of the QAPs, the IIGB experienced at first hand the difficulties faced by DAFF inspectors to ensure that only one species is in a tank when inspecting tanks and bags containing large numbers of fish. A guppy was identified in a tank that should only have contained neon tetras (Figure A 5). This was immediately brought to the attention of the DAFF officer who subsequently issued a direction to hold the particular tank in quarantine for another five days.

Figure A 5 Guppy in a tank of neon tetras

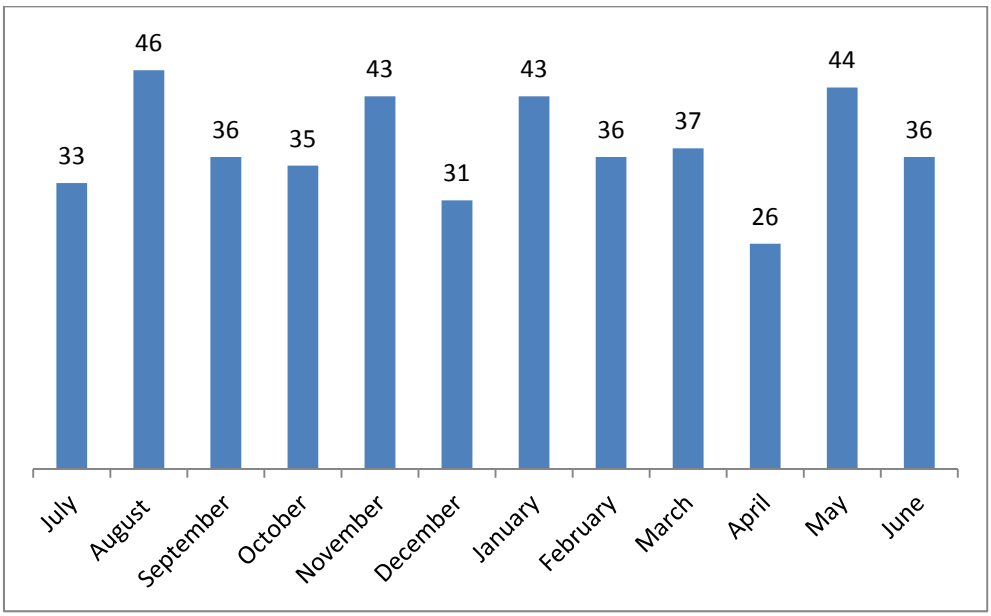
Source: IIGB 2011

North East Region (Brisbane office)

The region extends from Cardwell in Queensland to the far north coast of New South Wales and south to Grafton.

During 2010–11 the region received on average 37 consignments of ornamental fish per month (Figure A 6). The IIGB sampled nine consignments from four QAPs and inspected quarantine procedures at two QAP facilities.

Figure A 6 North East Region ornamental fish consignments, by month, 2010–11



Source: DAFF

The four to five inspectors in the North East Region working on ornamental finfish imports have built up a good skill base given they receive fewer daily consignments of ornamental fish than other types of commodities. The team is responsible for managing workload, including scheduling inspection appointments.

The IIGB observed how a consignment was received by the cargo terminal operator (CTO) and the processes inspectors followed to verify the consignment and documentation. Usually the consignment is inspected by a lead inspector and a second inspector. The lead inspector is responsible for a consignment from entry into Australia to release from quarantine. The IIGB noted that inspectors have to use considerable effort to lift bags containing fish high enough to facilitate proper inspection. Physical strength, sufficient knowledge and experience in fish identification and the adequacy of inspection facilities are crucial elements in an effective inspection and identification process.

The second part of the IIGB observations related to on-site visits to the QAPs. Only two of the four QAPs were inspected due to the geographic dispersion of the QAPs across the region. During QAP visits the IIGB observed quarantine activities conducted by the QAP operator and by the inspectors. Inspectors examine the tank

records for a specific consignment for indications of unacceptably high mortality rates during the quarantine period. Inspectors use the information gathered to decide whether to destroy, hold or release the fish from quarantine. Subsequent release or destruction directions are passed on to the QAP operator. The IIGB noted that tank records play an important part in decision-making.

Unlike the South West Region, North East Region inspectors do not keep tank records on DAFF quarantine files but rely instead on tank records maintained by the QAP operator. The tank records are reviewed when inspectors undertake quarantine inspections. Heavy reliance appears to be placed on the diligence of QAP operators in conducting their business. Once inspectors leave the premises operators could potentially switch fish between tanks or between the shopfront and the quarantine areas. During inspections at QAPs, inspectors cannot count each individual fish and need to rely on tank records to indicate numbers.

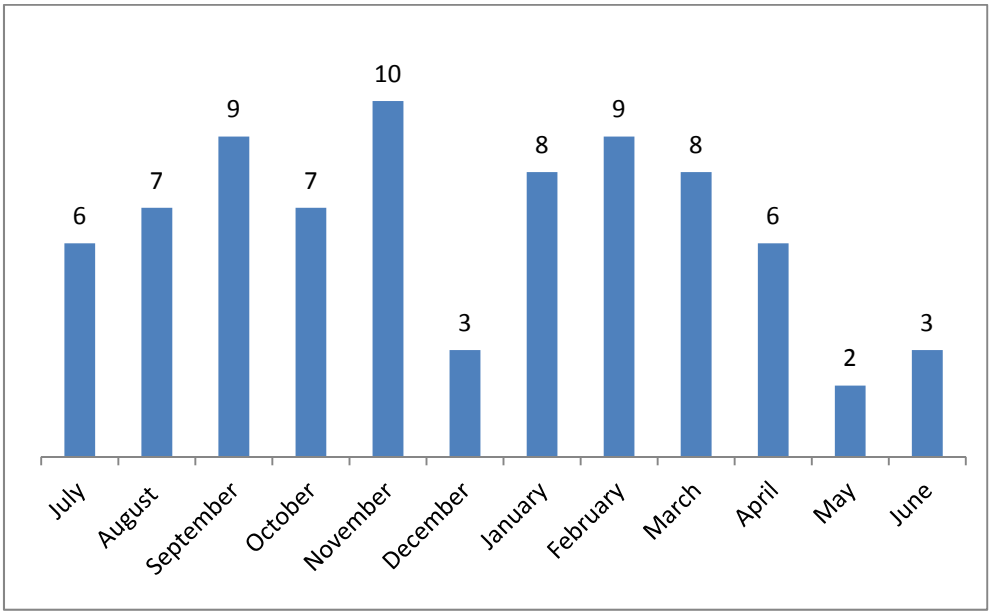
The IIGB identified the need for consistent use of a cover sheet on consignment files kept by the regional offices. The cover page provides a one-page snapshot of the movement and actions of the particular consignment. Further examination identified inconsistencies regarding what should and should not be kept on file. There were also inconsistencies between the information on file and in AIMS.

South West Region (Perth office)

The region extends from south of Broome in Western Australia, to South Australia (excluding the Riverland) and the area around Broken Hill, New South Wales.

This region does not receive significant numbers of imported ornamental finfish. It was therefore selected as a potential risk area due to the infrequent number of inspections. During 2010–11 the South West Region received on average seven consignments of ornamental finfish per month (Figure A 7). The IIGB selected five consignments as part of this audit.

Figure A 7 South West Region ornamental fish consignments, by month, 2010–11



Source: DAFF

The South West region has a very small team experienced in conducting ornamental fish inspections. One team member is dedicated to this commodity. Most training takes place in the field, with a more experienced inspector guiding other officers during inspections. Having a dedicated team member provides a degree of continuity in maintaining knowledge and skills. However, the potential risk of relying on the expertise of a specific individual is the loss to the region of valuable corporate knowledge should the officer be absent or leave DAFF.

Because of the limited number of consignments coming into Perth, the IIGB was not able to observe an inspection by regional officers at the CTO. However, the IIGB inspected and observed procedures at two QAPs selected as part of the sample. The IIGB was able to confirm the completeness of import documentation for the sampled consignments relating to each QAP.

The IIGB's examination of import documentation uncovered an instance of a non-permitted species incorrectly cleared for release. As with the other regions included in the case study, tank records are not kept on DAFF files.

Appendix B List of agencies and groups consulted by the Interim Inspector - General of Biosecurity

Agency/group	Function/responsibility
DAFF Animal Biosecurity (Aquatics)	Responsible for the formulation, development and implementation of strategic initiatives, including delivery of whole-of-continuum programs
DAFF Animal Import Operations Branch	Responsible for operational aspects of live animal and genetic material imports. Functions include issuing import permits, provision of technical advice to internal and external stakeholders and audit and verification activities
DAFF Industry Arrangements and Performance Branch	Sets policy, manages and coordinates the standards and national delivery of third-party biosecurity arrangements in Australia and overseas in consultation with industry. Provides: • support for biosecurity service delivery activities in the provision of scientific advice • compliance and performance management services to import clearance operations nationally
DAFF regional offices in Perth, Brisbane and Melbourne	Provide quarantine services for the clearance of cargo, mail, vessels and passengers at the Australian border
Operators of quarantine approved premises in Brisbane, Melbourne and Perth areas	Persons who provide post-arrival quarantine services in Class 7.1 quarantine approved premises

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