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Performance Audit

Administration of the Northern Australia Quarantine Strategy

Department of Agriculture, Fisheries and Forestry

Australian National Audit Office

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Australian National Audit Office

Canberra ACT
20 June 2012

Dear Mr President
Dear Mr Speaker

The Australian National Audit Office has undertaken an independent performance audit in the Department of Agriculture, Fisheries and Forestry with the authority contained in the Auditor-General Act 1997. I present the report of this audit and the accompanying brochure to the Parliament. The report is titled *Administration of the Northern Australia Quarantine Strategy*.

Following its presentation and receipt, the report will be placed on the Australian National Audit Office's Homepage—http://www.anao.gov.au.

Yours sincerely

Ian McPhee
Auditor-General

The Honourable the President of the Senate
The Honourable the Speaker of the House of Representatives
Parliament House
Canberra ACT

AUDITING FOR AUSTRALIA

The Auditor-General is head of the Australian National Audit Office (ANAO). The ANAO assists the Auditor-General to carry out his duties under the *Auditor-General Act 1997* to undertake performance audits, financial statement audits and assurance reviews of Commonwealth public sector bodies and to provide independent reports and advice for the Parliament, the Australian Government and the community. The aim is to improve Commonwealth public sector administration and accountability.

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Abbreviations

ANAO	Australian National Audit Office
BioSIRT	Biosecurity Surveillance, Incident, Response and Tracing
DAFF	Department of Agriculture, Fisheries and Forestry
DFAT	Department of Foreign Affairs and Trade
DIAC	Department of Immigration and Citizenship
IML	Information Management Library
JOGs	Joint Operation Group forums
KPI	Key performance indicator
NAQS	Northern Australia Quarantine Strategy
NMC	NAQS Management Committee
NSC	NAQS Steering Committee
OCPPO	Office of the Chief Plant Protection Officer
OCVO	Office of the Chief Veterinary Officer
PBS	Portfolio Budget Statements
QRM	Quarantine Risk Material
SOPs	Standard Operating Procedures
SPZ	Special Quarantine Zone
TSPZ	Torres Strait Protected Zone

Glossary

BioSIRT	BioSIRT is a Biosecurity Surveillance, Incident, Response and Tracing software application. It has been developed for use across Australia for the management of information and resources used to manage animal or plant diseases or pests and emergency responses to incursions.
Quarantine Risk Material (QRM)	According to the *Quarantine Proclamation 1998*, the following items are considered quarantine risk material and cannot be moved from the TSPZ to the SQZ or from either zone to mainland Australia without a permit: live animals; meat products; dairy and egg products; untreated hides and feathers; animal products; soil; fresh fruits and vegetables; and plants.
Special Quarantine Zone (SQZ)	The zone established under s.5A of the *Quarantine Act 1908*, being the area bounded by the line described in the July 2000 Notice of Declaration of a Special Quarantine Zone.
State/Territory Government Biosecurity Agencies	In the context of the NAQS program, these agencies include the: Queensland Department of Employment, Economic Development and Innovation; Northern Territory Department of Resources; and Western Australian Department of Agriculture and Food.
Torres Strait Protected Zone (TSPZ)	The zone established under Article 10 of the Torres Strait Treaty, being the area bounded by the line described in Annex 9 of the Treaty.
Torres Strait Treaty	An agreement between Australia and Papua New Guinea (endorsed in 1978) that describes the boundaries between the two countries, outlines how the sea area may be used and governs Torres Strait traditional movements.

Summary and Recommendations

Summary

Introduction

1. Australia's biosecurity system aims to minimise the risk of entry, establishment or spread of exotic pests, weeds and diseases that have the potential to cause significant harm to Australia's unique environment and economy. Australia is presently free of many of the biosecurity threats that have had major environmental and economic consequences for other countries.[1] Maintaining this favourable biosecurity status is particularly important to Australia's $32 billion agricultural export industry.

2. The Department of Agriculture, Fisheries and Forestry (DAFF) has primary responsibility for managing Australia's biosecurity system, which involves a continuum of pre-border, border and post-border activities. These activities form a multi-layered approach that DAFF uses to manage, rather than eliminate, biosecurity risks. According to this approach, detecting an exotic pest, weed or disease within Australia is not a failure of the system if it is detected early and dealt with quickly.

3. Generally, the Australian Government has regulatory responsibility for the pre-border and border elements of the biosecurity continuum, while state and territory governments have responsibility for post-border activities, such as surveillance and response activities. The Australian Government does, however, retain responsibility for some post-border activities, such as those delivered under the Northern Australia Quarantine Strategy.

Northern Australia Quarantine Strategy

4. The Northern Australia Quarantine Strategy (NAQS) was established in 1989 as an early detection and warning system to address the unique biosecurity risks that face Australia's northern region. Northern Australia is particularly vulnerable to biosecurity threats because of its close proximity to Indonesia, Timor Leste and Papua New Guinea, which have different pest and disease statuses to Australia. The objectives of the NAQS program are to: identify and evaluate the unique quarantine risks facing northern Australia;

[1] Examples of exotic pests and diseases that are established to Australia's north include: screw-worm fly, which is established in Papua New Guinea; citrus canker, which is established in Indonesia and Papua New Guinea; and foot and mouth disease, which is widespread in parts of Asia.

develop and implement measures for the early detection of targeted pests and diseases; contribute to national and international initiatives that target relevant pests and diseases; and manage the quarantine aspects of border movements through the Torres Strait.

5. NAQS operates in coastal regions of northern Australia, covering approximately 10 000 kilometres from Broome, Western Australia to Cairns, Queensland, including the islands of the Torres Strait (see Figure S.1).

Figure S.1

NAQS zone

Source: DAFF.

6. NAQS is responsible for helping to address biosecurity risks related to specified pathways in northern Australia, including movements of:

- exotic pests, weeds and diseases via feral animals, migrating birds, water currents and monsoon winds across northern Australia;
- quarantine risk material[2] via traditional visitors from Papua New Guinea to the Torres Strait; and
- quarantine risk material via vessels and aircraft through the Torres Strait and from the Torres Strait to mainland Australia.

[2] According to the *Quarantine Proclamation 1998*, the following items are considered quarantine risk material and cannot be moved from the Torres Strait Protected Zone to the Special Quarantine Zone or from either zone to mainland Australia without a permit: live animals; meat products; dairy and egg products; untreated hides and feathers; animal products; soil; fresh fruits and vegetables; and plants.

7. Monitoring these pathways is challenging in northern Australia because the coastline is vast, remote and sparsely populated. In addition, the risk of an exotic pest or disease establishing in the north is heightened by large numbers of feral animals and particular plant species, which provide potential hosts for pests and diseases. The Torres Strait islands also form potential 'stepping stones' for exotic pests, weeds and diseases from Papua New Guinea to mainland Australia.

8. Consistent with DAFF's risk-based approach to managing the biosecurity continuum, the NAQS program is implemented through:

- scientific surveillance activities designed to detect early signs of exotic pests, weeds and diseases;
- Torres Strait border operations aimed at reducing the risk of quarantine risk material entering the Torres Strait and mainland Australia from Papua New Guinea; and
- public awareness activities aimed at encouraging the public to report sightings of exotic pests, weeds and diseases and to comply with quarantine restrictions that apply to Torres Strait border movements.[3]

9. Under this approach, scientific surveillance and border management activities are supported by public awareness activities.

Scientific surveillance activities

10. Guided by target lists of high-risk pests, weeds and diseases, NAQS scientific officers undertake a range of animal and plant surveillance activities across northern Australia and the Torres Strait each year. These activities include: monitoring migratory birds, cattle herds and feral and domestic animal populations for the presence of new animal diseases; monitoring fruit fly traps; and conducting regular plant surveys for signs of exotic weeds, insect pests and plant diseases. In 2010–11, the NAQS program made 16 detections, including vegetable leafminer, papaya fruit fly and biting midge in the Torres Strait, and gray leaf spot in mainland Australia. Once NAQS officers detect the presence of an exotic pest, weed or disease, they are required to notify the

[3] In addition to these core functions, NAQS maintains strategic collaborations with state and territory biosecurity agencies and provides input into national biosecurity measures of direct relevance to NAQS responsibilities. The program also engages Indigenous ranger groups, which, for the purposes of the report, is discussed alongside public awareness activities.

relevant state or territory government biosecurity agency that is responsible for response activities, in addition to Australian Government authorities.[4]

Torres Strait border movements

11. DAFF manages the quarantine aspects of Torres Strait border movements between: Papua New Guinea and the Torres Strait Protected Zone (TSPZ); the TSPZ and the Special Quarantine Zone; and either zone and mainland Australia.[5] The Torres Strait Treaty governs the movement of traditional visitors from Papua New Guinea to islands in the TSPZ, and the *Quarantine Act 1908* governs the quarantine aspects of all movements into and between zones in the Torres Strait and into mainland Australia. DAFF restricts the movement of quarantine risk material related to Torres Strait border movements by: informing traditional visitors and vessel and aircraft operators about quarantine and notification requirements; inspecting traditional visitor arrivals and the vessels and aircraft that carry people and cargo southward through the Torres Strait; detecting and seizing quarantine risk material; and managing non-compliance with notification requirements.

Public awareness and Indigenous engagement

12. To assist in the delivery of the NAQS program across the northern coastline of Australia, DAFF promotes public awareness of biosecurity issues and engages Indigenous ranger groups to undertake scientific surveillance and public awareness support activities. The NAQS program's public awareness campaign—*Quarantine Top Watch!* aims to encourage the public to monitor and report exotic pests, weeds and diseases and to comply with border movement requirements. The department uses a range of public awareness activities to communicate the quarantine message, such as direct community engagement activities and the distribution of promotional products.

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[4] The Chief Veterinary Officer and the Chief Plant Protection Officer within DAFF are required to be notified of significant findings and detections related to animal and plant health.

[5] The border responsibilities of the NAQS program are specific to traditional visitor movements from Papua New Guinea to the Torres Strait and southbound people and cargo movements on vessels and aircraft from the Torres Strait to mainland Australia. The DAFF Biosecurity Passengers and Seaports programs are responsible for international aircraft and vessel movements, including those that occur in the NAQS zone.

Administrative arrangements

13. Since its inception in 1989, the NAQS program has been administered by DAFF under various delivery models.[6] The NAQS program is currently delivered within DAFF Biosecurity's[7] Northern Region and is administered from the department's regional office in Cairns.[8] The 2011–12 program budget is $12.8 million and is delivered by 68 DAFF officers[9], including 22 animal and plant health scientists and 23 border operations staff, of which 20 are Aboriginal and Torres Strait Islander. Indigenous officers help the department to build and maintain relationships with local communities.

14. To support the delivery of the NAQS program, DAFF collaborates with government and non-government bodies, including local councils and Indigenous communities. The department has also established resource-sharing arrangements with the Department of Immigration and Citizenship (DIAC) and the Australian Customs and Border Protection Service.

Audit objective, criteria and scope

15. The objective of the audit was to assess the effectiveness of the Department of Agriculture, Fisheries and Forestry's administration of the Northern Australia Quarantine Strategy. The ANAO examined whether the department had established effective:

- administrative and governance arrangements to support NAQS;
- processes for identifying biosecurity risks and conducting scientific activities to address identified risks;

[6] Major changes to the delivery of NAQS include modifications to the model and location of program delivery. Between 1989 and 1995, the program received funding from the Australian Government and was operated by the Queensland, Western Australia and Northern Territory governments. In 1995, a staged transition began, with responsibility moving from the states and territories to the Australian Government. From 2004 to 2009, NAQS was administered centrally from DAFF's office in Canberra.

[7] During the course of the audit, the Australian Quarantine and Inspection Service was replaced with DAFF Biosecurity, in line with changed organisational arrangements within the department.

[8] Since July 2009, DAFF Biosecurity has been delivered through five regions across Australia. The five regions comprise: South East; Central East; South West; North East and Northern.

[9] This equates to 64 full-time equivalent positions.

- arrangements for managing the quarantine aspects of Torres Strait border movements; and
- public awareness activities that reflect identified biosecurity risks and support the program's objectives.

16. The audit did not examine DAFF's arrangements for managing the response to biosecurity emergencies when exotic pests, weeds and diseases are detected post-border.

Overall conclusion

17. Australia is presently free of many pests and diseases that have had major economic and environmental consequences for other countries. This favourable biosecurity status is particularly important to Australia's $32 billion agricultural export industry. However, Australia's expansive northern coastline and its proximity to neighbouring countries, such as Papua New Guinea and Indonesia, make it vulnerable to exotic pests, weeds and diseases that can be carried by migrating birds, human activities and wind currents to the mainland.

18. In 1989, the NAQS program was established within DAFF to respond to the unique biosecurity risks that face Australia's northern region. NAQS aims to facilitate the early detection of pests, weeds and diseases across northern Australia, covering approximately 10 000 kilometres of coastline from Broome, Western Australia to Cairns, Queensland, including the islands of the Torres Strait. The program is implemented through three core elements: scientific surveillance; Torres Strait border operations; and public awareness.

19. In 2011–12, NAQS was delivered by approximately 68 officers, located at 21 locations across the NAQS zone. Since mid-2009, NAQS has reported 33 detections, including 17 targeted exotic pests and diseases, which were reported to state, territory and Australian Government biosecurity stakeholders. NAQS is a mature program that is widely recognised as playing an important role in Australia's national biosecurity system by assisting to safeguard Australia's animal and plant health status.

20. In general, DAFF has implemented effective arrangements to administer the NAQS program in line with the department's risk-based approach to biosecurity. These arrangements support the delivery of the program's diverse scientific and border operations activities. Systems and processes have been established to identify and review biosecurity risks and to

target the delivery of animal and plant health scientific surveys. The department also has arrangements in place to manage the quarantine aspects of Torres Strait border movements, which focus on maintaining an ongoing presence in the Torres Strait, informing stakeholders of their quarantine responsibilities and undertaking inspections to limit the movement of quarantine risk material. In recent years, the department has formalised and more clearly articulated the program's public awareness strategies to reflect biosecurity risks and strengthened its relationships with key stakeholders, particularly Indigenous communities. Underpinning these arrangements is a sound governance framework.

21. There are, however, aspects of the program that could be improved to better inform management decision-making and to enable the department to demonstrate the achievements of the NAQS program. These include: better managing scientific data; improving the integrity of border operations data; and further strengthening the department's arrangements for measuring and reporting NAQS performance.

Management of scientific data

22. It is critical to the success of NAQS that data collected during scientific surveys is effectively managed and that specimens are identified correctly in a timely manner. This is particularly important for significant findings and detections where notification to biosecurity authorities may be required. DAFF uses a range of in-house and external diagnostic facilities to identify and verify field samples. While DAFF has established processes to manage plant and animal samples, the department is yet to establish an effective mechanism to track the more complex and time-consuming diagnostic activities required to identify insect pests and plant diseases. Enhancing the existing arrangements to track these samples through the identification process would help the department to ensure that all samples are appropriately identified, accurately recorded and, where necessary, reported in a timely manner.

23. Weaknesses were also identified in the department's management of scientific data. Data entry activities are not adequately monitored and capacity constraints identified in the functionality of the NAQS Database limit the storage and use of survey data and diagnostic results. These issues further impede DAFF's ability to monitor and manage diagnostic data and adversely impact the effectiveness of the department's management of surveillance activities. While the proposed migration to a new data-sharing platform is expected to address some of these issues, improvements to the management of

scientific data would better place the department to meet the quality and timeliness expectations of the program's biosecurity stakeholders.

Integrity of border operations data

24. NAQS border operations involve inspecting southbound movements of traditional visitors and vessels and aircraft in the Torres Strait and seizing quarantine risk material. DAFF collects data on the number of border inspections conducted and the number of quarantine risk material items seized on a monthly basis. The inspection data for aircraft movements were generally accurate and supported by a quality assurance process. However, the inspection data for traditional visitors and vessel movements were generally inaccurate and, in some cases, incomplete. These data integrity issues were compounded by a lack of quality assurance processes.

25. Given the inaccuracies in the inspection data for traditional visitor and vessel movements, it would be prudent for the department to develop quality assurance processes to help improve the integrity of border operations data. While recognising that there are cultural and environmental challenges in collecting complete and accurate data for traditional visitor movements[10], the same cannot be said for vessel movements.

26. Further, although DAFF collects data on notified arrivals, the department does not use this information to calculate inspection and seizure rates. Analysing border operations data to determine inspection and seizure rates would provide the department with more meaningful information to inform management decisions regarding border operations, particularly the priority given to inspection activity across the 15 Torres Strait islands where NAQS officers are located and the allocation of limited resources. It would also enable baselines to be established and trends in the performance of NAQS border operations to be monitored over time.

Performance measurement and reporting

27. While NAQS is a mature program, it has been challenging for DAFF to develop a comprehensive performance measurement and reporting framework, and, in particular, a core set of performance indicators that adequately cover the diverse activities of the program. In recent years, DAFF

[10] Traditional visitor inspections are generally conducted on island beaches in an uncontrolled and rugged environment, and in some instances, large numbers of traditional visitors arrive at one time for cultural and religious events.

has made progress in developing performance indicators for NAQS, but there is scope to refine these indicators and strengthen the existing arrangements for monitoring and reporting the program's performance.

28. While the primary purpose of the NAQS program is generally understood within DAFF and reflected in the program's reported activities, the department has not articulated a clear objective for the program. The absence of a clear objective has made the development of performance measures more difficult. As part of the department's ongoing review of the program's performance measures, there would be merit in DAFF focusing on the establishment of a clear objective and initially developing a small number of key performance measures for each activity area that are aligned to the program's objective and supported by accurate performance data.

29. Focusing on the key aspects of the program's performance would better place the department to demonstrate program achievements and report on performance. This approach would also provide the foundation on which the department could systematically build the program's performance monitoring and reporting capacity over time.

30. The audit has made three recommendations designed to: strengthen arrangements for managing scientific surveillance data; improve the integrity of border operations data; and build a more comprehensive performance measurement and reporting framework.

Key findings by chapter

Managing Program Delivery (Chapter 2)

31. The revised organisational arrangements that have resulted in the delivery of NAQS within a single region—the Northern Region—has helped DAFF implement a more coordinated and streamlined approach to the administration of the program. Established management arrangements support this delivery model and oversight committees provide effective forums for progressing the strategic and operational priorities of the program. In particular, the introduction of the NAQS Steering Committee has helped provide DAFF senior management with greater visibility of the program and strengthened the relationship with business critical stakeholders. Strategic business planning processes, particularly the development of the annual Program Schedule, provide a sound basis for implementing the program. These oversight arrangements help to ensure that emerging risks and changes to the program's risk profile are identified and addressed in a timely manner.

32. The effective delivery of NAQS is reliant on the engagement of relevant program stakeholders, including state and territory government biosecurity agencies and Australian Government entities that assist the program through resource-sharing arrangements. DAFF maintains formalised arrangements with key stakeholders groups, which are commensurate with each stakeholder's level of influence over the delivery of the program. In recent years, the department has worked to strengthen relationships with state and territory government biosecurity agencies. These efforts have seen a maturing of these relationships and have placed DAFF in a sound position to manage NAQS within a whole-of-government context.

33. NAQS officers are supported in their roles through: access to a range of training opportunities, which are largely focused on operational activities; and the provision of instructional material, which is periodically reviewed to ensure it is fit-for-purpose. DAFF has also established a verification process to help ensure NAQS officers are performing activities in accordance with the standards established in instructional material. The verification process provides coverage of core NAQS activities and, in 2010–11, did not identify any significant issues with the practices adopted by NAQS officers. Verification processes provide DAFF with an appropriate level of assurance that NAQS officers are performing activities in accordance with agreed standards.

Scientific Surveillance Activities (Chapter 3)

34. The NAQS program uses a range of risk assessment methodologies to identify exotic pests, weeds and diseases in the development of target lists and risk ratings for the 40 risk areas of the NAQS zone. The target lists and risk area ratings are maintained through annual assessments and the conduct of comprehensive reviews, which involve key stakeholders and specialists from state and territory government biosecurity agencies. This risk-based approach provides a practical basis for implementing scientific surveillance work, determining resource allocations and planning survey activity.

35. The conduct of surveillance activities is a well-established aspect of the program and is heavily reliant on the corporate and specialist knowledge held by senior staff. In recent years, the department has used a number of different reporting formats to document survey findings, with variable completion rates. DAFF currently requires officers to complete pre- and post-survey reports. The completion of post-survey reports is particularly important as

they assist in the planning of future surveillance activities and the revision of guidance material on survey methodology and succession planning.

36. DAFF uses a range of in-house and external diagnostic facilities to identify and verify field samples and has an established process in place for reporting suspect pests and diseases and confirmed detections that generally meet the expectations of the program's key biosecurity stakeholders. While there is a mechanism to track the progress of animal and plant samples, the department is yet to establish an effective mechanism to track the progress of diagnostic activities and timeframes for the identification of insect pests and plant diseases. Timely diagnostic processes are particularly important as subsequent notification to biosecurity agencies may be required for significant findings. Capacity and functionality constraints identified in the NAQS Database further limit the department's ability to monitor and manage diagnostic and data entry activities, which ultimately impacts on the effectiveness of the department's management of surveillance activities.

Torres Strait Border Movements (Chapter 4)

37. DAFF is responsible for managing the quarantine aspects of: traditional visitor movements between Papua New Guinea and the TSPZ; and vessel and aircraft movements between the Torres Strait and mainland Australia. This work primarily involves conducting inspections and seizing any quarantine risk material. While DAFF does not mandate a particular number of inspections that NAQS officers are to conduct, which is consistent with the DAFF's risk-based approach to border operations, the department attempts to inspect as many border movements as possible. The ANAO's analysis indicated that, in 2010–11, NAQS officers inspected approximately 43 per cent of traditional visitor movements, 68 per cent of Cairns vessel movements and 80 per cent of Cairns aircraft movements.

38. The number of inspections conducted is influenced by the number of NAQS officers available to conduct, at times, large numbers of inspections and the extent to which traditional visitors and vessel and aircraft operators comply with arrival and notification requirements. In those cases where operators fail to comply with notification requirements, DAFF manages and addresses non-compliance incidents through an escalated approach. In 2010–11, three non-compliance incidents were referred to DAFF's Compliance and Investigations Team, with each incident considered to involve minor non-compliance.

39. The collection of border operations data in the Torres Strait is challenging because of limited IT access and rugged working conditions. While the inspection data for aircraft movements were found to be generally accurate and supported by a quality assurance process, the inspection data for traditional visitors and vessel movements were found to be generally inaccurate and, in some cases, incomplete. These issues were compounded by a lack of quality assurance processes. Further, although DAFF collects data on notified arrivals, the department does not use this information to calculate inspection and seizure rates. This further analysis would enable DAFF to monitor trends and performance over time and would better inform management decision-making regarding the deployment of staff and the prioritisation of inspection activity. Improving quality assurance processes would also provide greater assurance regarding the integrity of border operations data.

Public Awareness and Indigenous Engagement (Chapter 5)

40. The implementation of NAQS public awareness activities is characterised by a multi-layered and integrated delivery approach that is targeted to specific stakeholders across the NAQS zone. This delivery model helps ensure that public awareness messages reach key stakeholders.

41. While public awareness has been an important component of the NAQS program, until recently, the delivery of public awareness activities was not supported by a documented communication strategy. A review of NAQS public awareness activities in 2010 provided the basis for the development of the program's Communication Strategy and annual Communication Implementation Plan. DAFF is currently finalising the Strategy, and the Implementation Plan was recently endorsed by the NAQS Management Committee.

42. DAFF has recently taken steps to improve the monitoring of public awareness activities, including: the identification of additional methods to monitor the performance of awareness-raising activities; and the development of performance indicators to assess the effectiveness of public awareness activities. These developments will better place the department to assess the effectiveness of public awareness activities and to help ensure that limited resources are deployed appropriately.

43. Indigenous ranger groups play an important role in supporting the delivery of NAQS through biosecurity support activities and building

relationships with local communities. Since 2006, the approach to engaging Indigenous ranger groups has been formalised under annual fee-for-service contracts. While there are a range of challenges in managing agreements with 38 ranger groups across a geographically diverse area, the department has adopted a pragmatic approach that generally supports the achievement of program objectives. A key component of this approach has been mentoring and training Indigenous ranger groups to address varying levels of capacity. There are, however, aspects of the department's work with ranger groups that require effective oversight, including the extent to which agreed activities are completed and invoiced. Improved monitoring of contracted activities would assist the department to identify constraints to the completion of agreed activities and to effectively target capacity-building activities.

Measuring and Reporting Performance (Chapter 6)

44. An effective measurement and reporting framework requires a clear, well-defined program objective and a set of performance measures that cover key aspects of program delivery, underpinned by accurate cost-effective performance information. While the current NAQS objective identifies key program activities, it does not clearly articulate the primary purpose of the program, which has made developing performance measures for the NAQS program more difficult. As part of its ongoing review of the performance management framework for NAQS, it would be timely for the department to also review the program objective to ensure that it clearly articulates the intended purpose of the program.

45. While there have been challenges in developing performance measures for the diverse range of activities delivered under the program, DAFF has recently revised performance measures for border operations and developed measures for scientific surveillance and public awareness activities. The department has proposed a large number of potential performance measures, which, in some cases, measure activity rather than performance. As the maintenance of a large number of performance measures can be costly and time-consuming, there would be merit in the department initially focusing on a small number of key performance measures that align to the program objective. This would provide a foundation on which the department could build its performance reporting capacity over time. Enhancing the integrity of border operations data and developing quality assurance processes will further strengthen DAFF's ability to accurately report program performance.

46. DAFF has established mechanisms for reporting program activities to internal and external stakeholders, including monthly performance summaries to the DAFF executive and key stakeholders, half-yearly status reports to the NAQS Steering Committee and a high-level narrative on the program in the departmental annual report. Addressing the identified shortcomings in the current framework for measuring and reporting performance would enable the program to more effectively demonstrate its achievements.

Summary of agency response

47. The proposed report was provided to DAFF for formal comment. DAFF provided the following summary response, with the full response included as Appendix 1.

> The department welcomes the ANAO's acknowledgement that *'DAFF has implemented effective arrangements to administer the NAQS program in line with the department's risk-based approach to biosecurity*' noting the unique and challenging operating environment in which program services are delivered. The department further notes the ANAO's statement that *'underpinning these arrangements is a sound governance framework*'.
>
> The department accepts the ANAO's findings that there are some aspects of the program that could be improved but notes that there is no evidence that suggest that these aspects have in any way compromised the effectiveness of NAQS' Biosecurity activities. The department agrees that the suggested improvements will better inform management decisions on certain issues and will enable the department to better demonstrate the achievements of the NAQS program.

Recommendations

Recommendation No 1

Para 3.54

To improve the effectiveness of scientific surveillance activity, particularly in relation to the plant science disciplines, the ANAO recommends that the Department of Agriculture, Fisheries and Forestry strengthen existing arrangements for recording, monitoring and reporting survey and diagnostic data.

DAFF response: *Agreed.*

Recommendation No 2

Para 4.52

To provide meaningful data to inform border management decisions and measure performance, the ANAO recommends that the Department of Agriculture, Fisheries and Forestry:

- improve quality assurance processes to help ensure that border operations data are accurate and complete; and
- analyse border operations data to calculate inspection and seizure rates and establish baselines for each Torres Strait arrival pathway.

DAFF response: *Agreed.*

Recommendation No 3

Para 6.28

To inform management decisions and improve accountability, the ANAO recommends that the Department of Agriculture, Fisheries and Forestry:

- articulate a clear objective for NAQS;
- build on current work to develop performance measures that assess the extent to which NAQS is achieving this objective; and
- collect and analyse relevant and accurate performance data.

DAFF response: *Agreed.*

Audit Findings

1. Background and Context

This chapter provides background information on Australia's biosecurity system and the Northern Australia Quarantine Strategy. It also outlines the audit's objective, criteria, scope and methodology.

Australia's biosecurity system

1.1 Australia's biosecurity system aims to minimise the risk of entry, establishment or spread of exotic pests, weeds and diseases that have the potential to cause significant harm to Australia's unique environment and economy. Australia is presently free of many of the biosecurity threats that have had major environmental and economic consequences for other countries. Maintaining this favourable biosecurity status is particularly important to Australia's $32 billion agricultural export industry.

1.2 The Department of Agriculture, Fisheries and Forestry (DAFF) has primary responsibility for managing Australia's biosecurity system, which involves a continuum of pre-border, border and post-border activities. These activities form a multi-layered approach that DAFF uses to manage, rather than eliminate, biosecurity risks. According to this approach, detecting an exotic pest, weed or disease within Australia is not a failure of the system if it is detected early and dealt with quickly.

1.3 Generally, the Australian Government has regulatory responsibility for the pre-border and border elements of the biosecurity continuum, while state and territory governments have responsibility for post-border activities, such as surveillance and response activities. The Australian Government does, however, retain responsibility for some post-border activities, such as those delivered under the Northern Australia Quarantine Strategy.

Northern Australia Quarantine Strategy

1.4 The Northern Australia Quarantine Strategy (NAQS) was established in 1989 as an early detection and warning system for addressing the unique biosecurity risks that face Australia's northern region.[11] Northern Australia is

[11] NAQS was established in response to the Quarantine Review Committee's 1987 and 1988 reports, which recommended that a strategy be established to: assess quarantine risks; respond to changing circumstances; prevent incursions and quarantine breaches; and detect incursions as soon as possible.

particularly vulnerable to biosecurity threats because of its close proximity to Indonesia, Timor Leste and Papua New Guinea, which have different pest and disease statuses to Australia.[12] NAQS operates in coastal regions of northern Australia, covering approximately 10 000 kilometres from Broome, Western Australia to Cairns, Queensland, which includes the islands of the Torres Strait (see Figure 1.1).

Figure 1.1

NAQS zone

Source: DAFF.

1.5 Exotic pests and diseases of particular concern to northern Australia include:

- screw-worm fly—a fly that breeds in wounds on mammals and causes extensive tissue damage. It is established in Papua New Guinea;
- exotic fruit fly—a fly, such as the papaya fruit fly, that lays eggs in unripe fruit, where larvae hatch and feed on the fruit pulp. It is established in Indonesia and Papua New Guinea;
- foot and mouth disease—a highly infectious viral disease that can affect cattle, sheep, deer and pigs. The disease is widespread in parts of Asia,

[12] For example, Saibai Island in the Torres Strait is only 3.73 km from Papua New Guinea, which is known to have exotic pests and diseases, such as screw-worm flies, varroa mites (a pest of honey bees) and citrus canker.

however, Australia has been free of foot and mouth disease since 1872; and

- citrus canker—a bacterial disease that attacks the leaves and fruit of citrus trees, reducing the growth of new fruit and spoiling healthy fruit. It is established in Indonesia and Papua New Guinea.

1.6 NAQS is responsible for helping to address biosecurity risks related to specified pathways in northern Australia, including movements of:

- exotic pests, weeds and diseases via feral animals, migrating birds, water currents and monsoon winds across Australia's northern border;
- quarantine risk material (QRM) via traditional visitors from Papua New Guinea to the Torres Strait; and
- QRM via vessels and aircraft through the Torres Strait and from the Torres Strait to mainland Australia.

1.7 Monitoring these pathways in northern Australia is challenging because the coastline is vast, remote and sparsely populated. In addition, the risk of an exotic pest or disease establishing in the north is heightened by large numbers of feral animals and particular plant species, which provide potential hosts for pests and diseases. The Torres Strait islands also form potential 'stepping stones' for exotic pests, weeds and diseases from Papua New Guinea to mainland Australia.

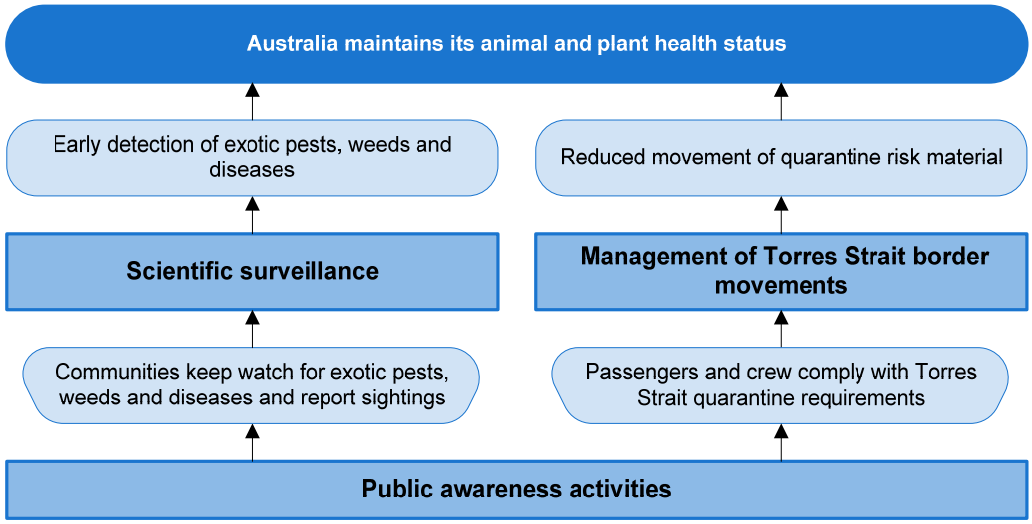
1.8 The NAQS program's contribution to addressing the unique biosecurity risks facing northern Australia is implemented through:

- scientific surveillance activities designed to detect early signs of exotic pests, weeds and diseases;
- border operations aimed at reducing the risk of QRM entering the Torres Strait and mainland Australia from Papua New Guinea; and
- public awareness activities aimed at encouraging early reporting of exotic pests, weeds and diseases and to comply with quarantine restrictions related to Torres Strait border movements.

1.9 Under this approach, scientific surveillance activities and Torres Strait border management are supported by public awareness activities, as illustrated in Figure 1.2.

Figure 1.2

Integrated approach to addressing biosecurity risks in northern Australia



Source: ANAO analysis of DAFF data.

1.10 In addition to these core functions, NAQS maintains strategic collaborations with state and territory biosecurity agencies and provides input into national biosecurity measures of direct relevance to NAQS responsibilities. DAFF also engages Indigenous ranger groups to extend and support scientific surveillance and public awareness activities.

Scientific surveillance activities

1.11 Guided by target lists of high-risk pests, weeds and diseases, NAQS officers undertake a range of animal and plant surveillance activities across northern Australia's mainland and the Torres Strait each year. These activities include: monitoring migratory birds, cattle herds and feral and domestic animal populations for the presence of new animal diseases; monitoring fruit fly and screw-worm fly traps; and conducting regular plant surveys for signs of exotic weeds, pests and plant diseases. In 2010–11, the NAQS program made 16 detections.[13]

[13] For example, in 2010–11, NAQS detections included the: vegetable leafminer; papaya fruit fly and biting midge in the Torres Strait; and hibiscus chlorotic ringspot virus and gray leaf spot in mainland Australia.

1.12 Once NAQS officers detect the presence of an exotic pest, weed or disease, nominated DAFF stakeholders and the relevant state or territory authority must be notified. State and territory biosecurity agencies are responsible for response and eradication activities.

Torres Strait border movements

1.13 To help reduce the risk of exotic pests, weeds and diseases entering the Torres Strait and mainland Australia from Papua New Guinea, DAFF manages quarantine aspects of border movements and restricts the southward movement of QRM between defined zones in the Torres Strait and from the Torres Strait to mainland Australia.[14] NAQS does this by: maintaining a presence in the Torres Strait; informing traditional visitors and vessel and aircraft operators about quarantine and notification requirements; inspecting traditional visitor arrivals and vessels and aircraft that carry people and cargo from the Torres Strait to mainland Australia; seizing QRM; and managing non-compliance with notification requirements.

1.14 DAFF is responsible for managing the quarantine aspects of border movements between Papua New Guinea and the Torres Strait Protected Zone (TSPZ) and between the Torres Strait (including the TSPZ and the Special Quarantine Zone) and mainland Australia.[15] As illustrated in Figure 1.3, some TSPZ islands are only a few kilometres from Papua New Guinea.

[14] According to the *Quarantine Proclamation 1998*, the following items are considered quarantine risk material that cannot be moved from the Torres Strait to mainland Australia without a permit: live animals; meat products; dairy and egg products; untreated hides and feathers; animal products; soil; fresh fruits and vegetables; and plants.

[15] The TSPZ was established under Article 10 of the Torres Strait Treaty; it covers the area bounded by the line described in Annex 9 of the Treaty. The SQZ was established under s.5A of the *Quarantine Act 1908*; it covers the area bounded by the line described in the July 2000 Notice of Declaration of a Special Quarantine Zone.

Figure 1.3

Quarantine zones in the Torres Strait

Source: DAFF.

1.15 The only movements permitted between Papua New Guinea and the TSPZ are traditional movements under the Torres Strait Treaty. Under this Treaty, residents of 13 Papua New Guinean coastal villages are permitted to travel without a passport for traditional activities in the TSPZ. Activities that are defined as traditional under the Treaty include hunting, trading and attending ceremonies. All other movements across this border are considered international and must meet routine customs, immigration and quarantine requirements applicable to other international arrivals.[16]

Public awareness and Indigenous engagement

1.16 To assist in the delivery of the NAQS program across the northern coastline of Australia, DAFF promotes public awareness of biosecurity issues and engages Indigenous ranger groups to undertake scientific and public awareness support activities.

1.17 The NAQS program's public awareness campaign—*Quarantine Top Watch!*—aims to encourage the public to monitor and report exotic pests,

[16] Non-traditional movements from Papua New Guinea and all movements from Indonesia and Timor Leste to Australia are handled by the DAFF Biosecurity Seaports and Passengers programs.

weeds and diseases and to comply with border movement requirements. DAFF uses a range of public awareness activities to communicate the *Quarantine Top Watch!* message, such as direct community engagement activities and the distribution of promotional products.

1.18 Indigenous ranger groups are engaged on an annual fee-for-service basis to undertake a range of biosecurity support activities, such as bat colony mapping, monitoring for marine debris and public awareness activities.[17] The groups also facilitate access to Indigenous-held land for scientific surveys and help maintain relationships with local communities, who are well placed to identify and report suspect pests, weeds and diseases. In 2011–12, 38 Indigenous ranger groups were engaged.

Administrative arrangements

1.19 Since its inception in 1989, the NAQS program has been administered by DAFF under various delivery models.[18] The NAQS program is currently delivered within DAFF Biosecurity's[19] Northern Region and is managed from the department's regional office in Cairns. Since July 2009, DAFF Biosecurity has been delivered through five regions across Australia, as shown in Figure 1.4.

1.20 The NAQS management team in Cairns is responsible for the delivery of policy and program management, as well as operational aspects of the program. The Program Director reports to the Darwin-based Northern Region Regional Manager, who reports on NAQS business to the Quarantine Operations Division in Canberra.

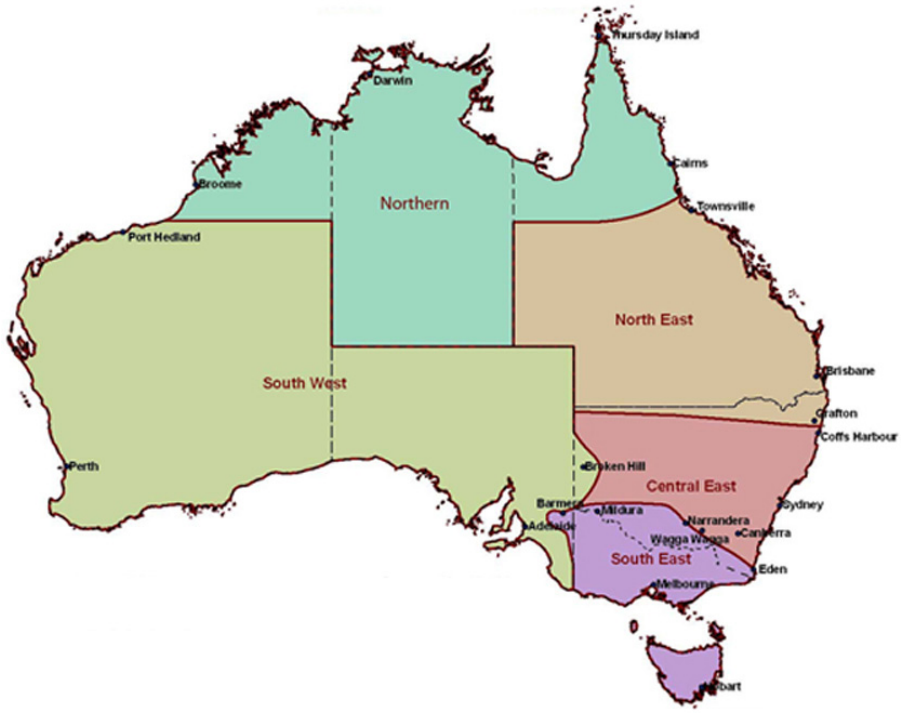
[17] Contracts are delivered in line with government funding and priorities.

[18] Major changes to the delivery of NAQS include modifications to the model and location of program delivery. Between 1989 and 1995, the program received funding from the Australian Government and was operated by the Queensland, Western Australia and Northern Territory governments. In 1995, a staged transition of responsibility began, moving from the states and territories to the Australian Government. From 2004 to 2009, NAQS was administered centrally from DAFF's office in Canberra.

[19] During the course of the audit, the Australian Quarantine and Inspection Service was replaced with DAFF Biosecurity, in line with changed organisational arrangements within the department.

Figure 1.4

DAFF Biosecurity's regional boundaries



Source: DAFF.

1.21 The 2011–12 NAQS Program Schedule[20] identifies the NAQS program objective as: identifying and evaluating the unique quarantine risks facing northern Australia; developing and implementing measures for the early detection of targeted pests and diseases; contributing to national and international initiatives that target relevant pests and diseases; and managing the quarantine aspects of border movements through the Torres Strait.

Budget and resources

1.22 The NAQS program has a budget of $12.8 million for 2011–12 and is delivered by approximately 68 officers, equating to 64 full-time equivalents. The NAQS team includes: five officers in the Animal Health Team and 17 professional scientists in the Plant Health Team staff located across six mainland offices—Cairns, Weipa, Bamaga, Gove, Darwin and Broome. NAQS border operations staff are located on 15 Torres Strait islands and at

[20] The Program Schedule provides a high-level description of NAQS projects and priorities for the financial year.

three mainland offices. Of the 23 NAQS officers in the Torres Strait and the Northern Peninsula Area, 20 are Aboriginal and Torres Strait Islander.

1.23 To support the delivery of the NAQS program, DAFF collaborates with government and non-government bodies, including local councils and Indigenous communities. The department has also established resource-sharing arrangements with the Department of Immigration and Citizenship and the Australian Customs and Border Protection Service.

Previous reviews

1.24 While the NAQS program has not been the subject of previous ANAO audits, the biosecurity system more broadly and the effectiveness of the NAQS program have been subject to a number of recent reviews.

1.25 In February 2008, the Minister for Agriculture, Fisheries and Forestry appointed an independent panel, chaired by Mr Roger Beale AO, to conduct a comprehensive review of Australia's quarantine and biosecurity systems (the Beale Review). The panel's September 2008 report, *One Biosecurity: A Working Partnership—The Independent Review of Australia's Quarantine and Biosecurity Arrangements Report to the Australian Government,* made 84 recommendations aimed at extensively reshaping the framework and delivery of Australia's biosecurity systems. The report made one recommendation directed at NAQS, which related to expanding the program's mandate to include coverage of at-risk areas around international airports, seaports and vulnerable areas of Australia's northern coastline. In response, the Government advised that it intended to implement the recommendation, in consultation with partner organisations.

1.26 In 2007, DAFF engaged Ernst & Young to undertake an independent review of the cost efficiency and effectiveness of quarantine border security strategies and policies. The report, *Australian Quarantine and Inspection Service—Review of Quarantine Border Security Strategies and Polices*, covered a number of DAFF programs, including NAQS. The review recommended that NAQS develop meaningful performance indicators and more robust performance measures for the program.[21] At the May 2008 Senate Estimate

[21] Ernst & Young, *Review of Quarantine Border Security Strategies and Policies*, August 2007, pp. 4, 10.

hearings, DAFF stated that it had established indicators to monitor activities and the effectiveness of these activities.[22]

Audit approach

Audit objective, criteria and scope

1.27 The objective of the audit was to assess the effectiveness of the Department of Agriculture, Fisheries and Forestry's administration of the Northern Australia Quarantine Strategy.

1.28 The ANAO examined whether DAFF has established effective:

- administration and governance arrangements;
- processes for identifying biosecurity risks and conducting scientific activities to address identified risks;
- arrangements for managing the quarantine aspects of Torres Strait border movements; and
- public awareness activities that reflect identified biosecurity risks and support the program's objectives.

1.29 The audit focused on the period from 1 July 2009 (when the management of NAQS was transferred to the Northern Region) to 31 March 2012. The audit did not examine DAFF's arrangements for managing the response to biosecurity emergencies when exotic pests, weeds and diseases are detected post-border.

Audit methodology

1.30 The audit methodology comprised:

- reviewing and analysing DAFF data and documentation, such as policies, standard operating procedures, work instructions and memoranda of understanding with partner agencies;
- interviewing DAFF staff, partner agency staff, industry representatives and scientists; and
- observing the delivery of NAQS operations including: a plant health survey in the Daintree National Park; sentinel herd management in

[22] Senate Estimates Hansard, *Rural and Regional Affairs and Transport*, 26 May 2008, p. 179.

northern Cape York and Eastern Arnhem Land; fruit fly trap monitoring throughout the Torres Strait; vessel, aircraft, passenger and cargo inspections in the Torres Strait and Cairns; and public awareness activities undertaken across the NAQS zone.

1.31 The audit was conducted in accordance with ANAO Auditing Standards at a cost of $535 000.

1.32 The report structure is outlined in Figure 1.5.

Figure 1.5

Report structure

1. Background and Context

- Australia's biosecurity system
- Northern Australia Quarantine Strategy
- Previous reviews
- Audit approach

2. Managing Program Delivery

- Introduction
- Governance arrangements
- Relationships with partner agencies
- Staff training

3. Scientific Surveillance Activities

- Introduction
- Identifying biosecurity risks and planning survey activity
- Conducting scientific surveillance activities

4. Torres Strait Border Movements

- Introduction
- Traditional visitor movements from Papua New Guinea
- Vessel and aircraft movements
- Conclusion

5. Public Awareness and Indigenous Engagement

- Introduction
- Public awareness
- Engagement of Indigenous ranger groups

6. Measuring and Reporting Performance

- Introduction
- Program objective
- Performance measures
- Performance data
- Reporting performance
- Conclusion

Source: ANAO.

2. Managing Program Delivery

This chapter examines the arrangements that DAFF has in place to support the management of the NAQS program with a focus on governance arrangements, relationships with partner agencies and staff training.

Introduction

2.1 The NAQS program delivers a diverse set of activities across a vast geographical area and in partnership with a range of stakeholder groups. In this context, sound program administration arrangements are particularly important to support the achievement of program objectives. The ANAO examined the arrangements DAFF has in place to manage NAQS, particularly the:

- governance arrangements, including the NAQS annual planning process;
- relationships with partner agencies; and
- staff training.

Governance arrangements

2.2 Since the inception of NAQS in 1989, the program has been administered under various delivery models.[23] As a result of organisational changes that took effect within DAFF on 1 July 2009, NAQS is currently delivered under one regional structure—the Northern Region.[24] While the Northern Region is located within the department's People and Service Delivery Division, the Quarantine Operations Division has specific responsibility for the management of NAQS.[25]

[23] Major changes to the delivery of NAQS include modifications to the model and location of program delivery. Between 1989 and 1995, the program received funding from the Australian Government and was operated by the Queensland, Western Australia and Northern Territory governments. In 1995, a staged transition of responsibility began, moving from the states and territories to the Australian Government. From 2004 to 2009, NAQS was administered centrally from DAFF's office in Canberra.

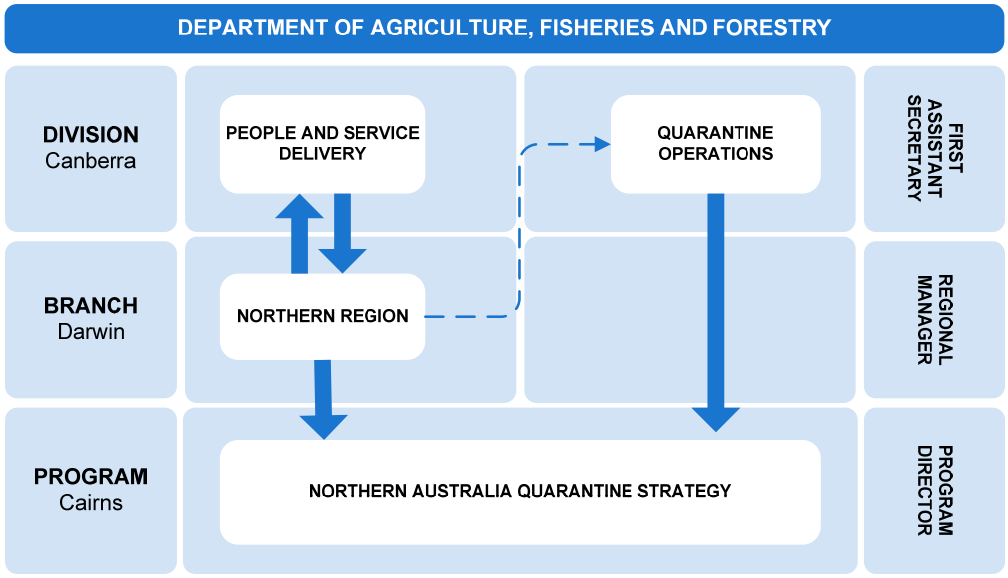
[24] Prior to the organisational changes of 1 July 2009, responsibility for the administration of the NAQS program was allocated across the following regions: the Australian Capital Territory; the Far North; and the Northern Territory, which also included NAQS activities in Western Australia.

[25] The People and Service Delivery Division is responsible for the delivery of support services for biosecurity and regional business operations.

2.3 The day-to-day delivery of NAQS is the responsibility of a program management team based in Cairns.[26] The Program Director reports directly to the Darwin-based Northern Region, Regional Manager, who in turn, reports to the Quarantine Operations Division in Canberra for NAQS business. This devolved delivery approach is illustrated in Figure 2.1.

Figure 2.1

NAQS organisational structure



Source: ANAO analysis of DAFF data.

2.4 DAFF indicated that the management of NAQS within one region has enabled better coordination of priorities and has streamlined decision-making within the program. DAFF also considers that the current program delivery model provides a greater appreciation among NAQS officers of the program's delivery environment, in particular, the variable climate and vast geography and better aligns management decisions with their operational impact.

2.5 A number of NAQS-specific business practices have been adopted to help support the devolved delivery model, including: the establishment of a NAQS Steering Committee, discussed below; the publication and distribution of the NAQS Monthly Performance Report to internal DAFF stakeholders and

[26] The NAQS program management team includes the: Program Director, with ultimate responsibility for the delivery of the program; Director—Operations; Director—Animal Health Surveillance; and Director—Plant Health Surveillance.

industry representatives[27]; and regular visits to Canberra by senior NAQS program officers.

Internal management structures

2.6 To manage and support the administration of the NAQS program, the NAQS Steering Committee (NSC) was established in 2009. This committee complements the existing NAQS Management Committee (NMC), which is responsible for overseeing the day-to-day management of the program.[28]

2.7 The NSC is a consultative forum that meets biannually to provide input into high-level matters impacting the strategic direction of NAQS. As of December 2011, the NSC has met on four occasions. The NSC is chaired by the First Assistant Secretary—Quarantine Operations, with secretariat functions provided by the NAQS Program Director. NSC membership comprises the:

- First Assistant Secretary—Quarantine Operations, Regional Manager—Northern Region and the NAQS Program Director;
- Office of the Chief Plant Protection Officer (OCPPO) and Office of the Chief Veterinary Officer (OCVO);
- senior representatives of Western Australia, Northern Territory and Queensland government biosecurity agencies; and
- representatives of Animal Health Australia and Plant Health Australia.

2.8 The NMC is the key decision-making body on NAQS policies and operations. A review of the meeting minutes for the period October 2010 to November 2011 indicated the strong operational focus of the committee including the monitoring of: operational plan delivery[29]; verification activities; instructional material development; budget; and resource management.

2.9 The NMC has provided a national focus for the operation of the program. The committee is chaired by the NAQS Program Director, with

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[27] The NAQS Monthly Performance Report is discussed further in Chapter 6.

[28] In addition to these committees, the delivery of NAQS is guided by a number of task-specific meetings that are convened periodically, including: team meetings; scientific discipline-specific and cross discipline meetings; remote area operations meetings; and designated work group meetings for Work Health and Safety.

[29] The operational plan is a logistical planning tool that sets out scientific surveillance and public awareness activities to be delivered over the financial year. It is discussed in more detail in Chapter 3.

secretariat functions provided by the NAQS Strategy and Governance team.[30] DAFF informed the ANAO that the NMC has recently increased the frequency of its meetings from quarterly to bi-monthly to ensure minimal delay in responding to issues requiring action from the committee.

2.10 The NSC and NMC interact on several levels. The Program Director is a member of both committees and is able to provide consistent information about the program to both committees. The NSC provides broad oversight of the NMC, which is achieved through status updates provided to the NSC on progress against the NAQS Program Schedule.

NAQS annual planning process

2.11 The delivery of NAQS activities is guided by a program schedule (also referred to as the business plan), which is prepared annually and provides a high-level description of NAQS priorities and service objectives for the financial year. The Program Schedule is developed in accordance with DAFF's established reporting requirements, using the department's planning template. The schedule comprises four sections: overview and structure, including resources; key projects; priorities, measures of success and key milestones; and risk management.[31]

2.12 Both the NSC and NMC are involved in the development, delivery and monitoring of the Program Schedule. The NMC coordinates the development of, and receives progress reports against, the schedule. High-level progress against the schedule is also reported at each NSC meeting.

2.13 Progress towards the delivery of the major projects listed in the Program Schedule is monitored through the NAQS Program Priority Register. The register is maintained over financial years and is updated on an ongoing basis. Copies of the schedule and priority register are routinely included in the agenda papers for each NMC meeting.

Managing business risk

2.14 In delivering the NAQS program, two different and distinct types of risk are managed: business risks, which include challenges and impediments

[30] NMC membership comprises the: NAQS program management team; Director of Strategy and Governance; Director of Torres Strait and Northern Peninsula Area; Director of Northern Territory and Western Australia; and DAFF communications officer.

[31] The responsible NAQS officer is assigned to each specific milestone and timeframes are also established.

that may impact on program success if allowed to materialise; and biosecurity risks, associated with safeguarding Australia's favourable plant and animal health status. The latter risk is examined in Chapter 3.

2.15 NAQS business risks are articulated in the Program Schedule and are reviewed periodically throughout the financial year. Risks are assessed using departmental risk management methodologies, with relevant risk mitigation strategies and treatments applied. Of the seven business risks identified for 2011–12, four had a residual risk rating of medium and three had a rating of low.[32] Risks contained in the 2011–12 Program Schedule were broadly reflected in the 2011–12 Quarantine Operations Division business plan and included: ongoing assistance from third parties; resources; and data management. However, DAFF did not allocate responsibility for risk mitigation activities in the NAQS Program Schedules for 2010–11 and 2011–12. The allocation of responsibility helps to ensure that risks are effectively managed on an ongoing basis.

2.16 Business risks identified in the Program Schedule are monitored by the NMC, with risk treatments routinely discussed during committee meetings. For example, Work Health and Safety, an issue identified as a risk in the current and previous two program schedules, appears as a standing item for discussion on the NMC agenda.

Conclusion

2.17 The revised organisational arrangements that have resulted in the delivery of NAQS within a single region—the Northern Region—has helped DAFF implement a more coordinated and streamlined approach to the administration of the program. Established management arrangements support this delivery model and oversight committees provide effective forums for progressing the strategic and operational priorities of the program. In particular, the introduction of the NAQS Steering Committee has helped provide DAFF senior management with greater visibility of the program and strengthened the relationship with business critical stakeholders. These oversight arrangements help to ensure that emerging risks and changes to the program's risk profile are identified and addressed in a timely manner.

[32] NAQS business risks broadly relate to: Work Health and Safety; financial capacity; instructional material; resourcing; access to third parties; community support; and intelligence.

2.18 NAQS strategic business planning processes, particularly the development and delivery of the Program Schedule provide a sound framework to guide the implementation of the program. Identified business risks are primarily managed through the NMC and NSC. Assigning responsibility to risk mitigation strategies will help ensure that risks are appropriately monitored and managed.

Relationships with partner agencies

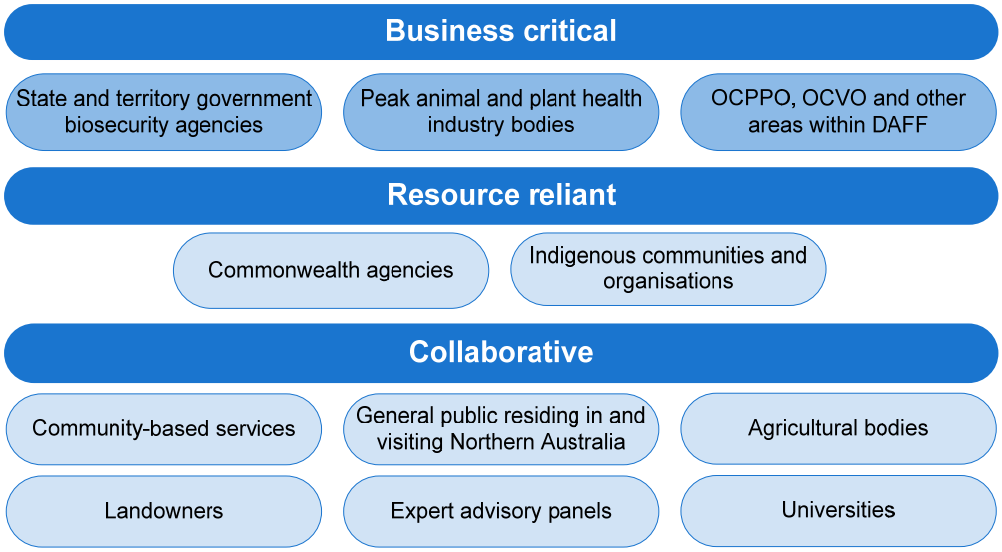
2.19 In managing biosecurity risks across northern Australia, NAQS works in partnership with a number of organisations, including other Australian Government agencies, state and territory government biosecurity agencies, industry groups, expert advisory panels and communities. These relationships are critical to the successful delivery of program outcomes. DAFF has recognised the importance of gaining assistance from program stakeholders, with the NAQS Program Schedule 2011–12 identifying three business risks relating to engaging with stakeholders.

2.20 The NAQS program's stakeholders are categorised as follows:

- business critical—stakeholders directly involved in the delivery of the program;
- resource reliant—where NAQS relies on the cooperation and resource support from stakeholders to perform program activities; and
- collaborative—where NAQS provides a support role through its contribution to broader national and international biosecurity activities (Figure 2.2 broadly outlines the NAQS program's various stakeholder groups).

Figure 2.2

NAQS stakeholder groups



Source: ANAO analysis of DAFF data.

Business critical partners

2.21 NAQS officers maintain close working relationships with stakeholders identified as critical to the successful delivery of the program. This is primarily achieved through the operation of the NSC and the provision of the NAQS Monthly Performance Report. DAFF has also implemented additional arrangements to support relationships with state and territory government biosecurity agencies.

Working with states and territories

2.22 NAQS works collaboratively with state and territory government biosecurity agencies located across the Northern Region. This relationship is based on the shared responsibility for undertaking post-border scientific surveillance activities across northern Australia. NAQS officers engage with state/territory counterparts through a number of forums including: the NSC; Joint Operation Group forums; and bilateral meetings. In addition, NAQS and state/territory officers periodically work together to deliver scientific surveillance activities.

Joint Operation Group forums

2.23 Joint Operation Group forums (JOGs) originated in Queensland over a decade ago. The groups were initially established to support collaboration with

the numerous stakeholders involved in delivering related biosecurity activities in Cape York. While JOGs also existed in Western Australia and the Northern Territory, they generally operated in a more informal manner than the Queensland JOG arrangements. In July 2010, the NSC aligned the operation of JOGs in Western Australia and the Northern Territory to the model adopted in Queensland.

2.24 JOGs aim to facilitate consultation between NAQS and relevant state and territory government biosecurity agencies at the operational and technical level. The purpose of these forums is to: identify areas for collaborative surveillance activity; share information and intelligence data; and identify efficiencies in service delivery, with a focus on technical and operational (non-policy) matters. In practice, the operation of JOGs varies in each state and territory, given the differing organisational and governance structures, with arrangements tailored to meet local requirements. To help ensure a consistent approach across the various agencies, the NSC has: endorsed an Interagency Consultation Framework, which sets out the arrangements governing the operation of JOGs; and approved the proposed JOGs terms of reference.[33]

2.25 Senior managers of biosecurity in Queensland, Western Australia and the Northern Territory informed the ANAO that JOGs play an important role in managing biosecurity surveillance issues across the region. These stakeholders generally indicated that JOGs are an effective forum to facilitate collaborative work between agencies.

Bilateral meetings

2.26 Members of the NAQS management team and senior managers of respective state and territory government biosecurity agencies participate in bilateral meetings to inform collaborations between jurisdictions. Bilateral meetings take place at least once every year and follow a less formal structure than JOGs. For example, bilateral meetings are not supported by terms of reference. The development and subsequent endorsement by the NSC of the Interagency Consultation Framework has, however, established additional formality and structure for bilateral meetings by setting out the meeting requirements, including timing and officer participation.

[33] The terms of reference were approved pending consideration of any written comments.

Resource reliant partners

2.27 Stakeholder relationships are particularly important in the Torres Strait islands where NAQS relies on the cooperation and resource support of other Australian Government agencies to undertake scientific surveillance and border management functions. This is particularly the case for: the reciprocal use of resources, primarily staff, between NAQS and the Department of Immigration and Citizenship[34]; and the use of Border Protection Command's assets.[35] These arrangements are formalised through memoranda of understanding, which define the framework for working cooperatively.

Collaborative stakeholders

2.28 To manage the program's collaborative stakeholders, NAQS officers have developed a register of stakeholder engagement and collaboration activities. The register records the program's collaborative input. DAFF indicated that the register helps to prioritise future areas of cooperation, in the context of NAQS resource availability and scope of scientific responsibility. The register identifies 30 groups that NAQS collaborates with, which are predominately science-based collaborations and include the provision of resources and scientific advice. Collaborative activities also feature as a standing item on the NSC agenda, with the committee providing oversight of these activities. Typically, stakeholder engagement is not underpinned by formal arrangements, but is maintained through informal and ongoing communications.

Conclusion

2.29 To maintain program capacity and assist in achieving objectives, NAQS maintains relationships with a range of stakeholders involved in biosecurity across Australia. Collectively, the management of the NAQS program's various stakeholder groups is commensurate with each stakeholder's level of influence over program success. This is a reasonable management approach given the number and diversity of NAQS stakeholders.

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[34] The Memorandum of Understanding between DAFF and the Department of Immigration and Citizenship has been in place since July 2004.

[35] Border Protection Command is a multi-agency taskforce that utilises assets from Australian Customs and Border Protection Service and the Department of Defence to conduct civil maritime operations.

2.30 In recent years, the NAQS program has worked to strengthen relationships with respective state and territory government biosecurity agencies through the operation of JOGs and the conduct of bilateral meetings. These efforts have seen a maturing of the arrangements underpinning these relationships and were generally supported by state and territory counterparts. The NAQS program's existing arrangements to engage with state and territory governments place NAQS in a sound position to manage the program within a whole-of-government context.

Staff training

2.31 NAQS officers often work in unique and challenging conditions, such as in tropical climates and remote areas, and perform a diverse set of functions, ranging from scientific surveillance to public awareness activities. The success of NAQS in achieving program outcomes is largely reliant on well-trained and supported staff. For NAQS officers this includes: access to training; sufficient instructional material; and a verification process to help ensure staff are adequately performing their duties.

Access to training

2.32 NAQS officers undergo a structured program of training to ensure they are prepared and equipped to manage potential hazards, possible injuries or becoming isolated when working in a range of challenging environments. This includes training associated with standard departmental capabilities alongside NAQS-specific technical training, which varies dependent on an officer's position and level. This includes training:

- to obtain required licences, such as firearm licences for animal surveillance activities;
- specific to NAQS field operations, such as 4WD and remote area operations training. This category of training is deemed mandatory and includes coverage of Work Health and Safety practices;
- that assists in building the capacity of officers, in particular NAQS scientists, and are discretionary in nature; and
- to increase staff awareness of NAQS products.

Work Health and Safety

2.33 Work Health and Safety is a high priority for NAQS and represents a significant business-level risk if not managed adequately.[36] Officers are advised of program-specific Work Health and Safety requirements through participation in training and access to various policies and manuals. NAQS officers' knowledge on a number of Work Health and Safety aspects, such as Senior First Aid, is required to be refreshed periodically to ensure officers' skills remain current. Records of these courses, and relevant licences, are maintained by DAFF and monitored by the NAQS management team. The case study on page 52 illustrates the support provided to NAQS officers when working in remote areas.

Instructional material

2.34 Guidance on how to perform NAQS activities is captured in a range of instructional material, including standard operating procedures, business policies, work instructions and job cards. Instructional material is tailored to specific NAQS activities and can be accessed on DAFF's Information Management Library (IML) on the department's intranet. DAFF advised that all NAQS officers, including those working in remote areas, have access to the IML.

2.35 Instructional material is systematically reviewed, which involves: consultation with various experienced NAQS officers as well as DAFF's corporate learning and development area; and approval by the Program Director and the Regional Manager. Updated versions of instructional material are provided to the DAFF IML team who load revised materials to the IML. The various types of instructional material are set out in Table 2.1.

[36] This risk was identified in the Program Schedules for 2009–10, 2010–11 and 2011–12.

Case Study

Working in Remote Areas

Source: ANAO.

An inherent Work Health and Safety risk faced by DAFF officers relates to work performed in remote locations, which may be some distance from medical and mechanical help. To support and prepare officers working in these conditions, officers must complete a series of training courses, including Remote Area Training, which is delivered by NAQS in conjunction with the 51st Battalion—Far North Queensland Regiment of the Australian Army. In addition, officers must also be familiar with the NAQS Remote Area Operations business policy. The development of this policy was informed by the Australian Defence Force and describes the procedures and business rules when undertaking NAQS activities in remote areas. NAQS officers advised that the policy has been adopted by other areas within DAFF for use in their respective work.

Table 2.1

NAQS instructional material

Instruction	Purpose	Example of use in NAQS
Standard operating procedure	Activities with a legislative basis must be supported by a standard operating procedure (SOP). As such, all NAQS SOPs relate to managing Torres Strait border movements. SOPs reflect the program's policy position in performing these activities.	Standard Operating Procedure for Clearance of Torres Strait Vessels
Business policy	Activities without a legislative basis are supported by a business policy, which follows a similar format to SOPs.	Remote Area Operations Business Policy
Work instruction	Work instructions underpin SOPs and business policies and provide specific instruction on how to perform particular activities.	Work Instruction on Screw-Worm Fly Trapping
Site-specific job cards	Site-specific job cards list the competencies required in performing a particular activity. It is primarily used during verification processes (see below) to ensure all relevant aspects of a task are performed.	Site-specific Job Card on NAQS Operations—Torres Strait Cargo

Source: ANAO analysis of DAFF documentation.

2.36 In 2010, DAFF prepared a 'gap analysis' of all the existing instructional material and training courses. The analysis assessed whether sufficient instructional material and training was in place for each level of NAQS officer, across each of DAFF's standard capabilities. This analysis highlighted a small number of deficiencies in the program's current suite of instructional material and training.[37]

2.37 Many of the NAQS instructional materials relate to managing border movements, with DAFF indicating that the development of instructional material for scientific surveillance is challenging. NAQS scientists, who typically perform these activities, are recruited with appropriate scientific qualifications relevant to the discipline-specific work. In relation to public awareness, while it was identified that an acceptable level of instructional material exists for developing and delivering public awareness information, the department considered that further training was required. DAFF informed the ANAO that it is addressing this identified gap through a number of mechanisms, including developing standard presentations and speaking notes for NAQS presenters. While the successful delivery of presentations is often reliant on the knowledge and experience of the presenter, guidance on delivering public awareness activities will help ensure that the presentations follow a consistent format and adequately cover the required content and distribution of public awareness products.

Verification processes

2.38 DAFF has established a verification process to provide assurance that instructional material is appropriate and is being interpreted and implemented consistently and correctly by departmental staff. NAQS officers undertake a range of verification activities relating to the program's core functions. Work Health and Safety is a high priority given the unique and challenging operating environment in which NAQS operations are delivered. The conduct of verification activities can take many forms, including: desk and data audits of administrative procedures; on-the-job checks performed by supervising staff; and equipment and asset checks against applicable maintenance procedures and manuals. The outcomes of verification activities are monitored

[37] For example, a manual for fruit fly monitoring and bait spraying was released after it was identified that a relevant instructional document was not available.

by NAQS managers, and in particular the NMC. Verification activities are a standing item on the NMC agenda.

2.39 A subset of verification activities relate to risks affecting the program's achievement of its overall objectives and are monitored at the departmental level each financial year. Typically, these include four to six business-critical verification activities. The outcomes and progress against these verifications are reported to DAFF through the departmental intranet to the Business Assurance Team of the Business Integrity Branch.[38]

Conclusion

2.40 NAQS officers are supported in their roles through: access to a range of training opportunities, which are largely focused on operational activities; and the provision of instructional material that is periodically reviewed and available through the DAFF intranet. While there have been some challenges in developing instructional material, the 'gap analysis' performed by NAQS officers in 2010 helped to identify and address deficiencies in the program's suite of instructional material and training. The department is currently addressing the identified gaps.

2.41 DAFF has also established a verification process to help ensure NAQS officers are performing activities in accordance with the standards established in instructional material. The verification process provides coverage of core NAQS activities and, in 2010–11, did not identify any significant issues with the practices adopted by NAQS officers. Verification processes provide DAFF with an appropriate level of assurance that NAQS officers are performing activities in accordance with agreed standards.

[38] Five verification activities were delivered in 2010–11, which assessed: fruit fly surveillance and response; screw-worm fly surveillance; Torres Strait clearances; firearms management; and remote area operations. No significant issues were identified and corrective action was largely directed towards clarifying procedures and enhancements to existing arrangements. Verification activities for 2011–12 included: Torres Strait clearances; Community Liaison Officer functions; NAQS field operations; and operational planning.

3. Scientific Surveillance Activities

This chapter examines the systems and processes that DAFF has in place to identify biosecurity risks and to plan and conduct scientific surveillance activities.

Introduction

3.1 Biosecurity surveillance involves activities to investigate the presence or prevalence of a pest, weed or disease in a given plant or animal population and its environment. Surveillance for incursions, and the possible establishment of pests and diseases, is undertaken to:

- increase the chance (and decrease the costs) of controlling and eradicating pests, weeds and diseases;
- test the effectiveness of pre-border and border activities; and
- support claims about Australia's pest and disease status when providing assurance to exporting countries.[39]

3.2 The NAQS program aims to facilitate the early detection of exotic pests, weeds and diseases through a suite of scientific surveillance activities. To deliver these activities, the program employs scientists across two fields:

- animal science—primarily veterinarians, dealing with animals, such as cattle, pigs, poultry and dogs; and
- plant science—comprising the three related disciplines of botany, entomology and plant pathology.[40]

Approximately one third of NAQS program staff are engaged to support the delivery of scientific surveillance. There are: five officers in the animal science area, including three veterinary officers located across each jurisdiction; and 17 officers supporting the NAQS plant science area, including senior scientists and support staff for each discipline located in Cairns and Darwin, and two entomology staff located in Broome.

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[39] Beale. R., et al, *One Biosecurity: A Working Partnership: The Independent Review of Australia's Quarantine and Biosecurity Arrangements Report to the Australian Government*, 2008, p.137.

[40] Botany is a branch of biology that involves the study of plants, their characteristics and properties. The identification of weeds is of primary importance to NAQS. Entomology is the study of insects (such as wasps, flies and moths), but in this context, can also include non-insects such as spiders and mites. Plant pathology is the study and diagnosis of plant diseases, including bacteria, fungi and viruses.

3.3 To determine the effectiveness of the administration of the program's scientific surveillance activities, the ANAO examined the processes and arrangements established to:

- identify biosecurity risks and plan survey activity; and
- conduct scientific surveillance activities.

3.4 The ANAO did not examine the scientific basis for the types of surveillance activities undertaken by NAQS or the arrangements for surveillance activity in neighbouring countries such as Indonesia, Timor Leste and Papua New Guinea. Responsibility for offshore surveillance activity was transferred to other areas within DAFF in July 2009.[41]

Identifying biosecurity risks and planning survey activity

3.5 A key priority of the NAQS program is to identify and evaluate the unique biosecurity risks facing northern Australia. The program has established a risk framework that includes: target lists of known exotic pests, weeds and diseases; and risk area ratings of the NAQS zone. This framework is used to guide the planning and delivery of surveillance efforts. Key elements of the framework are the: maintenance of target lists; ongoing review of NAQS risk area ratings; and planning of surveillance activities.

Maintenance of target lists

3.6 Established in the early 1990s, NAQS target lists document the key pests, weeds and diseases that are not currently present in Australia and are considered to be a serious threat to Australia's productivity, export markets and environment. Organisms on the NAQS target lists have an identified unregulated pathway into northern Australia via: suspected illegal entry vessels; foreign fishing vessels; illegal trade; unscheduled yacht landings; traditional trade in the Torres Strait; and natural transmission pathways, including migratory animal movements and windborne movements.[42] DAFF maintains target lists for the four scientific disciplines—animal, botany, entomology and plant pathology.

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[41] The Office of the Chief Plant Protection Officer and the Animal Health Policy area are now responsible for this function.

[42] This does not include consideration of conventional or regulated border pathways, such as international airports, which are managed by other DAFF programs.

3.7 Each organism on the target lists is considered to be of equally high priority. DAFF indicated that developing an order of priority within the list is not undertaken because of the technical complexity and subjective nature of the assessment, such as industry-specific concerns. However, given the large variety and diversity of exotic insects and diseases, primary and secondary target lists have been developed for entomology and plant pathology. Although surveillance strategies for each targeted organism differ, they are based on an assessment of risk, including considerations of the potential consequence of their establishment in Australia.

Application of the target lists

3.8 The target lists are the foundation of the NAQS scientific surveillance work and also provide a focal point for border management and public awareness activities. The detection of target-listed and unknown organisms is a critically important function of the NAQS program. DAFF advised that, while target lists provide a focus for scientific monitoring work, surveillance activity is not limited to organisms on the target list and work is also undertaken to identify unknown organisms and investigate a range of indicators of pests and diseases in the field.[43] New or unidentified plants, insects or diseases are also to be reported, regardless of whether they are on a target list.

Methodology for target list inclusion

3.9 The methodology used to determine whether an organism should be included on the target lists involves an assessment of the following criteria: probability of entry; probability of establishment; probability of spread after establishment; and potential significant adverse impact. If an organism meets most or all of the criteria, it will be considered for inclusion on the target list. A number of considerations underpin each of the criteria for NAQS target list inclusion, such as the method of spread, number of viable pathways and ecology of the pest or disease.[44] This methodology is broadly consistent with

[43] For example, in the animal discipline, clinical signs, such as mass mortalities or sick animals, are a useful indication of the presence of a disease. In the plant disciplines, damage to leaves and structural elements of a plant is also an indication of potential exotic diseases.

[44] NAQS target list criteria, available from: <http://www.daff.gov.au/aqis/quarantine/naqs/target-lists> [accessed on 18 April 2012].

the International Standard for Phytosanitary Measures (ISPM) and has been modified for the post-border surveillance work undertaken by NAQS.[45]

Annual and major reviews

3.10 The ongoing maintenance of target lists consists of:

- an annual review—conducted by NAQS scientists; and
- major reviews undertaken periodically—involving key stakeholders, such as state and territory counterparts and discipline experts.

3.11 The review of target lists is a standing item for the annual NAQS scientific discipline meetings. Annual reviews conducted in 2009, 2010 and 2011 resulted in the proposed removal of seven organisms and proposed addition of seven organisms across the lists, with documented rationale for the changes.[46] This process draws upon the expertise and experience of NAQS scientists, with external experts periodically invited to participate.

3.12 Major reviews involve a broader assessment of each scientific discipline using the criteria and considerations for target list inclusion. This assessment also takes into consideration a range of discipline-specific information, such as scientific literature, field activities, participation in external groups and input provided by discipline experts.[47] Over the life of the program, the target lists for each discipline have been subject to major reviews, as listed in Table 3.1.

[45] In particular, ISPM No.11 *Pest risk analysis for quarantine pests including analysis of environmental risks and living modified organisms*, May 2004, produced by the Secretariat of the International Plant Protection Convention.

[46] For example, if an exotic organism has been established in Australia, it is removed from the target list.

[47] Participants in recent reviews include representatives from state/territory government biosecurity agencies, the Office of the Chief Plant Protection Officer and the Office of the Chief Veterinary Officer.

Table 3.1

Major reviews of the NAQS target lists

Discipline	Major review involving external experts
Animal	2004 and 2011
Botany	1998 and 2008
Entomology	1999 and 2002
Plant pathology	1999 and 2002

Source: ANAO analysis of DAFF data.

3.13 In the most recent review, two changes were proposed to the animal target list.[48] The botany review, undertaken in 2008 by the then Bureau of Rural Sciences, assessed over 1000 weeds of tropical and Pacific origin and recommended the removal of three weeds from the target list. The entomology and plant pathology target lists have not been externally reviewed since 2002 because of: the high degree of complexity and cost involved; limited scientific literature especially in Papua New Guinea, Timor Leste and Indonesia; limited number of experts in the field; and time involved in engaging expert reviewers. While a full review would take many years, selective taxonomic reviews for entomology are currently being initiated.[49]

Ongoing review of NAQS risk area ratings

3.14 Since the early 1990s, the NAQS zone has been divided into a number of smaller areas, which are assigned risk ratings for animal and plant surveillance.[50] This risk-assessment framework underpins annual operational plans by guiding the frequency of surveillance activity. As shown in Figure 3.1, the NAQS zone is divided into 40 risk areas, with each area given a reference code relating to the state/territory and a number.

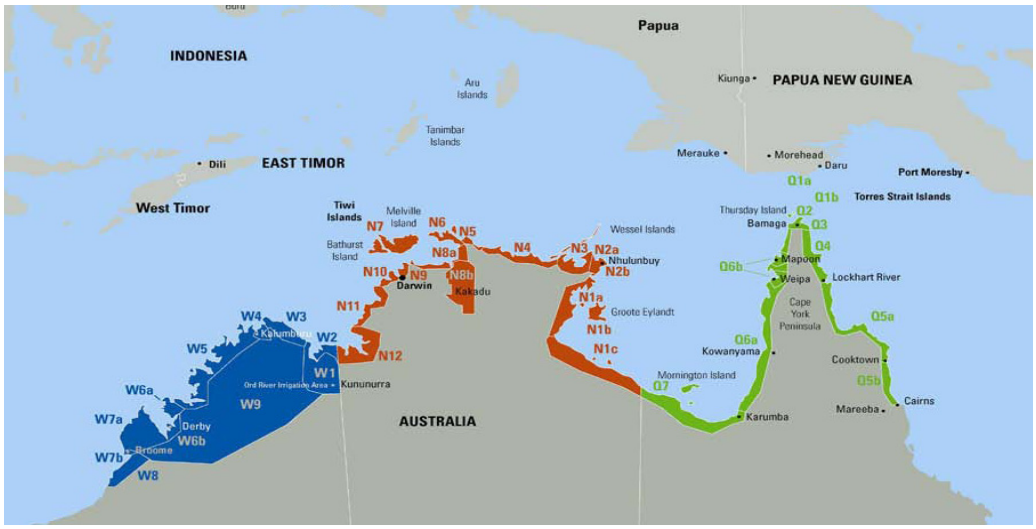
[48] DAFF advised that before the lists are amended, the proposed changes will be discussed with key stakeholders, including state/territory government biosecurity agencies, DAFF, health departments and industry groups, and endorsement will be sought from the NAQS Management Committee.

[49] For example, a proposal to review the inclusion of nematodes (round worms) was made in late 2011.

[50] Generally, an overall plant health rating is assigned as a composite rating for the three plant disciplines—botany, entomology and plant pathology.

Figure 3.1

NAQS risk areas



Source: DAFF.

3.15 According to DAFF, the risk areas are manageable areas for the purposes of conducting surveillance that feature similarities in geophysical characteristics, distributions of host populations and pathways for entry of target pests and diseases. The risk areas vary considerably in size and generally occupy the coastal region, with the exception of the Kakadu National Park (N8b), the Ord River irrigation region (W1) and the Kimberley pastoral region (W9), which extend further inland.[51]

3.16 For each risk area, a relative risk rating is assigned for animal and plant health and is categorised as: 'high,' 'medium,' 'low' or 'very low.' The risk ratings are based on an assessment of the general risk factors present, such as the level of visitation between communities and from tourists, historical foreign fishing vessel activity and discipline-specific factors.[52] The rating of each area guides the frequency of surveillance and, accordingly, risk areas with:

- 'high' risk ratings are surveyed on at least an annual basis;

[51] These areas capture the: higher rates of tourism activity in the Kakadu National Park; agricultural activity in the Ord River region, where new crop types are trialled; and extensive cattle populations across the Kimberley region.

[52] For example, plant health factors include whether there is horticulture present and a history of incursions, while animal health factors note the presence of domestic and feral animals.

- 'medium' risk ratings are surveyed every two to three years;
- 'low' risk ratings are surveyed every three to five years; and
- 'very low' risk ratings are surveyed once every five years.

3.17 DAFF advised that these frequencies are intended as guidance for operational planning purposes—other factors, such as specific pest and disease risks, may influence the frequency of surveillance activity. The majority of risk areas are assigned 'low' or 'very low' risk ratings for animal and plant health. Only three areas (Q1a, Q1b and Q2, in the Torres Strait and the northern area of Cape York) are determined to be 'high' risk areas for both animal and plant health.

Major reviews of the risk area ratings

3.18 While the risk ratings are reviewed annually by NAQS scientists, a more comprehensive review is undertaken periodically for the animal and plant health programs. These reviews employ a qualitative assessment methodology and aim to produce a relative risk rating posed by target list organisms. The outcome of risk area ratings has important implications for guiding the frequency and prioritisation of survey activity.

3.19 A comprehensive review of the animal risk area ratings was undertaken in 2004 and, in recognition of the changes to the regional risk profile[53], a review of the risk areas and the animal target list was conducted in September 2011.[54] DAFF indicated an intention to conduct animal reviews every three to four years.

3.20 A major review of the plant risk area ratings was last undertaken in 2004. Since then, a number of factors, such as new agricultural projects in Western Australia, have changed the risk profile of the region and, as a result, a comprehensive review of the plant risk ratings for the NAQS zone is now being considered. The botany risk area review will be undertaken separately from the other plant disciplines because of the discrete and discipline-specific

[53] This included the change in distribution of target pests and diseases, such as varroa mite (a pest of honey bees) and rabies, decreased frequency of illegal foreign fishing vessels sighted in Australian waters, increasing trade and people movements through the Torres Strait and an increasing national focus on biosecurity in northern Australia.

[54] This review was conducted through a workshop over three days and involved 15 participants, including representatives from state/territory governments and subject matter experts. Participants included five NAQS officers and representatives from other areas of DAFF, state/territory biosecurity agencies, the Australian Animal Health Laboratory and AusVet.

considerations. While DAFF is currently reviewing the assessment methodology for a selective risk area review of entomology and plant pathology, a date for the commencement of the review has not been determined.

Planning of surveillance activities

3.21 Senior scientists from each discipline are primarily responsible for planning the survey activity to be undertaken in each jurisdiction of the NAQS zone. Survey planning typically commences at least six months before each financial year and is guided by the target lists, risk area ratings and the history of survey frequency. These plans are approved by line managers and consolidated into the annual operational plan, which is then approved by the NAQS Management Committee.

3.22 The schedule of surveys set out in the operational plan is also determined by a range of resource considerations. DAFF indicated that international survey activities often receive priority in operational planning, as these activities provide an important opportunity to gain information about exotic pests and diseases and are considered a highly valued training exercise. Government/departmental priorities and services delivered on behalf of industry groups and state governments are also considered when allocating resources.[55] Other considerations for planning fieldwork include weather and seasonal factors, such as the wet and dry seasons, staff availability and the availability of agency assets (such as vehicles).[56]

3.23 The operational plan also includes administrative information for monitoring progress against survey activities, including a unique identifier code for each activity and the completion of reporting requirements, such as the pre- and post-activity reports. Over the three years examined by the ANAO, the plans have been refined and show an increasing level of detail and sophistication, such as the inclusion of Indigenous ranger group activities and detailed costing information for individual activities. These refinements will

[55] NAQS collects sentinel herd blood samples for Animal Health Australia's National Arbovirus Monitoring Program and contributes to the Fruit Fly Surveillance program in the Torres Strait on behalf of the Queensland Government's biosecurity agency. In 2011–12, these activities were partially cost recovered.

[56] Animal health survey activity generally occurs during the dry season, when there is easier access to feral animal populations, while plant activity is more prevalent in the wet season, when plant diseases are more recognisable.

assist DAFF to monitor and track the diverse activities undertaken by the NAQS program.

Conclusion

3.24 The NAQS program uses a range of risk-based methodologies to identify and evaluate exotic pests, weeds and diseases in the development of target lists and risk area ratings of the NAQS zone. While the lists have remained relatively stable over the life of the program, comprehensive reviews and ongoing annual assessments assist in maintaining the currency of the lists. The involvement of key stakeholders and specialists from state/territory government biosecurity agencies and relevant industry groups provides valuable input and local expertise to inform the assessment of biosecurity risks. The approach used provides a reasonable basis for implementing scientific surveillance work and a practical basis for resource allocation and planning of survey activity.

Conducting scientific surveillance activities

3.25 A core function of the NAQS program is to develop and implement measures for the early detection of targeted pests, weeds and diseases. Surveillance activities primarily consist of field surveys by NAQS scientists, which involve observations and data collection from designated populations at specific locations across the NAQS zone. On an annual basis, approximately 15 to 20 animal and plant health surveys are conducted. While the animal and plant survey activities vary considerably, a similar process is used for the delivery, data management and reporting of field surveillance, which broadly comprises the following activities: undertaking field surveillance and data collection; diagnosis and data analysis; and reporting detections and surveillance data.

Undertaking field surveillance and data collection

3.26 The delivery of surveillance surveys is a well-established practice under NAQS and is largely guided by experienced staff who have extensive corporate knowledge and are supported by principle-based guidance material. Surveys are generally designed and delivered in accordance with international

and regional surveillance standards for survey methodology and data collection.[57]

3.27 DAFF is exploring opportunities to review and improve current survey methodologies and indicated that it plans to revise internal guidance material on survey design principles and sampling methodology.[58] The documentation of existing corporate knowledge held in specialist areas is important and will be particularly relevant for succession planning of the plant science disciplines, which are currently delivered by experienced senior staff.

3.28 A number of mechanisms are in place to support the delivery of scientific fieldwork, including appropriate training, administrative controls and delegation of roles and responsibilities. For example, a team leader is nominated to lead each survey and they are responsible for a number of tasks before, during and following the survey—including the completion of a trip plan and itinerary, pre-departure checklist and preparing the pre- and post-survey reports.

3.29 While DAFF has adopted a number of reporting formats to document survey findings, the completion of the survey reports has been variable. The department has recently reviewed existing arrangements and has adopted the post-survey report format, which provides a summary of major survey findings, field observations, details of the samples collected and costs associated with the survey. The establishment of quality assurance processes to encourage the timely completion and submission of post-survey reports would help to ensure key lessons and knowledge obtained from surveillance activity is captured for planning future surveillance activity and the refinement of survey methodologies.

Data collection

3.30 While in the field, NAQS scientists typically use notebooks and, in some cases, computers or portable electronic devices to record field data and specimen information. Templates have been developed by each discipline to

[57] This includes: the International Standards for Phytosanitary Measures, Guidelines for Surveillance 1997; the Guidelines for surveillance for plant pests in Asia and the Pacific, published by the Australian Centre for International Agricultural Research in 2005; and the World Organisation for Animal Health's Terrestrial Animal Health Code.

[58] For example, NAQS scientists are currently considering a research paper produced by the Australian Centre of Excellence for Risk Analysis in 2009, which recommended that, to improve the detection of exotic weeds, DAFF develop detection time models for invasive weeds.

capture required data, such as location, time, collector, specimen characteristics and additional comments.

Animal health surveys

3.31 The aim of the animal science program is to recognise targeted diseases through a combination of clinical observations and collection of samples for laboratory screening. Animal health surveys are conducted as structured surveys and opportunistic sampling, which includes: testing for the presence of diseases through autopsies of feral animals and laboratory testing; monitoring the health of sentinel animals through regular blood samples (see case study below); testing birds for the presence of avian influenza strain; trapping insect pests of animals, such as screw-worm fly[59]; and monitoring the health of domestic animals in the Torres Strait through annual surveys.

[59] This is separate from the plant health entomology surveys.

Case Study

Monitoring for exotic pests and diseases through sentinel cattle

Sentinel herds are small groups of animals (usually 10 to 20), which are examined at regular intervals throughout the year for the presence of diseases. The NAQS program currently has four sentinel herds located in Eastern Arnhem Land at Garrithiya Station, Kalumburu Station in Western Australia, Seisia in the Cape York and York Downs Station in Queensland. Two Indigenous ranger groups are engaged to assist in taking blood samples from sentinel herds on a monthly basis.

The sentinel cattle are monitored for the presence of: exotic animal diseases, including strains of the bluetongue virus, surra (*Trypanosoma evansi);* and exotic pests, such as screw-worm fly. During the peak seasons, monthly physical examinations are conducted and blood samples are taken from the herds. Data collected relating to arbovirus (e.g., bluetongue virus) from these samples is reported to Animal Health Australia's National Arbovirus Monitoring Program (NAMP).

NAQS staff and members from the Northern Peninsula Area Regional Council ranger group collecting blood samples at Seisia in the Cape York Peninsula, November 2011.

Source: ANAO.

Plant health surveys

3.32 Plant health surveys are conducted at a range of locations, including private residences and gardens within communities, council amenity areas and agricultural or horticultural areas, such as orchards, where specific plant hosts are located. NAQS scientists examine plants for damage and unusual features that may indicate the presence of targeted or unknown organisms. Representatives from each of the three plant disciplines generally participate in surveys and assess the local environment using skills and techniques relevant

to their discipline. The conduct of plant surveys is illustrated in the case study below.

Case Study

Monitoring plant health with general surveillance

In accordance with the NAQS risk area ratings, seven areas along the northern coast of Australia, including the Torres Strait, are surveyed at least annually by the NAQS plant health team. Plant surveys typically involve assessing the health of specific plant host species, such as citrus and banana plants, and collecting samples of unknown and damaged plants. Entomologists assess the presence and distribution of insects, and unknown or unusual specimens are collected and preserved for further analysis and identification in the laboratory.

Plant surveys often require access to private property, which relies on good relationships with the local community. Consulting with property owners is undertaken before and during surveys, which assists in identifying suspect organisms or damaged plants. Members of state/territory biosecurity agencies are often present on the plant health surveys and are generally consulted during the planning phase of each survey.

NAQS scientists examining thrips found on a banana plant (left), collecting samples (centre) and recording data related to collected specimens (right) in the Daintree Rainforest, November 2011.

Source: ANAO.

Diagnosis and data analysis

3.33 A significant component of NAQS scientific work is directed at the identification and diagnosis of samples collected in the field. The identification of samples draws upon trained scientists' ability to recognise suspect organisms and clinical signs in the field, coupled with quantitative laboratory diagnostic techniques.

Diagnostics

3.34 DAFF informed the ANAO that all plant samples collected in the field undergo preliminary in-house taxonomic identification, which may involve morphological examination, chemical analysis and a range of other clinical tests, such as genetic verification. Typically, a series of diagnostic tests are carried out to identify a specimen, and these vary across the scientific disciplines. DAFF indicated that priority is given to specimens suspected to be on the NAQS target lists, which are prioritised or sent to third-party laboratories for verification.

3.35 After clinical analysis of the animal host is performed in the field, most animal samples are sent directly to external laboratories for testing. NAQS maintains a register to monitor the progress of animal samples sent for testing, including details of the sample, tests performed, timeframes and invoicing information. Botany samples undergo in-house and third-party identification in Australian Government or state/territory herbaria, where reference collections and specialists are used to verify NAQS samples. The identification of animal and botany samples is usually completed within weeks of the field survey.

3.36 Due to the specialist nature and diverse biology of the entomology and plant pathology disciplines, there are limited third-party facilities available to assist in the identification of samples from these disciplines. In particular, plant pathology presents unique challenges for NAQS, as this is a highly specialised laboratory-based discipline, requiring specific expertise and infrastructure. DAFF advised that NAQS scientists have developed diagnostic methods in the absence of established techniques. Preliminary plans are also in place to improve the confidence levels associated with the entomology diagnostic process by undertaking selected verification activities using a mix of in-house and third-party laboratories.

3.37 The timeliness of the entomology and plant pathology diagnostics is variable because of: the use of in-house and third-party providers; the complexity of the diagnostic task; and the limited and specialist nature of the analysis. DAFF was able to provide an indicative estimate of timeliness and notes that this depends on a number of variables including the specimen and required diagnostic procedures. While informal processes are used to monitor the progress of diagnostic tasks, there is no system in place to manage entomology and plant pathology diagnostic samples that have been sent for testing. It is important to establish effective systems to ensure that specimens

sent for testing are appropriately managed, including monitoring the timeliness of testing, particularly when subsequent notification to biosecurity agencies may be required for significant findings.

3.38 DAFF identified a number of challenges arising from the absence of an in-house laboratory data management system for the plant disciplines, which would enable the systematic tracking of specimen samples through the diagnostic process. NAQS officers indicated that such a system would enable greater visibility over the timeliness of diagnostic processes, as well as providing a variety of data and trend analysis.[60]

3.39 The business need for an improved laboratory management data system, among other things, has been identified in the ICT Business Improvement Plan, which was endorsed by the NAQS Management Committee in January 2012. In the interim, DAFF indicated that it intends to implement a manual system for tagging samples. This system will involve senior scientists assessing and tagging samples according to the estimated time remaining before a decision can be made as to whether it is a target-listed organism. DAFF considers that this system will assist the department to prioritise and manage diagnostic tasks by informing managers of the expected completion of diagnostic results.

Data entry and analysis

3.40 NAQS scientific data is broadly comprised of specimen and observational data, diagnostic results and scientific reports with supporting documentation. DAFF maintains a range of specimen, host data and historical data sets collected over the life of the program, which are currently held in the NAQS Database and recorded against individual surveys. The current database has been used by NAQS since 2000 and, where possible, it has been modified to meet the changing data management needs of the program.

3.41 Survey data, including field observations and specimen details, are manually entered into the NAQS Database using data entry templates for each sample collected during a survey.[61] Identification results and details of

[60] The Beale Review also noted that the timeliness of the diagnostic processes correlates with the reporting of detections and facilitates efforts to eradicate and control exotic pest and disease incursions. Beale. R., et al, *One Biosecurity: A Working Partnership: The Independent Review of Australia's Quarantine and Biosecurity Arrangements Report to the Australian Government*, 30 September 2008, pp.147–148.

[61] Each sample is assigned a sequential alpha-numeric collection number, where the first three letters are the initials of the collector followed by sequential numbers.

diagnostic tests performed are recorded in the database, including incomplete tasks. The survey unique identifier code and the sample collection number are the principal means of tracking data in the database and through administrative records.

3.42 Survey data is required to be entered into the database within three months of survey completion. DAFF is to yet to establish a quality assurance process to monitor data entry activities and record the completion of these tasks. While progress towards completing diagnostic and data entry tasks is monitored informally, the absence of a more rigorous system limits the assurance obtained by NAQS management regarding data entry activities.

3.43 DAFF informed the ANAO that the current database presents some constraints to improving data management and analytical capability. These constraints arise from: the lack of sample tracking functionality, such as the ability to set alerts for overdue tasks; slow network speeds; lack of capacity to spatially map the coverage of survey work and NAQS findings; and data corruption associated with the query function. The database does not currently include the functionality to identify detections or significant findings.[62]

3.44 In parallel with the use of the NAQS Database, work is underway to migrate to a new data-sharing platform known as BioSIRT.[63] Since November 2009, customised data entry templates have been developed by NAQS for the animal discipline and fruit fly data sets, including improved functionality such as the ability to tag detections and significant findings. BioSIRT is also expected to deliver improved capacity to spatially map data and track data entry activities. NAQS is currently developing a series of templates for the plant health data and a data migration plan. A robust migration plan will be important to minimise potential data losses and disruption to analytic and reporting tasks. DAFF has not yet set a date for the migration of NAQS data to BioSIRT.

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[62] A 'positive' diagnosis for an animal disease can indicate a significant finding or detection. Positive results can be searched in the database using the query function.

[63] BioSIRT (Biosecurity Surveillance, Incident, Response and Tracing) is a database software package jointly developed by Australian Government and state and territory government biosecurity agencies to manage biosecurity data.

Reporting detections and surveillance data

3.45 A critical function and important output of NAQS surveillance activity is the reporting of detections and significant findings and dissemination of data to biosecurity stakeholders.

Reporting detections and significant findings

3.46 In accordance with a range of Australian and state/territory animal and plant protection legislation, the NAQS program is required to notify relevant authorities of detections or significant findings within a defined timeframe.[64] DAFF has established a formal process for the notification of detections, as documented in the NAQS Detection Notification Plan, which requires:

- officers to verbally notify their direct line manager of detections and suspected, but unconfirmed, significant findings; and
- NAQS Managers report to the Chief Veterinary Officer or Chief Plant Protection Officer and the relevant state or territory authority, in addition to DAFF senior management within 24 hours.[65]

3.47 Key recipients of detection information (noted above) informed the ANAO that they are generally satisfied with the timeliness of NAQS reporting mechanisms.

3.48 In addition to the formal notification protocols, DAFF also provides a summary of detections in: the monthly performance reports to business critical stakeholders; half-yearly program status updates to the NAQS Steering Committee; and the departmental annual report.

Dissemination of data to biosecurity stakeholders

3.49 The NAQS program is recognised by its many stakeholders as performing an important role in the national biosecurity continuum through surveillance and data collection activities. The program collects valuable host and specimen data, new records of plant and insect species and detections of exotic pests, weeds and diseases. DAFF informed the ANAO that NAQS data is also used as evidence to demonstrate Australia's pest and disease status

[64] Notifiable diseases, detections and significant findings include: new records for the jurisdiction, state, territory or Australia; extensions into other Australian jurisdictions; and new host records.

[65] Depending on the type of specimen detected, other stakeholders, such as industry groups, may also be notified.

during market access and trade negotiations and, over the longer term, contributes to a broader understanding of disease epidemiology in Australia.

3.50 On a regular basis, NAQS provides field data and results to a range of government and industry stakeholders, as set out in Table 3.2. NAQS data is also incorporated into a range of Australian Government and state/territory government plant and animal databases. Periodically, post-survey reports are provided to key stakeholders and peer-reviewed scientific papers are published.

Table 3.2

Summary of key surveillance results to stakeholders

Stakeholder	Program / reporting items
Animal Health Australia	• National Arbovirus Monitoring Program (NAMP) • Screw-worm Fly Freedom Assurance Program • National Animal Health Information System
Australian Wildlife Health Network	Avian influenza in wild birds and wildlife disease reports
Primary Industry Standing Committee	National Fruit Fly Containment Strategy
Office of the Chief Plant Protection Officer	Baseline fruit fly trappings data
Plant Health Australia	• Australian Plant Pest Database • National Plant Surveillance Reporting Tool

Source: ANAO analysis of DAFF data.

Note 1: The frequency of reporting is generally quarterly, with the exception of fruit fly trapping data, which is reported fortnightly in the wet season.

Conclusion

3.51 The planning and delivery of scientific surveillance surveys is a well-established activity under NAQS. Many of these activities have been undertaken over the life of the program, and there is a heavy reliance on corporate and specialist knowledge held by senior staff. Documentation of this knowledge in post-survey reports will assist in succession planning and in the planned revision of guidance material on survey methodology.

3.52 NAQS uses a range of in-house and external diagnostic facilities to identify and verify field samples. However, DAFF is yet to establish an effective mechanism to track the diagnostic activities and timeframes of the

entomology and plant pathology disciplines. Capacity constraints posed by the NAQS Database further limit the ability of NAQS to monitor and manage diagnostic and data entry activities. While the proposed migration to BioSIRT is expected to address some of these issues, improvements to the management of scientific data should ensure that there is capacity to adequately record, monitor and report NAQS survey and diagnostic data.

3.53 There is an established process in place for reporting suspect organisms and confirmed detections that generally meets the expectations of the program's key biosecurity stakeholders. DAFF also works collaboratively with program stakeholders to share survey results through a number of channels and is considered to provide a valuable contribution to the broader biosecurity community.

Recommendation No.1

3.54 To improve the effectiveness of scientific surveillance activity, particularly in relation to the plant science disciplines, the ANAO recommends that the Department of Agriculture, Fisheries and Forestry strengthen existing arrangements for recording, monitoring and reporting survey and diagnostic data.

DAFF response: Agreed. The department acknowledges that Recommendation 1 will assist in further improving systems for recording biosecurity surveillance outcomes and, more specifically, tracking of specimens through the process of collection, analysis and reporting to stakeholders.

4. Torres Strait Border Movements

This chapter examines how DAFF manages the quarantine aspects of Torres Strait border movements.

Introduction

4.1 The Torres Strait provides a potential transit route to mainland Australia for many exotic pests, weeds and diseases that are established in countries to Australia's north. DAFF is responsible for managing the quarantine aspects of border movements between:

- Papua New Guinea and the Torres Strait Protected Zone (TSPZ)[66];
- the TSPZ and the Special Quarantine Zone (SQZ)[67]; and
- either zone and mainland Australia.

4.2 DAFF's responsibilities in the Torres Strait are underpinned by the Torres Strait Treaty and the *Quarantine Act 1908* (the Act). The Torres Strait Treaty governs traditional movements between Papua New Guinea and the Torres Strait, and the Act governs the quarantine aspects of all southward movements into and between defined zones in the Torres Strait and into mainland Australia.

4.3 The NAQS program restricts the southward movement of quarantine risk material (QRM)[68] into the Torres Strait, between Torres Strait zones and from the Torres Strait to the mainland by: maintaining a presence in the Torres Strait; informing traditional visitors and vessel and aircraft operators about quarantine and notification requirements; inspecting vessels and aircraft that carry people and cargo southward through the Torres Strait; detecting and seizing QRM; and managing non-compliance with notification requirements.

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[66] NAQS is not responsible for non-traditional movements from Papua New Guinea to Australia. DAFF's Biosecurity Passengers and Seaports programs are responsible for these international movements.

[67] The areas covered by the TSPZ and the SQZ are illustrated in Figure 4.1.

[68] According to the *Quarantine Proclamation 1998*, the following items are considered quarantine risk material and cannot be moved from the TSPZ to the SQZ or from either zone to mainland Australia without a permit: live animals; meat products; dairy and egg products; untreated hides and feathers; animal products; soil; fresh fruits and vegetables; and plants.

4.4 NAQS has 23 border operations staff, including 20 Aboriginal and Torres Strait Islander officers, on 15 Torres Strait islands (see Figure 4.1) and at three mainland locations.

Figure 4.1

NAQS offices in the Torres Strait

Source: DAFF.

4.5 The ANAO's examination of DAFF's management of the quarantine aspects of Torres Strait border movements focused on:

- traditional visitor movements from Papua New Guinea; and
- vessel and aircraft movements.

As part of this examination, the ANAO interviewed NAQS officers and observed quarantine clearance processes at three mainland locations and on six Torres Strait islands.

Traditional visitor movements from Papua New Guinea

4.6 DAFF is responsible for managing the quarantine aspects of traditional visitor movements between Papua New Guinea and the TSPZ. Under the Torres Strait Treaty, residents of 13 Papua New Guinean coastal villages are permitted to travel without a passport for traditional activities in the TSPZ. Activities that are defined as 'traditional' under the Treaty include hunting, trading and attending ceremonies. Prior to arriving in the TSPZ, traditional

visitors are required to: obtain a pass from their community council; obtain prior agreement from the council in the community to be visited; and notify the Department of Immigration and Citizenship (DIAC). Traditional visitors can be issued passes to visit any of the 13 inhabited islands in the TSPZ.

4.7 In 2010–11, DIAC reported 53 200 traditional visitor movements between Treaty villages in Papua New Guinea and the Torres Strait. Of these, approximately half (26 600) were southbound movements from Papua New Guinea to the Torres Strait. About 90 per cent of these southbound movements arrived at the three islands closest to Papua New Guinea: Saibai Island; Boigu Island; and Dauan Island. Saibai Island receives the majority of traditional visitors, with traditional vessels generally arriving on a daily basis.

4.8 DAFF's approach to monitoring the quarantine aspects of traditional visitor movements involves: providing quarantine information to traditional visitors; maintaining relationships with community councils and other government agencies; inspecting traditional visitor arrivals; and seizing QRM.

Engaging with traditional visitors and communities

4.9 NAQS officers accompany officers from the Department of Foreign Affairs and Trade (DFAT) on Treaty awareness visits to Papua New Guinea to provide quarantine information to councils and residents at Treaty villages.[69] To further promote public awareness of quarantine requirements, DAFF has erected signs at designated landing sites across the Torres Strait.

4.10 DAFF informed the ANAO that Torres Strait communities are generally supportive of quarantine activities, with community members reporting possible undetected arrivals to NAQS officers. In these cases, officers meet with the traditional visitors, explain quarantine requirements, inspect imported goods and seize any QRM. Community support is particularly helpful for locating traditional visitors who have brought QRM onto a Torres Strait island, as illustrated in the following case study.

[69] NAQS officers participated in Treaty awareness visits in June 2011 and November 2011.

Case Study

Community support for NAQS

In July 2010, NAQS officers located a piglet shortly after it had been illegally imported from Papua New Guinea to a Torres Strait island. Pigs pose a particularly high biosecurity risk as they are a potential host for several targeted animal diseases, including: classical swine fever; foot and mouth disease; and Japanese encephalitis. NAQS officers became aware of the piglet after receiving several reports from concerned local community members. Community members assisted officers in locating the piglet, and NAQS officers were able to remove the piglet according to quarantine procedures. The success of this activity was largely attributed to the high level of community support for NAQS and to the program's public awareness activities in the Torres Strait.

Conducting traditional visitor inspections

4.11 Traditional visitors are required to: notify DIAC prior to arrival; land at designated sites (see Figure 4.2); and arrive during designated hours. An island's designated landing sites and times are established by the local council. NAQS officers are in regular contact with DIAC officers and local councils to obtain information on expected arrivals.

Figure 4.2

Traditional visitors arriving at Saibai Island's designated landing site

Source: ANAO.

4.12 NAQS officers are required to meet visitors' vessels at the designated landing site, ensure visitors have no obvious health concerns and inspect vessels before anyone leaves the landing site. This includes inspecting baggage, artefacts, water containers and the vessel itself.

4.13 The department indicated that the number of traditional visitor inspections conducted depends on the extent to which visitors comply with arrival requirements and the availability of staff. Although DAFF work instructions[70] indicate that NAQS officers should attempt to inspect all traditional visitors upon arrival, the department does not mandate a particular target for the number or percentage of traditional visitor inspections that NAQS officers are to undertake.[71]

4.14 When traditional visitors arrive without notification, out of hours or at a non-designated landing site, NAQS officers are generally unable to conduct inspections. In addition, visitors attending traditional ceremonies often arrive in groups of over one hundred people, and it is difficult for NAQS officers to inspect all visitors upon arrival. To maximise the number of inspections undertaken, DAFF maintains regular communication with community councils and government agencies in the Torres Strait to obtain information on upcoming community events and ceremonies and, where possible, additional officers are dispatched to islands where large numbers of visitors are expected.

4.15 The limited availability of staff is especially challenging on the islands closest to Papua New Guinea, which receive thousands of traditional visitors each year. For example, the two officers on Saibai Island[72] conducted 5783 traditional visitor inspections in 2010–11, which is an average of 23 inspections each business day. These officers are also responsible for: pre-clearing vessels, aircraft, passengers and cargo destined for mainland Australia; assisting NAQS scientific officers with plant and animal surveys; monitoring fruit fly traps; and conducting public awareness activities. There would be merit in the department providing further guidance to NAQS officers regarding the priority to be given to these tasks, particularly when large numbers of traditional visitors arrive.

4.16 At the time of the audit, DAFF collected information on traditional visitor arrivals from DIAC on only an annual basis. DIAC keeps detailed records on traditional visitor arrivals because it manages the traditional visitor

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[70] As discussed in Chapter 2, DAFF produces detailed work instructions and standard operating procedures that guide staff in the performance of key operational activities.

[71] This is consistent with the risk-based approach DAFF adopted following the 2008 Beale Review, which recommended that the department eliminate mandated intervention targets.

[72] Most TSPZ islands have one NAQS officer, but DAFF has posted an additional officer on two islands that receive large numbers of traditional visitors—Saibai Island and Boigu Island.

pass system under the Treaty and attends all notified traditional visitor arrivals. DAFF informed the ANAO that it has now made arrangements to collect arrival information from DIAC on a weekly basis.

4.17 The ANAO's analysis of the program's monthly statistics spreadsheets[73] and DIAC's arrival information (as reported in its annual report) indicated that NAQS officers inspected 67 per cent of traditional visitor arrivals in 2009–10 and 33 per cent of arrivals in 2010–11 (see Table 4.1).

Table 4.1

Traditional visitor arrivals and inspections

	2009–10	2010–11	2010–11 (Revised)
Arrivals	26 950	26 600	26 600
Inspections	18 021	8 750	11 556
Inspection rate	67%	33%	43%

Source: ANAO analysis of DAFF and DIAC data.

4.18 The difference in inspection rates between 2009–10 and 2010–11 is partially the result of inaccurate inspection data. In analysing the monthly statistics spreadsheets, the ANAO found that nine per cent of the monthly inspection reports were missing for 2009–10 and 29 per cent of the monthly reports were missing for 2010–11.[74] In February 2012, DAFF informed the ANAO that the number of inspections for 2010–11 was approximately 11 556. This increases the inspection percentage to 43 per cent; however, the revised number of inspections for 2010–11 was also inaccurate as it did not include data for up to four islands.

4.19 The collection of inspection and seizure data on Torres Strait islands is challenging because officers have limited IT access and they conduct inspections in rugged and uncontrolled environments. While recognising that collecting data is more challenging in the Torres Strait environment, there is scope for DAFF to strengthen its data collection processes. The collection of inaccurate and incomplete records has been compounded by a lack of quality assurance processes to identify missing data. DAFF informed the ANAO that it

[73] The monthly statistics spreadsheets are a compilation of inspection and seizure data from the 15 NAQS offices in the Torres Strait and the three mainland locations that process arrivals from the Torres Strait. The spreadsheets are the basis of the border data that are reported in the monthly performance reports.

[74] The missing inspection reports involved up to three islands for any given month in 2009–10 and up to eight islands for each month in 2010–11.

is revising its processes to collect more accurate and complete data.[75] In addition to reporting inspections, there would be merit in the department developing quality assurance processes to identity missing and inaccurate data.

Collaboration with DIAC

4.20 As previously noted, DIAC is responsible for monitoring the movement of people between Papua New Guinea and the TSPZ and ensuring that Treaty requirements are met. As DAFF and DIAC are both responsible for monitoring traditional visitor arrivals, the two agencies collaborate and share resources, as necessary. The cooperative arrangements are formalised through a memorandum of understanding, which indicates that if an officer from one agency is unavailable, an officer from the other agency would perform specified duties of both agencies.[76]

4.21 At the time of the audit, there were three islands (Dauan, Darnley and Murray) where NAQS did not have officers and DIAC officers were undertaking NAQS responsibilities.[77] At the same time, DIAC did not have officers on Yorke Island and Stephen Island, and NAQS officers were undertaking DIAC responsibilities on these islands. These collaborative arrangements help to ensure a greater percentage of traditional visitors are inspected.

Seizure of quarantine risk material during traditional visitor inspections

4.22 NAQS officers are required to seize any QRM found during traditional visitor inspections. Seized items are to be treated, detained for return to the visitor upon their departure or destroyed. The most commonly seized items are fresh fruits and vegetables. In 2010–11, NAQS officers made 91 seizures as a result of 8750 traditional visitor inspections.

Vessel and aircraft movements

4.23 DAFF manages the quarantine aspects of southbound vessel and aircraft movements between Torres Strait zones and between the Torres Strait

[75] DAFF is currently trialling solutions to enable officers to enter inspection data at the inspection location—such as beaches where traditional visitors arrive—using a portable electronic device that can send the data directly to the Cairns head office.

[76] The memorandum of understanding has been in place since July 2004.

[77] In February 2012, DAFF informed the ANAO that the three NAQS positions had been filled.

and mainland Australia. Vessel movements involve cargo ships, fishing trawlers, fishing support vessels[78], yachts, customs vessels, navy vessels and emergency response vessels. These vessels carry cargo, passengers and crew and generally arrive on the mainland at either Bamaga or Cairns. Aircraft movements involve commercial airlines, charter airlines, private operators, the Royal Flying Doctor Service and Border Protection Command.[79] Torres Strait flights generally arrive on mainland Australia at Cairns airport.

4.24 DAFF's monitoring approach for vessel and aircraft movements involves: providing quarantine information to vessel and aircraft operators, passengers and crew; processing vessel and aircraft notifications; inspecting vessels, aircraft, cargo, passengers and crew; seizing QRM; and managing non-compliance with notification requirements.

Engaging with vessel and aircraft operators

4.25 Vessel and aircraft operators are informed of their quarantine and notification responsibilities through a variety of media, including: signs; radio broadcasts; face-to-face interactions with NAQS officers; annual letters from DAFF; brochures; and the DAFF Biosecurity website. In Cairns and Thursday Island harbours, DAFF broadcasts an announcement about quarantine requirements over VHF radio twice daily.[80]

4.26 Quarantine signs are posted at ports and airports in the Torres Strait and at mainland locations that process Torres Strait arrivals (see Figure 4.3). Quarantine signs provide information about notification requirements and items that cannot be moved across zones or from the Torres Strait to mainland Australia.

[78] Fishing support vessels (or 'mother ships') are vessels that support smaller fishing vessels by delivering provisions and by transferring the vessels' catch to the mainland.

[79] Border Protection Command is a multi-agency taskforce that utilises assets from Australian Customs and Border Protection Service and the Department of Defence to conduct civil maritime operations.

[80] VHF (Very High Frequency) marine radios are two-way radios commonly used for communication at sea.

Figure 4.3

Quarantine sign at Thursday Island harbour

Source: ANAO.

Processing vessel and aircraft notifications

4.27 Under the Act, notifications of arrival on mainland Australia must be given by:

- the master of a vessel over seven metres that has visited or operated in the Torres Strait—no more than 96 hours and no less than 12 hours prior to arrival[81]; and
- the pilot of an aircraft arriving from the Torres Strait—at least 30 minutes prior to arrival.[82]

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81 Vessels under seven metres are exempt from notification requirements, but may still be subject to inspection. Vessels moving from the TSPZ to the SQZ are not legally required to provide notification of arrival. DAFF does not actively monitor these movements, because the department considers that they present a low risk.

82 Flights moving from the TSPZ to the SQZ are not legally required to provide notification of arrival, but NAQS officers liaise daily with Torres Strait airlines and clear these flights when staffing levels allow. Aircraft moving from Papua New Guinea to Australia are international arrivals and are cleared by the DAFF Biosecurity Passengers program.

4.28 Once notification has been received (by telephone, facsimile, email or VHF radio), NAQS officers are required to issue a notification number, record arrival information and determine if the vessel or aircraft requires an inspection.

4.29 The decision to inspect a vessel is based on whether the vessel: has made landfall in the Torres Strait; is a low-risk vessel; is carrying QRM; and has a history of compliance with quarantine requirements. To determine if a vessel is low-risk, DAFF considers the: vessel operator's knowledge of quarantine procedures and record of compliance with quarantine requirements; length of time the vessel spends in the Torres Strait and remains at a mainland port; source of the vessel's food stores; and security and sanitary conditions of food storage areas. Low-risk vessels are not generally inspected. In 2010–11, seven low-risk vessels[83] travelled between the Torres Strait and Cairns a total of 66 times and were not generally inspected.

4.30 The decision to inspect an aircraft arriving from the Torres Strait is based on whether the aircraft is carrying QRM and the compliance history of the aircraft operator. It is also affected by whether an international flight is arriving at the same time, because officers from the DAFF Biosecurity Passengers program inspect flights from the Torres Strait on behalf of NAQS. These officers are also responsible for inspecting international flights and they generally consider international flights to be higher priority than flights from the Torres Strait.

Conducting vessel and aircraft inspections

4.31 Vessels and aircraft can be inspected prior to departure or upon arrival. Most vessels are inspected upon arrival. For a vessel inspection, a NAQS officer boards the vessel, speaks with the vessel master and physically inspects the vessel for signs of QRM. Officers focus on the vessel's galley and food storage areas. Vessel cargo is primarily inspected at the cargo depot after it has been unloaded.[84] According to DAFF records, NAQS officers inspected 976 vessels in 2010–11, as shown in Table 4.2.[85]

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[83] These vessels comprised: three Australian Customs vessels; two fishing support vessels; one emergency response vessel; and one cargo vessel.

[84] Where possible, cargo is to be inspected before leaving the Torres Strait. DAFF inspected 19 797 cargo consignments in 2010–11. Of these, 90 per cent (17 872 of 19 797) were conducted in the Torres Strait.

[85] These inspections were conducted across 15 Torres Strait islands and three mainland locations.

4.32 Where possible, NAQS officers aim to inspect aircraft prior to departure. Aircraft inspections include confirming the pilot has disinsected[86] the aircraft, inspecting luggage and determining if passengers and crew are carrying QRM. Officers employ a range of inspection methods, including physical searches and detector dog screening. DAFF records indicated that officers inspected 5948 aircraft arrivals in 2010–11, as shown in Table 4.2.

Table 4.2

Vessel and aircraft inspections

Location	Vessels		Aircraft	
	2009–10	2010–11	2009–10	2010–11
Torres Strait	172	268	6698	4931
Mainland	641	708	1375	1017
TOTAL	**813**	**976**	**8073**	**5948**

Source: ANAO analysis of DAFF data.

4.33 Although DAFF processes notifications and collects arrival data, the department does not use this information to calculate the total number of notified vessel or aircraft arrivals or the percentage of vessels and aircraft inspected.

4.34 The ANAO analysed the Cairns office's operational spreadsheets to calculate, for Cairns, the number of arrivals, the number of inspections and the rate of inspection for vessels and aircraft in 2010–11.

ANAO analysis: Cairns vessel arrivals and inspections

4.35 The ANAO's analysis of the Cairns office's operational spreadsheets found that 235 vessels arrived in Cairns from the Torres Strait in 2010–11. Of these, 66 arrivals had been deemed low-risk and were not subject to regular inspections, and 169 had no documented risk status. NAQS inspected 68 per cent of these vessels, as shown in Table 4.3.

[86] According to DAFF and the World Health Organization, disinsection is a procedure to control or kill the insect vectors of diseases present in luggage, cargo, containers, goods and postal parcels.

Table 4.3

Cairns vessel arrivals and inspections in 2010–11

Risk status of vessel arrivals	Inspected		Not inspected		Total	
Low risk (not generally met on arrival)	7	11%	59	89%	66	100%
No documented risk status	115	68%	54	32%	169	100%
TOTAL	**122**	**52%**	**113**	**48%**	**235**	**100%**

Source: ANAO analysis of DAFF data.

4.36 As previously noted, DAFF does not mandate targets for the number or percentage of inspections that NAQS officers are to undertake, which is consistent with the department's risk-based approach to border operations. The department indicated that it focuses its resources on higher-risk vessels and undertakes a range of public awareness activities to ensure there are high levels of compliance with quarantine requirements.

4.37 The ANAO's analysis of the NAQS program's internal spreadsheets for Cairns and monthly performance reports revealed inaccuracies in the vessel inspection data reported to program stakeholders. For example, DAFF reported that it had inspected 281 vessels in Cairns for 2010–11, but the department had source data for only 122 of these inspections, which is an over-reporting of 159 inspections. This issue was compounded by a lack of quality assurance processes for identifying inaccurate data.

ANAO analysis: Cairns aircraft arrivals and inspections

4.38 The majority of people movements from the Torres Strait to mainland Australia are via commercial flights to Cairns. The ANAO's analysis of Cairns' operational spreadsheets found that DAFF inspected 80 per cent of the 1471 flights that arrived in Cairns from the Torres Strait in 2010–11, with 98 per cent of scheduled flights inspected and 57 per cent of unscheduled flights inspected, as shown in Table 4.4.[87]

4.39 As with vessel inspections, DAFF does not mandate a target for the number or percentage of aircraft inspections that NAQS officers are to undertake. DAFF indicated that the number of inspections conducted is largely affected by staff availability when higher-risk international flights arrive at the same time as flights from the Torres Strait.

[87] As the majority of unscheduled flights do not involve passengers, they present a lower biosecurity risk and are thus subject to lower levels of physical inspection.

4.40 When aircraft operators notify DAFF of their arrival, the department assesses the quarantine risk and determines whether or not a physical inspection is required. In some cases, quarantine clearance by telephone is considered sufficient to manage quarantine risks. Of the flights that were not inspected, 243 were provided quarantine clearance by telephone (as shown in Table 4.4).[88]

Table 4.4

Cairns 2010–11 aircraft arrivals, inspections and telephone clearances

Arrival type	Inspected		Telephone cleared		Not inspected or telephone cleared		Total arrivals	
Scheduled flights	820	98%	0	0%	15	2%	**835**	**100%**
Unscheduled flights	361	57%	243	38%	32	5%	**636**	**100%**
TOTAL	**1181**	**80%**	**243**	**17%**	**47**	**3%**	**1471**	**100%**

Source: ANAO analysis of DAFF data.

4.41 For the 47 flights that were not physically inspected or cleared by telephone, 35 did not have a recorded reason. In relation to the 12 flights that had recorded reasons, nine related to staffing availability and three related to aircraft operators providing incomplete notification information. Overall, NAQS officers inspected or telephone cleared 97 per cent of flights that arrived in Cairns from the Torres Strait in 2010–11.

4.42 The ANAO's analysis found a 99 per cent level of accuracy in the aircraft inspection data. Further, the ANAO noted that a quality assurance process is in place to help ensure that the data are accurate and complete.

Passenger and crew inspections

4.43 DAFF promotes informed compliance with quarantine requirements by providing vessel and aircraft operators with brochures, posters and seat-pocket cards that contain quarantine information. NAQS officers inspect passengers and crew that travel on southbound vessels and aircraft through the Torres Strait and between the Torres Strait and mainland Australia to detect and seize QRM. Most passengers and crew are inspected upon arrival, but some are inspected pre-departure in the Torres Strait. For on-arrival inspections, an

[88] DAFF informed the ANAO that flights cleared by telephone are usually operated by pilots who have a good understanding of quarantine requirements and are known to be compliant.

officer with a detector dog generally inspects passengers' carry-on and checked luggage and seizes any QRM. According to DAFF records, 17 328 vessel passengers and crew and 54 773 aircraft passengers and crew were inspected in 2010–11, as shown in Table 4.5.

Table 4.5

Passenger and crew inspections

Location	Vessel passengers and crew		Aircraft passengers and crew	
	2009–10	2010–11	2009–10	2010–11
Torres Strait	540	1 944	29 161	22 872
Mainland	14 772	15 384	30 521	31 901
TOTAL	**15 312**	**17 328**	**59 682**	**54 773**

Source: ANAO analysis of DAFF data.

Seizure of quarantine risk material

4.44 Any QRM found during inspections is seized by NAQS officers, with seized items required to be treated, detained or destroyed. According to the ANAO's analysis of DAFF records for 2010–11: 178 seizures were made during vessel inspections; 515 seizures were made during aircraft inspections; and 198 seizures were made during cargo inspections, as shown in Table 4.6. The most commonly seized items were fresh fruits and vegetables. DAFF does not generally calculate seizures rates, but these calculations would assist the department to determine higher-risk pathways and would inform risk-based resourcing decisions.

Table 4.6

Seizures of QRM from 2010–11 vessel, aircraft and cargo inspections

Location	Vessels		Aircraft		Cargo	
	Seizures	Seizure rate[1]	Seizures	Seizure rate[1]	Seizures	Seizure rate[1]
Torres Strait	56	21	169	3	122	1
Mainland	122	17	346	34	76	4
TOTAL	**178**	**18**	**515**	**9**	**198**	**1**

Source: ANAO analysis of DAFF data.

Note 1: Rate per 100 inspections.

Non-compliance with notification requirements

4.45 Under the *Quarantine Act 1908,* pilots and vessel masters are required to notify NAQS of their arrival prior to arriving on mainland Australia from the

Torres Strait. DAFF's approach to managing and addressing non-compliance with requirements under the Act involves:

- engaging with pilots and vessel masters and communicating quarantine and notification requirements;
- reporting non-compliance incidents to DAFF Biosecurity's Compliance and Investigations Team; and
- following up incidents with non-compliant operators.

4.46 Where a pilot or vessel master fails to notify NAQS of their arrival on mainland Australia from the Torres Strait, NAQS officers are required to seek an explanation from the pilot or vessel master, record the details of the incident and notify NAQS management. The ANAO reviewed DAFF's non-compliance records for 2010–11. These records included the name of the airline involved, a description of the incident, the date and time the incident occurred and the action taken by the NAQS officer.

4.47 DAFF addresses non-compliance using an escalation approach, which is based on the frequency and severity of the non-compliance. These activities are risk-based and guided by DAFF Biosecurity's Compliance and Investigations Operations Policy. DAFF's approach includes: sending annual letters to aircraft operators detailing quarantine and notification requirements; sending letters to non-compliant operators; meeting with non-compliant operators; and lodging incident reports with DAFF Biosecurity's Compliance and Investigations team for further investigation.

4.48 DAFF informed the ANAO that, in 2010–11, there were no incidents of non-compliance involving vessel masters, but there were three incidents where pilots failed to notify NAQS of their arrival. These incidents were referred to DAFF Biosecurity's Compliance and Investigations Team. Following review, these incidents were considered to be minor non-compliance issues, and NAQS responded by contacting the airlines involved to clarify notification and quarantine requirements.

Conclusion

4.49 Each year, there are approximately 25 000 traditional visitor movements from Papua New Guinea to the Torres Strait and approximately 100 000 people and cargo movements on vessels and aircraft from the Torres Strait to mainland Australia. To reduce the risk of exotic pests, weeds and

diseases entering mainland Australia through these pathways, DAFF restricts the movement of QRM through the Torres Strait.

4.50 The ANAO's analysis indicated that, in 2010–11, NAQS officers inspected approximately 43 per cent of traditional visitor arrivals, 68 per cent of Cairns vessel arrivals and 80 per cent of Cairns aircraft arrivals. While DAFF does not mandate a target number of inspections that NAQS officers are to undertake, which is consistent with the department's risk-based approach to border operations, the department attempts to inspect as many border movements as possible. The number of inspections conducted is influenced by: the availability of officers to conduct, at times, large numbers of inspections; and the extent to which traditional visitors and vessel and aircraft operators comply with arrival and notification requirements. The department has adopted an escalation approach to manage non-compliance with notification requirements. The focus of DAFF's approach to compliance is education and awareness, with a small number of non-compliance cases investigated by the department's Compliance and Investigations team each year.

4.51 The collection of border operations data in the Torres Strait is challenging because of limited IT access and rugged working conditions. The inspection data for aircraft movements were generally accurate and supported by a quality assurance process. However, the inspection data for traditional visitors and vessel movements were generally inaccurate and, in some cases, incomplete. These data integrity issues were compounded by a lack of quality assurance processes. Further, although DAFF collects data on notified arrivals, the department does not use this information to calculate inspection and seizure rates. This additional analysis would enable DAFF to establish baselines and monitor trends and border management performance over time. It would also better inform management decision-making regarding the deployment of staff and the prioritisation of inspection activity. Improving quality assurance processes to help ensure the accuracy and completeness of data collected for traditional visitor and vessel inspections would provide greater assurance regarding the integrity of border operations data.

Recommendation No.2

4.52 To provide meaningful data to inform border management decisions and measure performance, the ANAO recommends that the Department of Agriculture, Fisheries and Forestry:

- improve quality assurance processes to help ensure that border operations data are accurate and complete; and
- analyse border operations data to calculate inspection and seizure rates and establish baselines for each Torres Strait arrival pathway.

DAFF response: Agreed. The department acknowledges that Recommendation 2 will assist in further improving elements of the existing data collection, quality assurance and analysis systems underpinning its Torres Strait border operations.

5. Public Awareness and Indigenous Engagement

This chapter examines DAFF's public awareness activities and the engagement of Indigenous ranger groups.

Introduction

5.1 The extensive area covered by NAQS includes many remote locations that are sparsely populated and challenging to access. To assist in the delivery of NAQS activities across Australia's northern region, DAFF promotes awareness of biosecurity issues and engages with Indigenous ranger groups to undertake scientific surveillance and public awareness support activities. The ANAO examined DAFF's arrangements to increase public awareness of biosecurity issues and to engage with Indigenous ranger groups.

Public awareness

5.2 Creating greater public awareness of biosecurity issues in northern Australia has been a key aim of NAQS since the program was established in 1989. To support the achievement of this aim, the NAQS *Quarantine Top Watch!* campaign[89] was established in 1992 to:

- raise awareness of the importance of biosecurity issues within key target groups in northern Australia; and
- encourage residents in those regions to 'keep a top watch' for exotic pests, weeds and diseases that could harm Australia's animal and plant life and to report sightings to DAFF.

5.3 Public awareness also has a role in generating public support for, and cooperation with, the NAQS program. DAFF considers that the promotion of biosecurity issues through public awareness activities has helped the department gain the cooperation of Indigenous communities and private landowners, in particular, by providing access to their land for the conduct of NAQS scientific surveillance activities.

[89] References to 'Quarantine' in the *Quarantine Top Watch!* logo and associated branding are progressively being updated following the replacement of the Australian Quarantine and Inspection Service with DAFF Biosecurity.

5.4 Expenditure on NAQS public awareness activities varies each year and represents a small proportion of the overall program budget. As public awareness activities are often integrated into other NAQS activities, with costs absorbed into the NAQS operational budget, determining the amount of expenditure is difficult. DAFF has estimated that approximately $100 000 to $150 000 is expended each year on the production and publication of public awareness promotional products. While public awareness activities are an important element of the program, in practice, there is greater flexibility and discretion in delivering public awareness activities, as opposed scientific surveillance and border management activities. As a consequence, public awareness activities are seen as a lower funding priority.

5.5 In reviewing NAQS public awareness activities, the ANAO examined whether the department had a communications strategy and how it delivered and reported its public awareness activities.

Communication strategy

5.6 Until recently, the delivery of NAQS public awareness activities has not been supported by a documented communication strategy. In recognition of the increasing importance of public awareness in supporting core program activities, DAFF initiated an internal review of NAQS public awareness activities in 2010.[90]

5.7 While various strategies have existed over the life of the program, the 2010 review represented the first step in systematically documenting a public awareness strategy. The review defined: the aim, objective and approach for NAQS communication activities; key stakeholders[91], strategies for communicating with stakeholders; and opportunities for using innovative engagement tools, such as social media.

5.8 Following consultation with DAFF's Corporate Communications area, the 2010 review was used as a basis for developing: an overarching NAQS

[90] The 2010 review of NAQS public awareness activities was informed by: surveys of 49 NAQS officers and 41 Torres Strait community members; in-depth interviews with experienced NAQS officers; the review of public awareness activities in Cape York; the review of NAQS calendar evaluation cards for 2010–11; and a range of studies on engaging with communities.

[91] Key stakeholders include: landowners and the general public within the NAQS zone; Indigenous ranger groups; visitors and commercial operators in the Torres Strait; Australian Government entities; state/territory government biosecurity authorities; local councils; industry groups; research institutions; tourism operators; and schools.

Communication Strategy and an annual Communication Implementation Plan. At the time of the audit, the Communication Strategy was being progressed but had yet to be endorsed by DAFF's Communications area. The Implementation Plan for 2011–12 was endorsed by the NAQS Management Committee in February 2012. The Implementation Plan outlines the communication activities to be delivered each financial year and sets out the purpose of the activities, how they will be assessed, and identifies the resources that will be required. The plan is developed in parallel with the program's operational planning cycle.

Delivery of public awareness activities

5.9 NAQS promotes public awareness, through the *Quarantine Top Watch!* campaign, which is characterised by a multi-layered and integrated delivery approach that is targeted towards specific stakeholders across the NAQS zone. The key features of this approach are the:

- integration of public awareness activities into the delivery of other NAQS activities using the existing resource base, primarily as part of scientific surveillance activities;
- presence of NAQS officers in key locations across the NAQS zone; and
- engagement of Indigenous ranger groups in remote communities.

5.10 DAFF uses a range of public awareness activities, including promotional products, to communicate the *Quarantine Top Watch!* message. The key components of public awareness activities are: direct community engagement activities; and the distribution of promotional products.

Direct community engagement

5.11 Direct community engagement is central to the NAQS program's communication of the *Quarantine Top Watch!* message and is the preferred approach to engage with local communities.[92] To maintain an ongoing presence in Indigenous communities across the NAQS zone, officers visit Indigenous communities twice yearly. Community engagement involves face-to-face interactions with key stakeholders, including school visits and attendance at community events. DAFF did not record the number of

[92] Over 60 per cent of Torres Strait community members surveyed, as part of the 2010 review of NAQS public awareness activities, indicated that face-to-face contact was the best approach to promote the *Quarantine Top Watch!* message.

community events attended or schools visited in previous financial years. During 2011–12, NAQS officers plan to attend five community events and visit 17 schools.

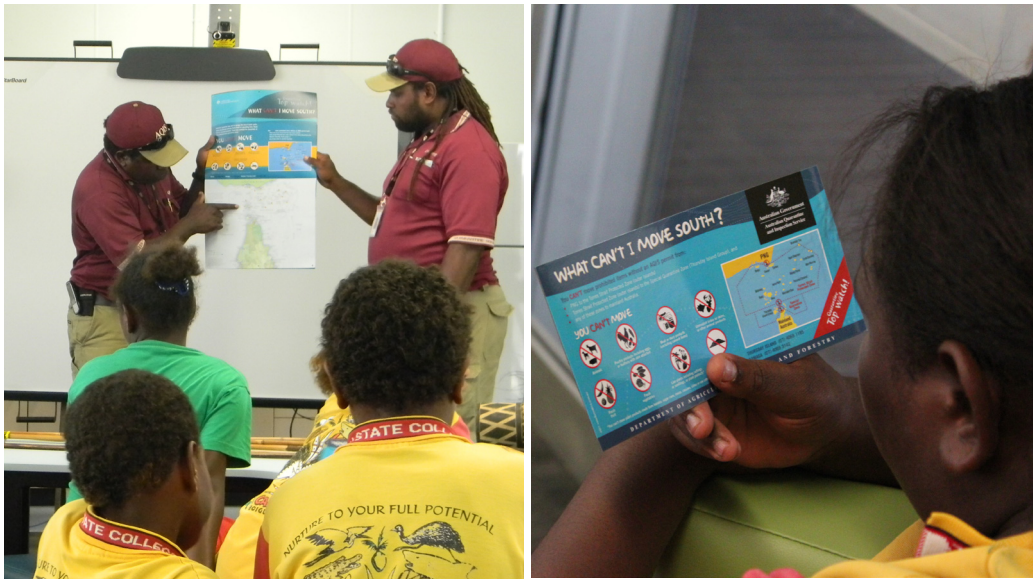
5.12 Community engagement activities are tailored to specific audiences. For example, presentations delivered to schools are designed with standard messaging that is modified for specific local audiences, with emphasis on particular biosecurity risks. To assist with communicating the *Quarantine Top Watch!* message to Indigenous students, DAFF indicated that local NAQS officers deliver elements of presentations in the local language. Figure 5.1 illustrates a school presentation delivered by NAQS officers.

5.13 Planning for community engagement activities is undertaken during the program's operational planning cycle and takes into account: the NAQS budget; risk area ratings[93]; and opportunities for direct contact with the public, such as community events. Scheduled activities are then included in the annual Communication Implementation Plan. An important aspect of planning for engagement activities is maintaining awareness of upcoming community events, periods of high people movement and school terms. This awareness helps NAQS officers deliver targeted and timely messages to key stakeholder groups.

[93] As discussed in Chapter 3, the NAQS zone is divided into 40 smaller areas and assigned risk ratings for animal and plant health.

Figure 5.1

Public awareness presentation at a Boigu school, Torres Strait



Source: ANAO.

5.14 Community engagement activities are delivered by NAQS officers concurrently with other NAQS activities and during dedicated public awareness field trips. In recent years, Indigenous ranger groups, as part of fee-for-service contract arrangements, have helped communicate the *Quarantine Top Watch!* message in remote communities in the NAQS zone. In 2011–12, each of the 38 Indigenous ranger groups engaged by DAFF are contracted to deliver two public awareness activities.[94]

5.15 In 2010–11, at least one community engagement activity was delivered in each of the 40 NAQS risk areas. While DAFF's records demonstrate coverage across the NAQS zone, they do not indicate whether activities were conducted based on identified risk. DAFF is currently developing performance indicators on the number of communities in high- and low-risk areas visited as a proportion of planned visits. Information on the extent of public awareness activity delivered in each risk area would help ensure that effort is directed to areas with a high biosecurity risks.

[94] The engagement of Indigenous ranger groups is discussed further in paragraphs 5.23–5.36.

Promotional products

5.16 NAQS has developed a variety of products to assist in the promotion of the *Quarantine Top Watch!* campaign. These products support community engagement activities, as well as promote and reinforce key public awareness messages, in particular monitoring and reporting signs of exotic pests, weeds and diseases. All NAQS promotional products carry the *Quarantine Top Watch!* logo and include DAFF contact details. Key NAQS public awareness products include:

- calendars—two *Quarantine Top Watch!* calendars are produced each year: one for mainland Australia; and one for the Torres Strait[95];
- merchandise—including: caps; t-shirts; mugs; water bottles; footballs; and calico bags; and
- brochures—providing information on biosecurity issues and outlining the public's responsibilities under the *Quarantine Act 1908*. DAFF has developed brochures tailored for both mainland Australia and Torres Strait audiences.[96]

5.17 Promotional products are primarily distributed as part of community engagement activities. However, DAFF also uses a range of additional approaches to distribute particular promotional products. Torres Strait-specific NAQS calendars are distributed to Torres Strait community members by mail, while brochures are often circulated as part of scientific and border management activities.

Monitoring and reporting

5.18 Monitoring and reporting on the delivery of NAQS public awareness activities is important for assessing whether the approach adopted has been effective in communicating the *Quarantine Top Watch!* message to target audiences. DAFF monitors each public awareness activity through informal and formal mechanisms, such as evaluation forms and informal feedback received from the public.[97] DAFF has identified a number of additional

[95] In 2011–12, 18 050 calendars were printed and distributed at a cost of approximately $52 000.

[96] For 2011–12, NAQS brochures for mainland Australia and the Torres Strait have an anticipated print run of 20 000 and 10 000, respectively.

[97] For example, 88 per cent of NAQS staff surveyed in the 2010 review of public awareness activities, reported that they were aware of a stakeholder taking action as a result of their exposure to the *Quarantine Top Watch!* campaign.

methods to help monitor the effectiveness of future public awareness activities, such as expanded calendar evaluation forms, field trip reports and community event feedback forms.

5.19 The number of hours spent on delivering public awareness activities is the key performance measure currently used by DAFF to monitor public awareness. This measure is useful for advising management of the time devoted to public awareness activities but it does not provide an indication of whether these activities were effective in communicating key NAQS messages.

5.20 DAFF informed the ANAO that a set of performance indicators for public awareness was currently being developed.[98] Those being considered by DAFF include a mix of eight effort and effectiveness measures, such as:

- number of reports of exotic pests, weeds and diseases received from the public; and
- percentage of survey respondents demonstrating an acceptable awareness of Torres Strait legislation requirements and contact details for enquires.

5.21 At present, the nature and extent of public awareness activities conducted under NAQS are generally not reported to stakeholders. There would be merit in reporting aspects of public awareness and performance information, such as the number of reports received from the public. This would better inform stakeholders of the outcomes of work undertaken by NAQS officers in delivering the *Quarantine Top Watch!* campaign.

Conclusion

5.22 While DAFF did not establish a communication strategy during the early phases of NAQS, work has been undertaken, following a review of NAQS public awareness activities in 2010, to develop a communication strategy, which is underpinned by an annual Communication Implementation Plan. The delivery model used for NAQS to raise public awareness, which includes a multi-layered and integrated delivery approach targeted to specific stakeholders, helps ensure that messages reach key stakeholders. Recent developments to strengthen the monitoring of NAQS public awareness activities will better place the department to determine whether activities are

[98] Performance measurement is discussed further in Chapter 6.

effective. These developments will also support improved reporting of public awareness.

Engagement of Indigenous ranger groups

5.23 Since 2006, Indigenous ranger groups have been engaged by DAFF on an annual fee-for-service basis to undertake a range of biosecurity support activities, such as: monitoring Australia's northern coastline for illegal foreign fishing vessels and marine debris; mapping plant and bat colonies; and monitoring fruit fly and mosquito traps. These activities extend and support the program's scientific surveillance and public awareness activities. Ranger groups also facilitate access to Indigenous-held land and assist in building relationships with local communities, who are well-placed to monitor the presence of, and to report, suspect pests, weeds and diseases.

5.24 In 2011–12, 38 Indigenous ranger groups were engaged under contractual arrangements totalling $274 300.[99] Activities are delivered across the NAQS zone by: nine groups in Queensland, 21 groups in the Northern Territory, and eight groups in Western Australia. Indigenous ranger groups provide coverage of virtually the entire northern coastline of mainland Australia.

5.25 The effectiveness of ranger groups in supporting the delivery of NAQS is reliant on sound ongoing management, including monitoring contractual arrangements and training.

Ongoing management

5.26 NAQS maintains a network of six Community Liaison Officers (CLOs) across the NAQS zone, who are the primary contact points for the ranger groups.[100] Each CLO is responsible for the management of between four and six groups. CLOs work closely with ranger groups to: help determine specific activities to be undertaken in the context of scientific surveillance priorities and ranger group availability and capacity; and assist with training ranger groups in activities specified in their contracts. While Indigenous ranger groups largely conduct contracted activities without the direct involvement of CLOs

[99] There are approximately six to ten Indigenous rangers per group.

[100] The DAFF Director of Northern Territory/Western Australia Operations, who is based in Darwin, has oversight of the CLO network across the NAQS zone and reports to the NAQS Director—Operations, who is based in Cairns and is responsible for the ranger group contracts.

or NAQS officers, groups occasionally participate in NAQS scientific surveys to build capacity in specific tasks.

Contractual arrangements

5.27 The value of individual fee-for-service contracts is relatively small and, in 2011–12, the contracts varied between $3200 and $15 200, with an average value of $6858. While a portion of the cost for each contract includes an hourly per-person fee, DAFF indicated that the contracts are not intended to fund individual ranger salaries, but rather to cover the costs of service delivery as determined by ranger groups.

5.28 The fee-for-service contracts consist of a standard DAFF consultancy contract supplemented by schedules specific to the activities that Indigenous ranger groups have negotiated to perform. The number of activities listed for each contract varies from four to seven activities. In 2011–12, common activities include: public awareness; plant host mapping; bat colony mapping; and marine debris surveillance.

5.29 In delivering fee-for-service contracts, DAFF indicated that, in practice, the contractual arrangements require flexibility because undertaking some of the proposed activities will not be possible due to variability in weather and ranger group capacity. In some circumstances, ranger groups have been requested to extend the coverage and time of contracted activities, for example, extending the activity by several days to cover a larger area. In recent years, NAQS has also invited ranger groups to consider opportunistic surveillance, which involves keeping an 'informed watch' for any reportable activity. Under this approach, groups are required to seek approval from DAFF prior to conducting an opportunistic survey, with DAFF advising that, to date, it has funded a small number of these surveys.[101]

5.30 The ANAO's review of the 2010–11 contracts identified some delays in finalising and endorsing contracts.[102] DAFF informed the ANAO that ranger group contracts are finalised after the NAQS budget is approved, which is typically several months into the new financial year. In recognition of these delays, DAFF sent letters to ranger groups in August 2010 advising of the

[101] DAFF informed the ANAO that from July 2011 to March 2012, Indigenous ranger groups conducted eight opportunistic surveillance activities in the Northern Territory and Queensland.

[102] Fee-for-service contracts for 2010–11 were reviewed as they represented a complete set of data.

delay and confirming the program's intention to engage the groups in contracted activities.

5.31 There were also delays regarding ranger groups' invoicing for services rendered. Ranger groups often take up to six months to submit invoices for completed activities and, in one case, an invoice was received two years after the activity was completed. The department indicated that it is investigating options for streamlining invoices and establishing reminder notices with the aim of improving the timeliness of invoicing.

Training provided to ranger groups

5.32 Training of ranger groups is undertaken through a combination of instructional material and face-to-face training and demonstration. All contracted activities are accompanied by work instructions, which detail the purpose and process for undertaking specific tasks.[103] Face-to-face training is typically undertaken by CLOs.[104] DAFF advised that the training needs and engagement model for each ranger group are considered on a case-by-case basis. Training undertaken by CLOs and NAQS officers is particularly important when a group is being established. NAQS officers' involvement in training a new ranger group is discussed in the following case study.

[103] For example, work instructions detail the activity's: intended outcome; scope; frequency; required resources; and work health and safety considerations.

[104] For example, in 2010–11, CLOs assisted ranger groups in conducting marine debris surveillance and foreign fishing vessel surveys.

Case Study

Training Indigenous Ranger Groups

Training ranger groups to undertake specific activities generally involves a 'hands-on' approach, including a demonstration of the activity and data collection techniques. CLOs will commonly participate in an activity until groups have attained the required capabilities. At the completion of an activity, ranger groups are required to submit a record sheet and samples collected, which may include photographs. The type of data required is set out in the work instructions and varies according to the type of task performed. In recent years, many groups have started using portable electronic devices to record their activities and collect data. Data stored on these devices can be uploaded onto a computer and emailed to NAQS staff. Using portable electronic devices saves time and reduces double handling of data. DAFF advised that many of the 38 ranger groups engaged by NAQS now have access to portable electronic devices.

(Left) NAQS staff using the training manual to explain how the marine debris activity is undertaken to the Crocodile Island Ranger Group. (Right) A member of the Northern Peninsula Area Regional Council ranger group using a portable electronic device to record details about fishing nets.

Source: ANAO.

Monitoring contractual arrangements

5.33 DAFF monitors contracted activities by reviewing submitted invoices and data record sheets. Invoices are typically checked against activity plans to confirm that the number of hours align with those agreed to in the contract. In addition, CLOs receive regular verbal feedback on ranger group performance through their ongoing contact with each group and their communities.

5.34 The completion of activities to meet specified objectives is the performance measure used to monitor Indigenous ranger group activity. During the course of the audit, DAFF completed an analysis of the ranger groups' activity completion rates. This analysis indicated that 37 per cent of

activities were completed (and invoiced) in 2010–11.[105] There are a number of factors that influence the completion rate, including: changes in the location and frequency of service delivery; temporary reductions in CLO staffing in Darwin; unpredictable and changeable weather conditions, especially during the wet season; and changes in the capacity and availability of Indigenous ranger groups to undertake NAQS activities.

5.35 DAFF advised that, while the activities performed by Indigenous ranger groups are important, their non-completion does not expose the program to immediate risks, as the activities are discretionary and are conducted in support of the scientific surveillance program.[106] High-risk and targeted surveillance activities are performed by NAQS scientific officers. As ranger groups are funded only after submitting an invoice for the completion of an agreed activity, the incompletion of activities does not expose the program to direct financial risks.

5.36 Ranger group activities are reported in NAQS monthly performance reports. During the course of the audit, DAFF commenced recording NAQS-assisted and non-assisted ranger group activities in the operational plan. The inclusion of this information will assist DAFF to better monitor completion rates and to identify any risks associated with non-completion.

Conclusion

5.37 Indigenous ranger groups support the delivery of NAQS, particularly through biosecurity activities and in building relationships with communities. The engagement of ranger groups provides DAFF with broader coverage across the NAQS zone through the establishment of a local presence in remote and sparsely populated areas, and access to Indigenous-held land. Since 2006, the approach to engaging Indigenous ranger groups has been formalised under fee-for-service contracts.

5.38 While there are some challenges to managing these arrangements, DAFF has adopted a pragmatic approach in working with ranger groups. A key component of this approach is the mentoring and training of Indigenous ranger groups to address varying levels of capacity. There is, however, merit in

[105] For 2010–11, the total value of the contracts was $542 528 and actual expenditure was $199 817. DAFF analysis also found a 20 per cent completion rate for the first seven months of 2011–12.

[106] For instance, it is preferable that ranger groups undertake and submit data on plant mapping activities prior to the delivery of a scientific plant survey; however, it is not a mandatory requirement.

more closely monitoring Indigenous ranger group activities, particularly the ongoing analysis of annual completion rates. Increased monitoring of ranger groups will also assist the department to better support Indigenous ranger groups in delivering biosecurity activities.

6. Measuring and Reporting Performance

This chapter examines how DAFF measures and reports the performance of the NAQS program.

Introduction

6.1 Measuring and reporting program performance provides program managers, departmental executives and stakeholders with an assessment of the extent to which the program has achieved the intended objectives and outcomes. The ANAO examined the arrangements put in place by DAFF to measure and report the performance of NAQS.

Program objective

6.2 NAQS is not identified as a program in DAFF's Portfolio Budget Statements (PBS), but contributes to the delivery of the department's Quarantine and Export Services program. The objective of this program is to: 'support access to overseas markets and protect the economy and the environment from the impacts of unwanted pests and diseases through the safe movement to and from Australia of animals, plants…people and cargo'. NAQS is a relatively small element of the Quarantine and Export Services program, with funding representing approximately three per cent of the program's total funding.

6.3 According to DAFF, the objective of the NAQS program is to contribute to the delivery of DAFF's outcomes and objectives through:

- identifying and evaluating quarantine risks facing northern Australia;
- developing and implementing measures for the early detection of targeted pests, weeds and diseases;
- contributing to national and international initiatives relating to targeted pest and disease monitoring of relevance to the NAQS program's domestic surveillance; and
- managing the quarantine aspects of border movements through the Torres Strait.

6.4 While the objective identifies the key activities that are undertaken as part of the NAQS program, it does not clearly articulate the key issues that

need to be addressed or the primary purpose of the program. A clearly articulated program objective underpins a program's measuring and reporting framework and informs the development of performance measures. As DAFF is currently reviewing its performance measures for NAQS, it would be timely for the department to also review the objective for NAQS to ensure that it clearly states the primary purpose of the program. This would provide the basis for establishing a more robust framework for measuring and reporting the performance of NAQS and focusing the program's resources on achieving the key results sought by government.

Performance measures

6.5 To monitor the achievement of a program's objectives, the administering agency needs to define deliverables and develop performance measures, such as key performance indicators (KPIs). Deliverables are the goods and services produced by a program in meeting its objective. KPIs measure the effectiveness and efficiency of the program and the program's success. When developing KPIs, consideration should be given to whether the performance indicators are: specific; measurable; achievable; relevant; and timed.[107] A balanced set of KPIs also includes quantitative and qualitative data and provides information on the extent to which the program is achieving its objectives.

6.6 DAFF has been developing and revising KPIs for the key areas of the NAQS program over recent years following a number of reviews that made recommendations to enhance the program's performance measures. In 2007, an independent review of DAFF's biosecurity function by Ernst & Young recommended that the department develop a meaningful and complete set of performance indicators for the NAQS program. In response, DAFF reviewed the KPIs for border operations and identified the following three new measures, the: number of inspections; number of seizures; and approach rate of quarantine risk material (QRM).[108]

[107] These characteristics are collectively known as SMART. ANAO Audit Report No.5 2011–12 *Development and Implementation of Key Performance Indicators to Support the Outcomes and Programs Framework*, pp. 15–16.

[108] In this context, the approach rate refers to the number of QRM items entering Australia per 100 movements.

Torres Strait border operations

6.7 While NAQS currently reports the number of inspections and seizures through the program's monthly performance reports, the QRM approach rate has not been calculated since 2008. In June 2008, DAFF conducted a verification operation in the Torres Strait to determine the approach rate of QRM.[109] The results of this week-long operation indicated that the approach rate was low, with, on average, a rate of two QRM items per 100 movements. DAFF informed the ANAO that it has not conducted any further verification operations because: the approach rate was determined to be low; the results did not indicate that the department needed to change how border operations were conducted; and the verification activity was resource-intensive and expensive.

6.8 While calculating the approach rate may be costly in the context of the overall NAQS budget, it is a useful activity. There would be merit in the department conducting focused approach rate exercises at intervals that balance cost and benefits. The approach rate for each pathway could be examined over time and serve as a baseline to further inform the measurement of program performance.

6.9 As mentioned above, the majority of the performance information that DAFF has collected and reported for Torres Strait border operations relates to the number of inspections and the number of seizures for each pathway.[110] Although this information on the program's activities is useful, it would be more meaningful if contextual information was also recorded. For example, if the department were to record the number of vessels that notify their arrival, it would be in a position to report the percentage of these vessels inspected each month.[111] This would provide additional insights into border operations activities. For seizures, the rate of seizure[112] would provide a more useful

[109] This involved inspecting 100 per cent of traditional visitor arrivals and 100 per cent of vessels, aircraft, passengers and cargo that were moving southward across zones and to mainland Australia. Bamaga and all 15 inhabited Torres Strait islands were involved in this operation, with, generally, three or four locations being the focus of each day's activities.

[110] Pathways include movements of traditional visitors, vessels, cargo and aircraft.

[111] Although there are high levels of compliance with notification requirements, there are cases where traditional visitors, vessels and aircraft arrive without notification. DAFF informed the ANAO that it recognises the value of having a comprehensive set of arrival data—including arrivals that did not notify—and is working to collect this arrival data through collaboration with other government agencies and maritime and aviation authorities.

[112] The number of seizures per 100 inspections.

indicator of performance, in contrast to the number of seizures, and would facilitate the risk-based allocation of resources. In addition, approach rate and performance baselines could be used to analyse performance by comparing seizure rates to the calculated approach rates and comparing inspection and seizure rates over time.

Scientific surveillance

6.10 In 2010, DAFF Internal Audit recommended that the department further investigate the development of performance indicators for scientific surveillance activities. NAQS management agreed to this recommendation and completed a draft set of scientific performance measures in March 2012. The primary information that DAFF has collected to monitor the performance of its scientific surveillance activities is: the number of scientific surveys conducted annually; and a summary of the number and type of significant detections and findings made during surveys. While this information provides insights into aspects of the performance of these activities, it does not inform an assessment of the overall performance of scientific surveillance activity.

6.11 The department's draft set of KPIs for measuring the performance of scientific surveillance activities covers elements of planning, delivery and reporting. The proposed indicators vary in their usefulness, with the majority focusing on measuring activity rather than effectiveness. For example:

- 'Has the target list been reviewed in the last financial year?';
- 'Has all the data been entered into the appropriate database?'; and
- 'Have surveillance frequencies been met in NAQS risk areas?'.

6.12 Although the target list should be reviewed annually and data should be entered into the appropriate database, this is part of good business practice and these measures have limited application as performance indicators of the surveillance system. However, the third measure—the alignment of actual survey frequency to those planned in the NAQS risk area document—is valid and useful for informing stakeholders and management about the extent to which surveillance priorities are being met.

6.13 DAFF indicated that developing performance indicators for surveillance activities is challenging because of the unknown approach rate of exotic pests, weeds and diseases and the specified pathways under its

jurisdiction.[113] The department has, however, explored alternative methodologies, such as recording negative data[114], to develop baseline information about the absence of exotic pests, weeds and diseases. DAFF informed the ANAO that the application of new assessment tools is also currently under investigation.[115] Given the challenges in this area, it may be timely for the department to consider engaging external expertise to assist in the development of a small number of key performance indicators that are both scientifically valid and useful for informing management decisions.

Public awareness

6.14 As outlined in Chapter 5, DAFF currently collects performance information for public awareness relating to the number of hours attributed to public awareness activities each month and the value stakeholders place on its public awareness activities.[116] DAFF informed the ANAO that a set of performance indicators for public awareness is currently being developed. Proposed performance indicators include a mix of effort and effectiveness measures that are likely to provide some useful information on the program's approach to public awareness and the outcome of activities. For example, one indicator being considered is the number of reports of exotic pests, weeds and diseases received from the public.

Performance data

6.15 Effective performance measures need to be supported by accurate data in order to provide an indicator of actual program performance. The ANAO's analysis of DAFF's border operations data identified some inaccuracies in the inspection and seizure numbers, particularly in the number of inspections for vessels and traditional visitors and the number of seizures for traditional visitors, vessels and aircraft. The ANAO focused on border operations data,

[113] In this context, the approach rate refers to the number of exotic pests, weeds and diseases that have the potential to reach mainland Australia each year.

[114] Negative data refers to results that found no presence of an exotic organism in an individual or sample population. DAFF indicated that negative data is currently difficult to validate, but a validation system is being developed at the state and territory level.

[115] Among the tools being considered by the department is the internationally developed OASIS tool, which is a semi-quantitative assessment tool of epidemiological surveillance systems in animal health.

[116] Stakeholder input is collected through occasional surveys of public awareness activity participants and through evaluation cards that are mailed out annually with the *Quarantine Top Watch!* calendars.

because the data for scientific surveillance and public awareness activities were limited.

6.16 Most NAQS officers based in the Torres Strait record inspection data on weekly log sheets, which are submitted to the central office on Thursday Island. The weekly inspection numbers are sent to Cairns, where the data is combined with mainland data into monthly statistics spreadsheets. These spreadsheets are the basis of the inspection data that are reported through monthly performance reports to key program stakeholders.

6.17 The ANAO's analysis of the data for traditional visitor inspections identified a number of inaccuracies, which were largely due to inconsistent recording and incomplete records. For example, the reported number of traditional visitor inspections did not include data for up to eight islands for several months in 2010–11. Establishing a more efficient data collection system has been challenging due to the limited IT access and rugged working conditions in the Torres Strait. The issue of inconsistent and incomplete data was compounded by a lack of quality assurance processes to identify and follow-up incomplete data. The department informed the ANAO that it was streamlining its data collection processes by developing a new data collection system, which requires officers on Torres Strait islands to report directly to the Cairns office.

6.18 The ANAO's analysis of the data for vessel inspections also identified inaccuracies. The ANAO compared the program's operational spreadsheets to its reported data for vessel inspections in Cairns for 2010–11. This analysis found that DAFF had over-reported vessel inspections by 159 inspections—DAFF reported that it had inspected 281 vessels, but the department had source data for 122 of these inspections. In contrast, the data for aircraft inspections had a 99 per cent level of accuracy—DAFF reported that it had inspected 858 aircraft in Cairns for 2010–11, and the department had source records for 865 aircraft inspections for the same time period.

6.19 The ANAO's review of seizure data for 2010–11 identified inconsistencies in the recording of seizure numbers. The department's policy is to record seizures by the number of different commodities seized, but the ANAO found that reported seizure numbers were calculated using a number of different methods, such as the number of items seized and the number of seizure events. During the audit, DAFF informed the ANAO that the department was reviewing the way in which officers record seizure data and that new techniques were being considered.

6.20 Given the variable quality of some of its operational and performance data, limited reliance can be placed on the data to inform management decisions and report program performance. DAFF indicated that it primarily relies on information from other sources, such as communication from its officers in the Torres Strait, for making management decisions, particularly relating to resource allocation.

Reporting performance

6.21 As outlined in Chapter 2, NAQS develops an annual program schedule (also referred to as the business plan) that outlines its key projects, priorities, measures of success, milestones and risks for the financial year. This is a departmental requirement and is completed using the endorsed DAFF template. NAQS management provides status reports on progress against the Program Schedule at the biannual meetings of the NAQS Steering Committee. These status reports include information on: program governance; scientific surveillance activities; significant detections; remote area operations; and stakeholder engagement.

6.22 In addition, DAFF executives receive monthly performance reports that are also sent to key internal and external stakeholders. These reports include performance data on Torres Strait border management, a summary of scientific surveillance activities and the schedule of public awareness and Indigenous ranger activities. W the data quality issues outlined above limit the value of the performance information, overall, the monthly performance reports provide a valuable compendium of NAQS activities.

6.23 As NAQS is not an identified program in the department's PBS, its performance is not included in the department's annual report. The department does, however, provide a high-level narrative on the NAQS program, including significant detections that were made during the year. DAFF also provides information on the performance of NAQS to parliamentarians upon request and through the Senate Estimates process.

Conclusion

6.24 Although DAFF has established elements of an effective performance measurement and reporting framework, there is scope for improvement. While the primary purpose of the NAQS program is generally understood within DAFF and reflected in the program's reported activities, the department has not articulated a clear objective for the program.

6.25 The absence of a clear objective has made the development of performance measures challenging. As part of the department's current review of the program's performance measures, there would be merit in the department initially establishing a small number of performance measures for each activity area that are aligned to the clearly articulated program objective. Focusing resources on the key aspects of the program's performance would better place the department to report on performance. This approach would allow the department to progressively build the program's performance reporting capacity. Once an initial set of measures are in place, the department should consider the addition of further qualitative measures to enhance the assessment of program performance.

6.26 The ANAO analysed the performance data currently collected for the program's performance measures and identified inaccurate and incomplete data sets for border operations, particularly the number of inspections and seizures. This issue was compounded by limited quality assurance processes for identifying inaccurate and incomplete data.

6.27 The establishment of a clearer NAQS objective and relevant performance measures, supported by accurate performance data would better place the department to monitor performance and would enable the program to more effectively demonstrate its achievements.

Recommendation No.3

6.28 To inform management decisions and improve accountability, the ANAO recommends that the Department of Agriculture, Fisheries and Forestry:

- articulate a clear objective for NAQS;
- build on current work to develop performance measures that assess the extent to which NAQS is achieving this objective; and
- collect and analyse relevant and accurate performance data.

DAFF response: Agreed. The department acknowledges that Recommendation 3 will assist in developing more meaningful performance measurements based on clearly defined objectives to better inform management decisions and accountability for NAQS program activities.

Ian McPhee

Auditor-General

Canberra ACT

20 June 2012

Appendices

Appendix 1: Agency response

Australian Government
Department of Agriculture, Fisheries and Forestry

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4 JUN 2012
9.30

ACTING SECRETARY

REF: EXEC2012-03420

Ms Barbara Cass
Group Executive Director
Performance Audit Services Group
Australian National Audit Office
10 National Circuit
BARTON ACT 2601

Dear Ms Cass

Administration of the Northern Australian Quarantine Strategy

Thank you for your letter of 8 May 2011 providing the Department of Agriculture Fisheries and Forestry with the proposed performance audit report of the administration of the Northern Australian Quarantine Strategy for comment.

The department welcomes the ANAO's acknowledgement that '*DAFF has implemented effective arrangements to administer the NAQS program in line with the department's risk-based approach to biosecurity*' noting the unique and challenging operating environment in which program services are delivered. The department further notes the ANAO's statement that '*underpinning these arrangements is a sound governance framework*'.

The department accepts the ANAO's findings that there are some aspects of the program that could be improved but notes that there is no evidence that suggest that these aspects have in any way compromised the effectiveness of NAQS' Biosecurity activities. The department agrees that the suggested improvements will better inform management decisions on certain issues and will enable the department to better demonstrate the achievements of the NAQS program.

An overall departmental response, including responses to the recommendations and a summary, are enclosed for publication in the final report.

Finally, I would like to acknowledge the cooperation and assistance provided by members of your audit team.

Thank you for the opportunity to comment on the audit report.

Yours sincerely

Phillip Glyde

30 May 2012

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Department of Agriculture, Fisheries and Forestry Comments on the ANAO Proposed Report on the Administration of the Northern Australia Quarantine Strategy (NAQS)

General Comments

The department thanks the Australian National Audit Office (ANAO) for its review of animal and plant health surveillance and quarantine operations delivered via the Northern Australia Quarantine Strategy (NAQS). The ANAO's three recommendations and findings align closely with the priorities for business improvement identified by the department. In most cases, these improvements are already in the process of being addressed, or form part of broader reforms the department is pursuing in response to the review *One Biosecurity: a working partnership* (Beale et al, 2008) and related government decisions. In particular, the department notes that the ANAO recommendations will assist in promoting the focus on ensuring meaningful data sets and performance measures as appropriate adjuncts to its biosecurity reform initiatives.

The department welcomes the ANAO's acknowledgement that '*DAFF has implemented effective arrangements to administer the NAQS program in line with the department's risk-based approach to biosecurity*' noting the unique and challenging operating environment in which program services are delivered. The department further welcomes the ANAO's statement that '*underpinning these arrangements is a sound governance framework*'.

The department 's risk-based approach to Biosecurity in northern Australia includes a co-ordinated program of animal and plant health surveillance guided by science-based evaluations of biosecurity threats, and takes into account the arrival pathways arising from Northern Australia's unique geography. These surveillance measures are underpinned by targeted public awareness and other stakeholder engagement activities focussed on the early reporting of biosecurity threats and compliance with applicable legislative requirements.

The department's biosecurity framework specific to the Torres Strait pathway includes co-ordinated strategies characterised by:

- a multi-tiered approach to quarantine intervention at air and sea arrival and departure points. Services are delivered via a network of community-based biosecurity officers with a significant majority of staff sourced from local Indigenous communities. Supervisory networks and reporting structures for the biosecurity officer network align to prevailing geographical features and cultural associations providing for efficiencies in service delivery within each 'cluster' of islands throughout Torres Strait;

- collaborative arrangements with other Commonwealth border agencies – providing efficiencies in service delivery and allocation of resourcing;

- participation in inter-agency initiatives pertaining to the broad spectrum of health, border security, biosecurity and community engagement measures arising from the Torres Strait Treaty.

RECOMMENDATION 1

The department acknowledges Recommendation 1 and associated findings, which focus on the need to improve systems for recording biosecurity surveillance outcomes and, more specifically, tracking of specimens through the process of collection, analysis and reporting to stakeholders.

Noting the ANAO findings that NAQS '*has an established process in place for reporting suspect pests and diseases and confirmed detections that generally meet the expectations of the program's key biosecurity stakeholders*' the department does not consider that the weaknesses the ANAO identified in the department's management of some scientific data has adversely impacted the effectiveness of its surveillance planning and delivery operations. However, the department agrees that enhanced data recording and monitoring systems will improve its capacity to report on and analyse data collected through its surveillance activity.

Aligned to the recommendation, the department will strengthen existing arrangements for the management of data generated through NAQS surveillance and monitoring activities. The department will achieve these improvements through implementing electronic systems that enhance traceability of diagnostic specimens and including NAQS surveillance outputs within national data storage systems appropriate to stakeholder requirements. It will also refine existing data repositories and reporting software through the department's Biosecurity Reform Implementation Plan.

RECOMMENDATION 2
The department acknowledges Recommendation 2 and associated findings, which focus on the need to improve elements of the existing data collection, quality assurance and analysis systems underpinning its Torres Strait border operations.

The department notes that the decision-making framework for its Torres Strait border operations already includes consideration of a range of data obtained through departmental operations, as well as sourced from external providers as available. Other significant factors necessarily accounted for in the department's decision-making and resource deployments include:

- limited information on the prevalence and location of target exotic pest, weed and disease organisms in Papua New Guinea and other northern neighbours.
- limited availability of total arrivals data for significant elements of the risk pathway, particularly data specific to interzonal movements where no existing Industry or other border agency reporting requirements apply;
- prevailing cultural protocols and stakeholder engagement requirements.

The department notes that the information limitations outlined above have, over time, necessitated biosecurity strategies and associated data collection predominantly targeted towards maximum intervention on each arrival pathway subject to available resourcing. The department does not believe that there is any evidence that the data limitations have had any adverse impact on the effectiveness of its Biosecurity management in the Torres Strait, but agrees that improved data collection and integrity will assist in better informing management decisions and will enable the department to better demonstrate the achievements of the NAQS program. The department is committed to the collection and assessment of meaningful risk profiling and movement data as enablers to its border management strategies.

The department is implementing a range of measures in support of its risk-based biosecurity functions appropriately targeted to threats across the offshore, border and post-border continuum. The department's priorities specific to the Torres Strait pathway include progressive redirection of biosecurity officer resourcing to the highest risk islands in Torres Strait, development of improved risk profiles relating to each arrival pathway, more targeted focus of detector-dog and officer screening resources based on risk, and the redeployment of vessel assets in support of strategic interventions based on risk. Additional measures being implemented in accordance with the department's risk-based approach include:

- the development of revised reporting requirements and clarification of conditions for traditional and other movements within replacement legislation for the *Quarantine Act 1908*;
- working in collaboration with other Commonwealth agencies and industry bodies to obtain or establish additional data in support of improved risk profiling and performance measures;
- ongoing collaboration with biosecurity authorities in Papua New Guinea and other countries for the purposes of determining improved risk profiles on biosecurity risks in PNG's Western Province and other regions critical to the Torres Strait pathway.

In implementing reforms to its biosecurity framework, the department agrees with the ANAO's findings on the need for *'more meaningful information to inform management decisions'* regarding its Torres Strait border operations. Aligned to the ANAO's recommendations, the department will enhance its existing border management arrangements to include:

- improved quality assurance arrangements particular to Torres Strait arrivals and performance data;
- calculation and enhanced analysis of inspection and seizure rates against defined baselines for each Torres Strait arrival pathway where data can be obtained cost effectively.

RECOMMENDATION 3
The department acknowledges Recommendation 3 and associated findings which focus on the need for meaningful performance measurements based on clearly defined objectives to better inform management decisions and accountability for NAQS program activities.

NAQS operations are delivered in accordance with the department's risk-based approach to biosecurity surveillance and quarantine operations. This approach necessarily requires degrees of flexibility in targeting animal and plant health surveillance and quarantine services aligned to changing risk profiles and associated objectives over time. Notwithstanding this consideration, the department agrees with the ANAO's findings regarding the inherent benefits to program performance measurement and decision-making arising from collection and evaluation of meaningful performance data matched to clearly defined objectives.

The department welcomes the ANAO's acknowledgement of current work to develop useful performance measures for NAQS activity, and will build upon existing arrangements through completing updates to the NAQS performance measurement system aligned to a more specific articulation of program objectives. In specifying these objectives, the department will have due regard to relevant elements of the Biosecurity Reform Detailed Implementation Plan, and the Intergovernmental Agreement on Biosecurity as pertaining to potential impacts on the scope of NAQS responsibilities.

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