



Audit Report No.46 2011–12

Administration of the Northern Australia Quarantine Strategy

Introduction

- 4.1 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.¹
- 4.2 In 1989, the Northern Australia Quarantine Strategy (NAQS) program was established within the Department of Agriculture, Fisheries and Forestry (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.²

1 ANAO Audit Report No.46 2011-12, p. 11.

2 ANAO Audit Report No.46 2011-12, p. 16.

- 4.3 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

The ANAO Audit

Audit objective and scope⁴

- 4.4 The objective of the audit was to assess the effectiveness of DAFF's administration of NAQS. The Australian National Audit Office (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;
 - 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.
- 4.5 The audit did not examine DAFF's arrangements for managing the response to biosecurity emergencies when exotic pests, weeds and diseases are detected.

3 ANAO Audit Report No.46 2011-12, p. 13.

4 ANAO Audit Report No.46 2011-12, pp. 15-16.

Overall audit conclusion⁵

- 4.6 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, to state, territory and Australian Government biosecurity stakeholders.
- 4.7 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.
- 4.8 In general, the audit found that 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.
- 4.9 The ANAO found, however, that there were 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.

5 ANAO Audit Report No.46 2011-12, p. 16.

ANAO recommendations

4.10 The ANAO made three recommendations, each of which were agreed to by DAFF.

Table 4.1 ANAO recommendations, Audit Report No.46 2011-12

1.	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: <i>Agreed.</i>	
2.	To provide meaningful data to inform border management decisions and measure performance, the ANAO recommends that the Department of Agriculture, Fisheries and Forestry: <ul style="list-style-type: none"> • 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 to establish baselines for each Torres Strait island pathway.
DAFF response: <i>Agreed.</i>	
3.	To inform management decisions and improve accountability, the ANAO recommends that the Department of Agriculture, Fisheries and Forestry: <ul style="list-style-type: none"> • 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: <i>Agreed.</i>	

The Committee's review

4.11 The Committee held a public hearing on 10 October 2012 with representatives from the following organisations:

- The Australian National Audit Office
- The Department of Agriculture, Fisheries and Forestry.

4.12 The Committee took evidence on the following issues:

- DAFF's risk management framework
- Data management and information technology support for NAQS
- Seizure rates
- Community engagement
- Future challenges.

DAFF's risk management framework

- 4.13 Identifying and evaluating biosecurity risks is a key priority of the NAQS program. 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 then used to guide the planning and delivery of surveillance efforts.⁶
- 4.14 The NAQS zone is divided into risk areas, which are each given a relative risk rating for animal and plant health, and are surveyed at the following rates:
- 'high' risk rating areas are surveyed at least annually;
 - 'medium' risk rating areas are surveyed every two to three years;
 - 'low' risk rating areas are surveyed every three to five years; and
 - 'very low' risk rating areas are surveyed once every five years.⁷
- 4.15 At its appearance before the Committee, DAFF outlined the evolution from 'mandatory intervention' to the current risk based method that governs DAFF's approach to quarantine. DAFF noted that, in the early part of the 2000s, over 80 per cent of bags processed through airports were assessed, and that most of the time, there was a low rate of detection of quarantine material.⁸
- 4.16 The approach now taken by DAFF is based on using data to determine areas of greatest risk, and targeting the higher risk areas. DAFF identified improvements in data collection and data analysis as being key to improving risk assessments.⁹

Data management and information technology support for NAQS

- 4.17 A significant component of NAQS scientific work is directed at the identification and diagnosis of samples collected through field surveys.
- 4.18 The scientific data collected by NAQS officers are manually entered into the NAQS Database using data entry templates for each sample collected. Survey data is required to be entered into the NAQS Database within three months of survey completion.¹⁰

6 ANAO Audit Report No.46 2011-12, p. 56.

7 ANAO Audit Report No.46 2011-12, pp. 59-61.

8 Ms Mellor, *Committee Hansard*, Canberra, 10 October 2012, p. 5.

9 Ms Mellor, *Committee Hansard*, Canberra, 10 October 2012, p. 6.

10 ANAO Audit Report No.46 2011-12, pp. 69-70.

- 4.19 During the audit, DAFF advised the ANAO that the current database presented constraints to improving data management and analytical capability. These constraints included:
- the inability to set up alerts for overdue tasks;
 - slow network speeds;
 - lack of capacity to spatially map the coverage of survey work; and
 - data corruption.¹¹
- 4.20 To address these information technology (IT) constraints, DAFF advised the ANAO that work was underway to migrate to a new data sharing system known as BioSIRT – a software package jointly designed by federal, state and territory biosecurity agencies to manage biosecurity data. The ANAO reported that DAFF was developing a data migration plan and a series of templates to log data, but that there was no set date for the migration of NAQS data to BioSIRT.¹²
- 4.21 At the public hearing, the Committee discussed the information technology platform that supported NAQS, noting the importance of reliable, up-to-date data to DAFF's risk based approach to assessing biosecurity threats.
- 4.22 DAFF advised the Committee that the planned IT updates to support NAQS were related to broader updates within the department, and that 'the overall full implementation will be some years away'.¹³

Seizure rates

- 4.23 The audit found that while DAFF collated data on arrivals in Australia, the department did not use this information to calculate inspection and seizure rates. The ANAO suggested that this additional analysis would enable DAFF to establish baselines and monitor trends and border management performance over time.¹⁴
- 4.24 At the hearing, the Committee expressed concern that DAFF was still not calculating figures to determine what percentage of inspections resulted in the seizure of quarantine material – data that would assist in assessing risk. DAFF explained that no data on seizures was collected during the

11 ANAO Audit Report No.46 2011-12, pp. 69-70.

12 ANAO Audit Report No.46 2011-12, p. 70.

13 Ms Mellor, *Committee Hansard*, Canberra, 10 October 2012, pp. 2-3.

14 ANAO Audit Report No.46 2011-12, p. 89.

period of ‘mandatory intervention’ described above, as under that approach all movements were stopped and checked. Accordingly, during that time there was no need to calculate seizure data to target risk.¹⁵

4.25 Further, DAFF reported that there was an older ‘interceptions database’ that detailed interceptions of quarantine material, but that it was ‘clunky’ and not easily accessible for users. To keep it updated, officers would have to double-enter data into the regular databases, and also into the interceptions database.¹⁶

4.26 The Committee was advised that while there were quality assurance systems in place to ensure that databases were reliable, these systems were still dependent on data being appropriately handled:

... we do have various checks associated with inspection and seizure data that is collected, but, because they are in the main reliant on manual collection – use of spreadsheets, handing on data from our remote based officers to our central offices where the data is collated – the ANAO have rightly identified some areas where there are some improvements that can be made in that transfer of data.¹⁷

4.27 DAFF indicated that improvements to its IT systems would, when coupled with the implementation of better quality assurance measures, provide more information for the risk management framework and more easily enable the calculation of statistics like seizure rates. However, the Committee was advised that full implementation of the ANAO’s recommendations would take some years,¹⁸ and was dependent on the implementation of IT changes as part of the department’s broader strategy for IT improvements.¹⁹

4.28 DAFF noted that while IT changes would take time, its business strategy was already taking into account the recommendations of the ANAO, with a view to ensuring the strategy would integrate with new IT systems when they were implemented:²⁰

... the investments that we are making in IT at the moment are to get stability and access so that we can actually build the tools into that, rather than build tools that no-one can use. The strategy for

15 Ms Mellor, *Committee Hansard*, Canberra, 10 October 2012, pp. 5, 6.

16 Ms Mellor, *Committee Hansard*, Canberra, 10 October 2012, p. 5.

17 Mr Korff, *Committee Hansard*, Canberra, 10 October 2012, p. 5.

18 Ms Mellor, *Committee Hansard*, Canberra, 10 October 2012, pp. 1–2.

19 Mr Korff, *Committee Hansard*, Canberra, 10 October 2012, p. 5.

20 Ms Mellor, *Committee Hansard*, Canberra, 10 October 2012, p. 6.

these guys at the moment will be to enhance the manual work as we move towards more reliable and accessible IT.²¹

Community engagement

- 4.29 One of the unique features of NAQS is the involvement of members of the community in Northern Australia in assisting NAQS officers by reporting unorthodox movements and potential plant threats. The Committee was advised that DAFF used this information to prepare risk based surveillance operations.²²
- 4.30 NAQS has also engaged Indigenous ranger groups under contractual and fee-for-service arrangements to assist in public awareness, plant host mapping, bat colony mapping, and marine debris surveillance.²³
- 4.31 DAFF informed the Committee that the local land knowledge of community groups was a valuable resource in identifying potential threats, and that the provision of species and weed identification training enabled these groups to provide even more useful assistance to NAQS officers.²⁴
- 4.32 DAFF also noted the assistance provided by contracted community groups, and described the relationship between these groups and NAQS officers:

The people in the community groups that we contract with are trained. They use PDAs [personal digital assistants] or other data input tools in survey and management work to provide us with data. We have officers who go out to the community groups on a regular basis with the activity plan for the surveys and activities that need to be done. These officers also provide training and sometimes work directly with the community groups where they are doing the work.²⁵

Future challenges

- 4.33 The Committee asked DAFF to identify the biggest challenges in relation to biosecurity and quarantine issues in the Northern Territory.

21 Ms Mellor, *Committee Hansard*, Canberra, 10 October 2012, p. 6.

22 Mr Korff, *Committee Hansard*, Canberra, 10 October 2012, p. 3.

23 ANAO Audit Report No.46 2011-12, pp. 98-99.

24 Ms Mellor, *Committee Hansard*, Canberra, 10 October 2012, p. 3.

25 Ms Mellor, *Committee Hansard*, Canberra, 10 October 2012, p. 3.

- 4.34 In respect to operational challenges, DAFF indicated that:
- ... the challenges will remain the surveillance work, keeping our eye on the new things that are emerging offshore that present a risk onshore and continuing to respect the traditional movements in the Torres Strait and making sure we do not try to regulate those in a way that is not respectful of the traditional zones.²⁶
- 4.35 DAFF also highlighted the ongoing budgetary challenges of managing the strategy in remote areas:
- The CPI [Consumer Price Index] increases you normally get in things are pretty tough to manage in the north when getting aviation fuel, getting access to helicopters and getting access to barges to move fuel when you are doing major surveillance activity. It is not just the price; it is the availability of infrastructure. These are normal challenges for any department but they are exacerbated when you are looking at the sort of zone we work in.²⁷
- 4.36 In terms of specific threats to Northern Australia, DAFF identified the following high-priority disease risks which were regularly monitored for by the department:²⁸
- Foot-and-mouth disease
 - Avian influenza and 'swine flu'
 - Rabies
 - Plant diseases
- 4.37 Asked whether it had adequate resources to respond to problems that are detected, DAFF noted that states and territories were responsible for responding to threats onshore under cost-sharing arrangements. It added that whether there were enough resources would 'depend on the nature of the incursion or the finding', with some threats, such as myrtle rust, being 'impossible technically to eradicate'.²⁹
- 4.38 DAFF further indicated that severe animal disease posed the biggest risk in Northern Australia, and advised that 'our ability as a country to

26 Ms Mellor, *Committee Hansard*, Canberra, 10 October 2012, p. 2.

27 Ms Mellor, *Committee Hansard*, Canberra, 10 October 2012, p. 2.

28 Ms Mellor, *Committee Hansard*, Canberra, 10 October 2012, p. 4.

29 Ms Mellor, *Committee Hansard*, Canberra, 10 October 2012, p. 7.

resource eradication will always be a difficult task, and it is not just the money; it is the size.'³⁰

Committee comment

4.39 The Committee notes the ANAO's findings that the governance arrangements that support the NAQS program 'provide a sound framework to guide the implementation of the program.'³¹ Given insufficient governance arrangements are one of the most commonly identified areas for improvement by the ANAO, the Committee is heartened by the audit's positive findings on DAFF's management of NAQS.

Risk management and seizure rates

4.40 The Committee notes the change in approach to quarantine that has taken place over the last decade from 'mandatory intervention' to a risk based approach. Risk based approaches ensure that resources can be directed to areas of most need, and this appears to be the best way to monitor movements of goods and people across Northern Australia.

4.41 However, the Committee also considers the importance of accurate, well-maintained data to properly guide a risk based approach, and encourages DAFF to ensure its databases are as accurate as possible – given the comparatively antiquated databases currently being utilised.

4.42 It was of some concern to the Committee that DAFF was not using the existing interceptions database to calculate at least approximate seizure rates. This statistic was not collected and used to establish baselines and monitor trends and border management performance over time. Having access to these figures and trends would help to inform DAFF officers when assessing risks, and accordingly, the Committee recommends:

30 Ms Mellor, *Committee Hansard*, Canberra, 10 October 2012, p. 7.

31 ANAO Audit Report No.46 2011-12, p. 46.

Recommendation 8

That, using information currently available, the Department of Agriculture, Fisheries and Forestry calculate and maintain inspection and seizure rates of quarantine material for areas covered by the Northern Australia Quarantine Strategy zone, and use this information to inform management decisions regarding border operations.

Information technology

- 4.43 It is clear that information technology provides an extremely important support to NAQS. It enables data logged by NAQS officers to be analysed by DAFF officials to detect potential threats and identify trends, informing the department's risk-based approach to quarantine management.
- 4.44 Accordingly, the Committee welcomed the advice that funding was available for enhancing DAFF's IT capacity to provide more reliable systems for logging NAQS data and allowing for analysis over time. Given the NAQS program is supported by an older database, and in some cases spreadsheets, a new IT system will be worthwhile development to further enhance the NAQS program.
- 4.45 The Committee was also pleased to hear that the new BioSIRT database has been established in conjunction with state and territory biosecurity agencies. However, the Committee notes the potential for a database for all federal, state and territory biosecurity agencies to not meet some of the individual needs of each party, and encourages the department to ensure that all of the requirements of staff working on the NAQS program are met during the continuing development of the system.
- 4.46 The Committee would like to ensure that DAFF takes on board all of the observations made by the ANAO concerning deficiencies in NAQS databases, and recommends:

Recommendation 9

That the Department of Agriculture, Fisheries and Forestry ensure that support for Northern Australia Quarantine Strategy activities is a high priority during the continuing development of the BioSIRT database in order to address the deficiencies identified by the Australian National Audit Office and in the Joint Committee of Public Accounts and Audit's review.

- 4.47 The Committee was somewhat concerned to hear that IT support for the NAQS program is dependent on a broader IT reform program in DAFF, which may delay improvements, but understands the efficiencies that DAFF will achieve by this integration.

Community engagement

- 4.48 The Committee was pleased to hear about the level of involvement of members of local communities across the NAQS zone. The Committee welcomes the ANAO finding that NAQS community engagement:
- was supported by a communication strategy;
 - embraced public awareness campaigns;
 - involved an ongoing presence in Indigenous communities with twice-yearly visits; and
 - was moving towards targeting interactions with the community using a risk based approach.³²

Future challenges

- 4.49 The Committee acknowledges the future challenges faced in the management of NAQS, and believes that with appropriate support from the department and implementation of the ANAO and JCPAA recommendations, NAQS will continue to appropriately manage threats to Australia's biosecurity.

32 ANAO Audit Report No.46 2011-12, p. 91-98.