



Australian Government

National
Landcare
Programme

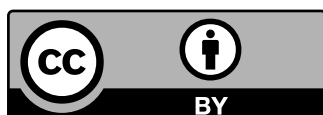


Report on the Review of the National Landcare Program

The Department of the Environment and Energy and the
Department of Agriculture and Water Resources



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Acknowledgement of Traditional Owners and Country

The Department of the Environment and Energy and the Department of Agriculture and Water Resources acknowledge the traditional owners of country throughout Australia and their continuing connection to land, sea and community.

We pay our respects to them and their cultures and to their elders both past and present.

Report on the Review of the National Landcare Program

The Department of the Environment and Energy and the
Department of Agriculture and Water Resources



'It is [the National Landcare Advisory Committee's] view that this thirty years of investment has created a profound legacy.

It is the foundation upon which we now farm and manage our natural resources.

It has created lasting and real change in the way we manage our natural resources, and how we generate productive economic and social outcomes from this base.

It has been described as a movement, a philosophy and an ethos, but it has created much more than that.

It is now widely accepted as being one of the foundations on which we can promote our clean, green credentials to world markets, and is in a position to support the development of 'Brand Australia', and its underpinning for the competitiveness of Australian agriculture.

It has created deep knowledge and understanding of how natural systems work. It is this understanding that has helped Australian farmers to adapt and manage in volatile and rapidly changing climates and world markets. It has helped farmers to stay productive and sustain their businesses, families and communities in the face of great global market and climatic changes. It has created a competitive edge for our rural and regional agri-businesses. It has enabled Australian agribusinesses to stay competitive without the trade protection experienced by farmers in other countries.

Thirty years of investment has also enabled two generations of Australians to play a lead role in protecting and rehabilitating Australia's environment – our biodiversity, waterways, marine environments and our cultural heritage. This has involved hundreds of thousands of people working across the country on thousands of projects to improve the environment.'

National Landcare Advisory Committee, 2016



*Farmers helping protect threatened ecological communities like box gum grassy woodland.
Photo: © Department of the Environment and Energy*



Executive summary

Soils, water, and a diverse range of native plants and animals comprise Australia's unique environment and natural resources. They provide for the production of food, fibre, water, medicines and genetic resources; the regulation of climate, water flows, erosion and pollination; and cultural services such as recreation, ecotourism, aesthetic and heritage values.

Agricultural food and fibre production is expected to be worth \$60 billion in 2016–17; weeds costs farmers \$4 billion per year in control and lost production costs; nature based tourism is valued at more than \$41 billion per year; and the ABS has estimated the value of the nation's environmental assets to be \$5.8 billion at 30 June 2015.

The condition of our natural resources and the services they deliver remain at risk from a long history of human use and modification including large-scale clearing of vegetation, introduction of pest weeds and animals, changes in water quality and flows, changes to fire regimes and a changing climate.

Australia has obligations under international conventions that relate to the management of our natural resources, including those to protect biodiversity, soil, wetlands, and World Heritage Areas, and to address climate change.

The National Landcare Program is the Australian Government's primary commitment to natural resource management and is investing \$1 billion over four years from 2014–15. The program is delivered through four main appropriations of which the Natural Heritage Trust is the largest. Improving and protecting the condition of natural resources is a slow process and requires long-term, on-ground planning, investment and delivery. The National Landcare Program and its predecessors have been structured to achieve this through building knowledge and engaging the community and industry in projects to change those land management practices needed to improve the condition of soil, water and biodiversity.

The National Landcare Program comprises multiple sub programs, including: the Regional Stream, which supports Australia's 56 regional natural resource

management bodies; and the National Stream, which supports sub-programs such as the World Heritage Grants, small grants, 20 million Trees, and the Indigenous Protected Areas program.

This funding helps support local environmental and sustainable agriculture projects, and complements funding for the Reef Trust and the Land Sector Package. It also delivers on other Government priorities, such as Indigenous advancement.

This review of the National Landcare Program considered evidence obtained in 2016 from sources including individuals, community and industry groups, government agencies and expert advisory groups. It will inform the government's consideration about investment in natural resource management from 2018.

Its findings for each terms of reference are:

Outcomes from the National Landcare Program and its predecessor programs

- The National Landcare Program and previous Australian Government natural resource management programs have achieved significant benefits for agricultural productivity, environmental conservation and community engagement, with flow on economic and social benefits.
- The investment has contributed to the increased adoption of better land management practices, leading to improved agricultural productivity, a 'clean and green' brand that assists access to markets and improved farm-gate returns.
- The Australian Government's investment through these programs into soil health has improved soil acidification, water and wind erosion, and organic carbon depletion in many regions.
- Current and past programs have successfully removed pest animals and weeds, which are major threats to both agricultural productivity and threatened plants and animals, and developed and extended new control methods.

- This investment has provided improvements to the condition of natural assets, reduced threats to native plant and animal species and iconic places, and contributed to Australia meeting its international obligations.
- These programs have helped to protect iconic places, such as the Great Barrier Reef, and to protect our threatened species by extending our system of protected areas and addressing major threats like changes in water quality and flows and altered fire regimes.
- Australian Government investment in natural resource management has created strong and interconnected local and regional networks and organisations that have integrated conservation, community, farming and government interests.
- These improvements to the quality of our environment and natural resources have created social and economic benefits, such as increased community well-being and employment streams and training opportunities, including for Indigenous people.
- The problems that the investment addresses require long-term and sustained action, and continued investment is required to protect the condition of the natural assets and productive systems.
- Farm-gate profits, productivity and market access has improved because of the delivery of the program, and the program has supported the development and adoption of new and innovative farm practices and technologies.
- The program is protecting iconic places and threatened plants and animals, with more than 450 projects helping to protect these important environmental assets.
- The program is effectively managing natural resource management issues at a large regional scale. For example, 30 of the 56 regional bodies are collaborating with their neighbours to deliver projects across regional boundaries.

The effectiveness and efficiency of regional natural resource management organisations in delivering the National Landcare Program's intended outcomes

The effectiveness of the National Landcare Program in delivering agriculture and environmental outcomes, as well as complementary benefits

- The review found the National Landcare Program has been effective in meeting its strategic objectives.
- The program is increasing the uptake of more sustainable land management practices, with more than 9.5 million hectares of land managed to improve natural resources with complementary environmental, agricultural productivity and social outcomes.
- The program is successfully engaging communities in land management, with more than three million volunteers involved in projects and increased Indigenous involvement in natural resource management.
- There continues to be strong support, from both the community and experts in natural resource management, for regional scale natural resource management that acknowledges local conditions and addresses community needs.
- The Regional Stream of the program supports connection to, and engagement of local communities, in the delivery of on-ground activity and capacity building, and regional planning processes.
- Regional planning is an effective mechanism in connecting national priorities with community priorities and needs, and strategically targeting investment decisions.
- Current Regional Stream funding allocations are based on historical government priorities, and future allocations should reflect current and future investment priorities.
- The Performance Framework for Regional Natural Resource Management Organisations should continue to be implemented and be refined to help improve governance, delivery and capacity building functions.
- There are opportunities for administrative costs in the Regional Stream to be reduced and other efficiencies gained. Examples include using a shared services model, regional bodies working together in consortiums, and considering the

number of regions required to deliver across the country. Broader testing of the market would assist in ensuring efficient and effective program delivery.

Approaches to and effectiveness of engagement with the community and with industry for the National Landcare Program

- The National Landcare Program builds on the world-leading Landcare model that brings communities and other stakeholders together to share learnings and address local natural resource issues.
- The term Landcare broadly represents a local approach to private and public land management that is collaborative and integrated.
- There is high awareness of the value of the Landcare movement and activities across Australia, and strong support for continuing support of this approach with refinements to better meet the needs of modern landholders and volunteers.
- The review found support for an increased focus on concepts like 'resilience' and 'adaptive capacity'.
- Community engagement is an important element in delivering effective natural resource outcomes, and should be included at the design, planning and delivery phases of a project.
- The review found that the National Landcare Program has been effective in engaging the community, with the majority of all respondents to the stakeholder survey satisfied with their engagement in the program.
- Expanded partnerships to include better connections with organisations such as industry bodies and research organisations would facilitate increased sharing of expertise and knowledge.
- The review identified that Australian Government funding continues to leverage other government and private sources through both cash contributions and the volunteer network.
- There is an opportunity to further leverage investment from philanthropic donations, state and territory governments, corporate sponsorship, and market instruments, to help deliver natural resource management priorities across the country.

The effectiveness, efficiency and appropriateness of the delivery arrangements for the National Landcare Program, including Australian Government governance

- The continued use of a mix of delivery mechanisms and flexible delivery approaches for future natural resource management programs would deliver effective investment, with further clarity on how the elements of the program fit together.
- The review found that stakeholders strongly support regional scale natural resource management that acknowledges local conditions, with improvements needed to improve effectiveness and efficiency.
- Many sub-programs were significantly oversubscribed, demonstrating a strong interest by the community in natural resource management.
- Long-term funding provides greater certainty for the delivery and management of projects and outcomes, reduced costs to recipients and government, and leads to stronger on-ground outcomes.
- There remains strong support for small grants that target issues of importance to the community. Greater efficiency in administration and increased strategic oversight would improve these grants.
- Procurements and reverse auctions offer effective and efficient mechanisms to deliver on-ground outcomes in some instances.
- The current National Landcare Program objectives appropriately allow communities to meet their priorities.
- Further work is required to ensure the program's outcomes are measurable and reportable.
- The review supported refinements to the online Monitoring, Evaluation, Reporting and Improvement Tool to better capture critical outcome and impact information, and social and economic benefits of investment.



Early season habitat burning in the Kimberley region
Photo: © Nick Rains

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*West Beach Area, Macquarie Island World Heritage Area
Photo: Melinda Brouwer © Department of the Environment and Energy*





1. Introduction

The National Landcare Program is a key element of the Australian Government's commitment to natural resource management. The Australian Government is investing \$1 billion through this program over four years from 2014–15, through four main appropriations of which the Natural Heritage Trust is the largest.

The program comprises a range of subprograms, including the Regional Stream, which supports Australia's 56 regional natural resource management bodies, and the National Stream, which supports sub-programs such as World Heritage Grants, small grants, 20 Million Trees, Reef 2050 Plan, and the Indigenous Protected Areas program.

This funding helps support local environmental and sustainable agriculture projects, and also delivers on many other Government priorities, such as Indigenous advancement. It also complements funding for the Reef Trust and the Land Sector Package.

Section 3 provides further detail about the program's funding, objectives, and architecture.

Background on the Review of the National Landcare Program

The Government conducted a review in 2016 to inform future investment in natural resource management. This review reports on the following scope, as set out in the Terms of Reference at Attachment A:

- Outcomes from the National Landcare Program and its predecessor programs
- The effectiveness of the National Landcare Program in delivering agriculture and environmental outcomes, as well as complementary benefits
- The effectiveness and efficiency of regional natural resource management organisations in delivering the National Landcare Program's intended outcomes
- Approaches to and effectiveness of engagement with the community and with industry for the National Landcare Program

- The effectiveness, efficiency and appropriateness of the delivery arrangements for the National Landcare Program, including Australian Government governance.

Evidence considered in this review includes:

- more than 900 responses from a stakeholder survey undertaken during 2016
- independent financial analysis of Natural Heritage Trust funding from 1996–97 to 2017–18
- advice from the National Landcare Advisory Committee
- analysis and advice from natural resource management experts through a workshop run by the Australian National University's Fenner School
- submissions from government and non-government organisations
- advice from government program delivery officers
- analysis of project-based monitoring and reporting data and case studies from the National Landcare Program and previous natural resource management programs
- earlier program reviews, evaluations and reports
- formal and informal discussions with a range of interested stakeholders
- other relevant sources and literature.

Why manage our natural resources?

Soils, water, and a diverse range of native plants and animals comprise Australia's unique environment and natural resources. A long history of human use and modification have caused significant impact and include large-scale clearing of vegetation, introduction of pest weeds and animals, changes in water quality and flows and altered fire regimes.

More than 130 of Australia's known species have become extinct since European settlement, and the list of those threatened with extinction continues to grow.¹ The productive capacity of our agricultural land has declined, as we developed farming systems

suitable to our soil and climate, and as a result of the introduction of new pest plants and animals.

The quantity and quality of services provided by the environment to the Australian community through ecosystems depend on the condition of our natural resources, especially the soil, water, vegetation and animal populations.

Ecosystems are groups of living plant and animal communities and their non-living environment interacting as a system. Ecosystems provide services that benefit humans, including:

- Provision of the conditions for the supply of food, fibre, water, natural medicine and genetic resources
- Regulation of climate, water flows, erosion and pollination, and
- Cultural services such as recreation, ecotourism, aesthetic and heritage values.²

We now understand the co-dependence of ecosystem processes or services and their importance to supporting productive systems.³ Farmers' soil management practices have a major influence on the quality of offsite ecosystem services⁴ in addition to affecting farmers' productivity and profitability. For example, soil lost from crop or pasture land left bare can contribute to dust storms;⁵ and cane farmers' choice of nitrogen fertiliser regimes contributes to high nitrogen levels affecting the health of the Great Barrier Reef.⁶

In light of this co-dependence and that more than half of Australia is privately owned or managed⁷, an integrated approach to the management of natural resources – soils, water, native plants and animals – is critical to conserving Australia's unique environment and improving agricultural production.

The gross value of Australian agriculture was \$53.6 billion in 2014–15, despite large areas of the country reporting very dry conditions for much of the year.



A changing climate is exacerbating the pressures on our natural resources and affecting the resilience of our native plants and animals and agricultural industries. Farmers and land managers are seeing this first hand, through changes in rainfall patterns, storm severity, maximum temperatures, length of growing season, and new incursions of insects, weeds and feral animals.

In some areas, soil carbon has halved from pre-agricultural levels. This reduces agriculture productivity, increases potential for soil erosion, and leads to the subsequent introduction of excess nutrients and sediments in waterways. These trends are exacerbated by prolonged drought years.⁸

Australia's farmers are custodians for 53 per cent of our landscape, provide 93 per cent of the food we eat, and produce goods for 40 million people outside Australia every day.⁹ Australian agriculture was valued at \$54 billion in 2015–16 and expected to reach \$60 billion in 2016–17. Global demand for food and fibre is rising and industry and governments are expecting Australia to meet some of this demand.

The environment also contributes broadly to the Australian economy;¹⁰ for example, tourism on the Great Barrier Reef, genetic resources derived from biodiversity, and employment through protected area management. In 2014, nature-based tourism in Australia alone was valued at \$41 billion per year.¹¹

In addition, the Australian Bureau of Statistics estimates the value of Australia's environmental assets to be \$6,138 billion. More than 80 per cent of this (\$5,105 billion) is derived from land based natural capital, including environmental assets on private agriculture land.¹² Figures on the value of environmental assets are likely to be underestimated, as Environmental Economic Accounts do not consider the intrinsic value of the environment, or many of the socio-economic values that healthy ecosystems support.¹³

Natural spaces provide social and health benefits through increased physical activity levels, physical and mental health outcomes and community cohesion.¹⁴ A Social Return on Investment study of investment in Indigenous Protected Areas (funded by the program and its predecessors) and the Indigenous Ranger program (supplemented with funding from the program) concluded that, between 2009–10 to 2015–16, an investment of \$35.2 million from Government and a range of third parties has generated social, economic, cultural and environmental outcomes with an adjusted value of \$96.5 million.¹⁵

Threats and pressures on Australia's natural resources represent a cost to the economy because they reduce agricultural productivity and the condition of our natural environment. For example, weeds cost Australian farmers around \$1.5 billion a year in weed control activities and a further \$2.5 billion a year in lost agricultural production.¹⁶

The review of the National Landcare Program found there remains a strong need for Australian Government investment in natural resource management. Australian Government involvement is needed to ensure nationally important environmental assets and productive lands are protected and improved for future generations. The Australian Government does this by facilitating public investment and community action where the level of public benefit is high. Natural resource management programs need to be integrated on a catchment basis to ensure Landcare actions are coordinated and in line with other regional development initiatives. Landcare actions on-farm need to be integrated with farm business and industry planning and must demonstrate they are financially sustainable (both in the short and long term). This helps to ensure the long-term security of food and fibre production, build resilient communities, meet international obligations, and contributes to a healthy environment essential to wellbeing.

Healthy dark soils that produce high agriculture productivity. Photo: © Department of Agriculture and Water Resources





2. Australian Government investment in natural resource management

The Australian Government has been investing in integrated natural resource management related programs for more than 25 years, beginning with the Decade of Landcare in 1989. Other Australian Government investment prior to this date occurred on an issue-by-issue basis, such as through the National Tree Program launched in 1982 and the National Soil Conservation program from 1983 to 1992.¹⁷

In 1990, the Australian Government, all state and territory governments and representatives of local governments in Australia agreed to develop an *Intergovernmental Agreement on the Environment*.¹⁸ This agreement, finalised in 1992, recognised the importance of nationally consistent and co-operative arrangements to achieve sustainable land use to conserve ecological processes and production of food and fibre.

The agreement identified the roles and responsibilities of the respective governments while recognising natural resource management issues across political and geographical boundaries, and interactions

between the various governments involved are complex. As a result, it was identified national leadership was required to develop responses that could strategically address large-scale issues in a way that involves partnerships with all levels of government and the whole community. This influenced the development of the first National Landcare Program.

The Australian Government's role in natural resource management enables it to meet its international obligations under conventions relating to biological diversity,¹⁹ desertification,²⁰ wetlands,²¹ cultural and natural heritage,²² and climate change²³.

The Australian Government uses a range of methods to achieve its intended natural resource management outcomes. These include legislation such as the *Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)* and *Biosecurity Act 2015*. Australian Government funding programs, including those supported by legislation such as the *Natural Resources Management (Financial Assistance) Act 1992* and the *Natural Heritage Trust of Australia Act 1997*, have complemented these regulatory approaches, focussing on encouraging best practice and changing behaviours through support, advice, research and funding.

Over the 24 years from July 1992 to June 2016, the Australian Government has invested or committed approximately \$8 billion into natural resource management nationally. Included in this is \$4.9 billion invested over the 12 years to 2015–16 from the Natural Heritage Trust,²⁴ established following the sale of Telstra. The Natural Heritage Trust is the main funding source for natural resource management programs, currently providing approximately 85 per cent of the funding for the National Landcare Program.

A timeline of the Australian Government's major natural resource management programs is in Figure 1. Further information on historical Australian Government investment is outlined in Attachment B.

Coongie Lake Ramsar wetland.

Photo: Paul Wainwright © Department of the Environment and Energy



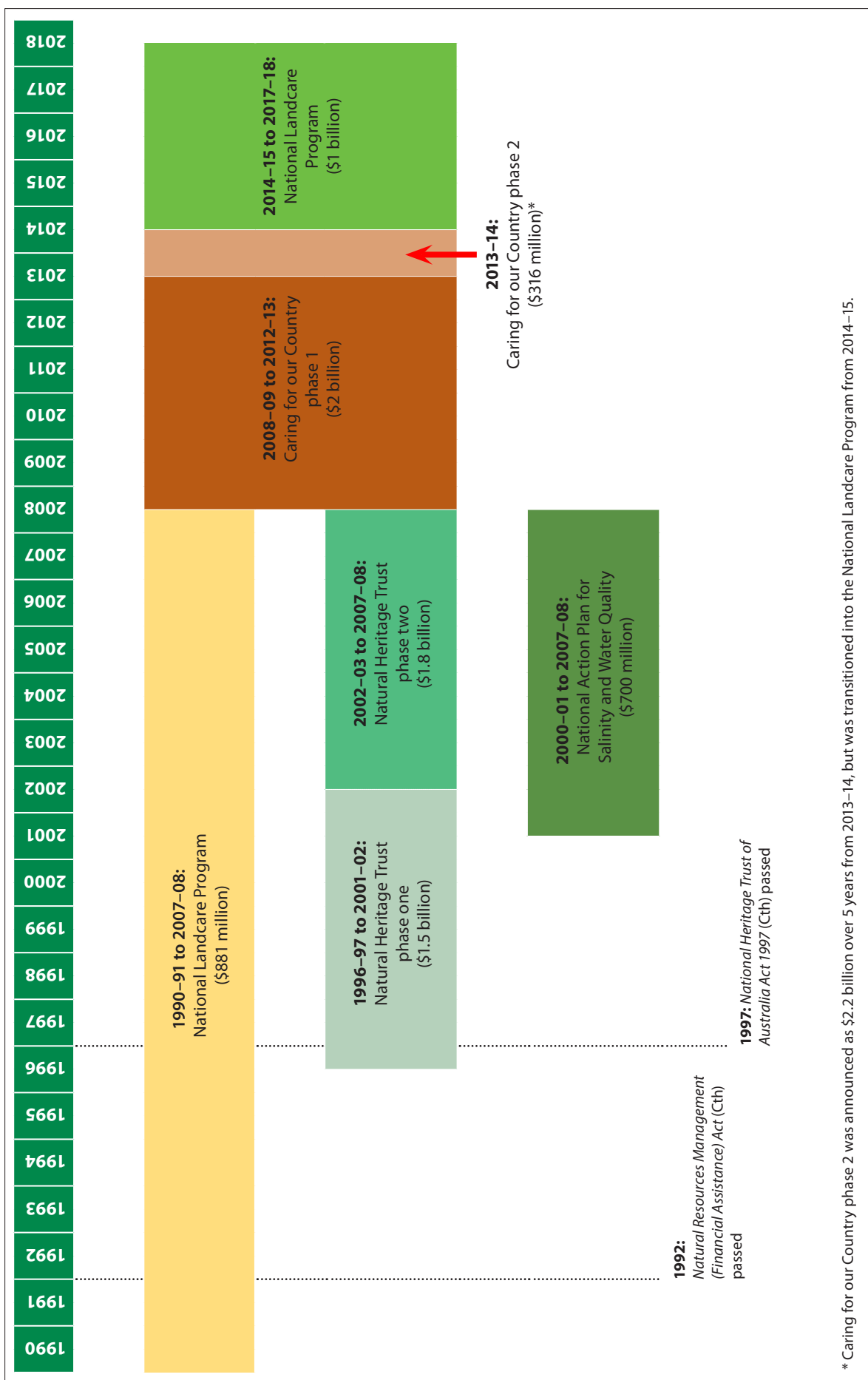


Figure 1—Australian Government investment in the National Landcare Program and its predecessors since 1990



3. Overview of the National Landcare Program (2014–15 to 2017–18)

The National Landcare Program is the Australian Government’s fifth major natural resource management program funded by the Natural Heritage Trust aimed at supporting environmental and sustainable agriculture outcomes. Building on previous programs, it was designed to support continued protection of environmental assets and to drive further sustainable practice change in the use and management of natural resources.

Improving and protecting the condition of natural resources is a slow process and requires long-term on-ground planning, investment and delivery. The National Landcare Program and its predecessors have

been structured to achieve this through building knowledge and engaging the community and industry in projects to change those land management practices needed to improve the condition of soil, water and biodiversity.

The four strategic objectives of the National Landcare Program (Table 1) were developed to recognise and encourage the contribution of local communities in assisting Australia to meet its national and international obligations in environmental management and sustainable agriculture.

Table 1—National Landcare Program Strategic Objectives

Strategic Objectives	Strategic Outcomes	Contribution to national and international obligations
Strategic Objective 1: Communities are managing landscapes to sustain long-term economic and social benefits from their environment.	Maintain and improve ecosystem services through sustainable management of local and regional landscapes.	Protection and restoration of ecosystem function, resilience and biodiversity; appropriate management of invasive species which threaten ecosystems, habitats or native species.
Strategic Objective 2: Farmers and fishers are increasing their long term returns through better management of the natural resource base.	Increase in the number of farmers and fishers adopting practices that improve the quality of the natural resource base, and the area of land over which those practices are applied.	Sustainable management of agriculture and aquaculture to conserve and protect biological diversity and reduce greenhouse gas emissions and increase carbon stored in soil.
Strategic Objective 3: Communities are involved in caring for their environment.	Increase engagement and participation of the community, including landcare, farmers and Indigenous people, in sustainable natural resource management.	Build community awareness of biodiversity values, skills, participation and knowledge, including Indigenous knowledge and participation, to promote conservation and sustainable use of biological diversity.

Strategic Objectives	Strategic Outcomes	Contribution to national and international obligations
Strategic Objective 4: Communities are protecting species and natural assets.	Increase restoration and rehabilitation of the natural environment, including protecting and conserving nationally and internationally significant species, ecosystems, ecological communities, places and values.	Reduce the loss of natural habitats, degradation and fragmentation; protecting or conserving Matters of National Environmental Significance including management of World Heritage Areas, Ramsar wetlands, national heritage etc; reduce the number of nationally threatened species and improve their conservation status.

Funding arrangements

The National Landcare Program comprises funding through four main appropriations. Table 2 shows which Australian Government department receives appropriated funds, and which department or departments manage the funds.

As shown in Figure 2, the Natural Heritage Trust provides approximately 85 per cent of the funding for the National Landcare Program. The Environmental Stewardship Program, the Natural Resources Management Account, and the Pest and Disease Preparedness and Response Program appropriations

provide approximately 8 per cent, 4 per cent, and 3 per cent, respectively.

The Natural Heritage Trust was established under the *Natural Heritage Trust of Australia Act 1997* to conserve, repair and replenish Australia's natural capital infrastructure. Over time, funding for environment and agriculture priorities from Natural Heritage Trust has varied, from 50:50 respectively for Natural Heritage Trust Phase 1, to 70:30 for Caring for our Country Phase 2 and the National Landcare Program.

Table 2 – National Landcare Program Appropriations

Appropriation	Appropriated to	Managed by
Natural Resources Management Account (including Sustainable Fisheries commitments)	Department of Agriculture and Water Resources	Department of Agriculture and Water Resources
Natural Heritage Trust	Department of the Environment and Energy	Department of the Environment and Energy Department of Agriculture and Water Resources Department of the Prime Minister and Cabinet
Environmental Stewardship Program	Department of the Environment and Energy	Department of the Environment and Energy
Pest and disease preparedness and response programs	Department of the Treasury	Department of Agriculture and Water Resources

Governance

The Natural Heritage Ministerial Board, created through the *Natural Heritage Trust of Australia Act 1997*, comprises the Minister for the Environment and Energy and the Minister for Agriculture and Water Resources. The Board provides the formal mechanism for decisions, liaison and monitoring the effectiveness of funding through the Natural Heritage Trust.

The Board is supported by the National Landcare Advisory Committee, which is a non-statutory committee appointed by the Board to provide advice on the development and implementation of the National Landcare Program. The Committee provides advice relating to investment priorities, delivery, community consultation and engagement, and achievement of outcomes.

The Departments of the Environment and Energy and Agriculture and Water Resources work with the Department of the Prime Minister and Cabinet to deliver the program on behalf of the Government. For approximately half of National Landcare Program funding, agriculture and environment priorities are delivered under a single contract with proponents, rather than as separate grants from each portfolio.

Sub-programs

The National Landcare Program comprises fifteen main sub-programs delivered through a range of delivery models, including small grants, large and long-term grants, and procurements. Using sub-programs allows

for the delivery of key priorities and funding to be tailored appropriately. Figure 2 illustrates the funding sources for each of the sub-programs.

The regional scale delivery model has been a core element of Australian Government natural resource management programs for the last 15 years. Under the Regional Stream, 56 regional bodies receive around \$450 million from 2014–15 to 2017–18, to deliver National Landcare Program activities that promote sustainable agriculture practices and environment protection at the regional and local level, based on national priorities. Key requirements of the Regional Stream include that regional bodies must:

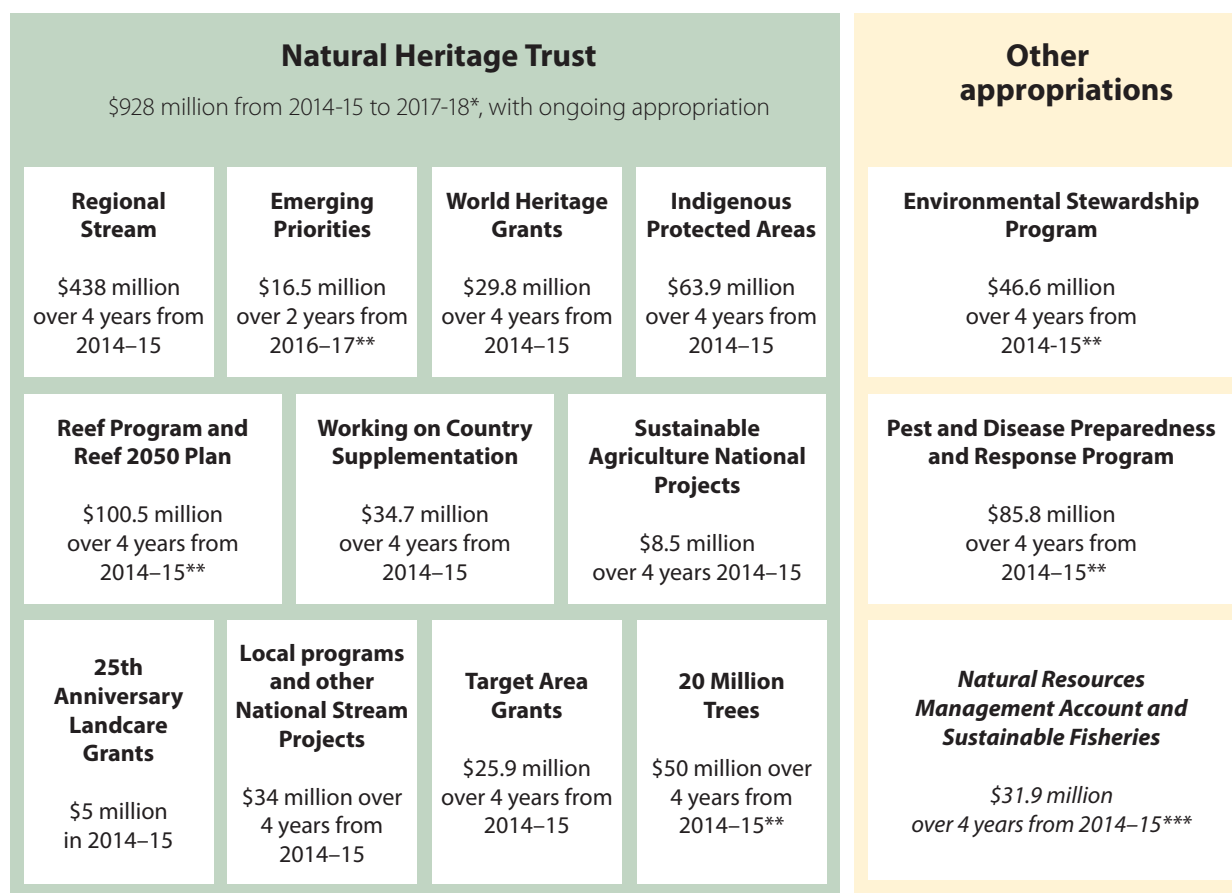
- deliver nationally important environment and sustainable agriculture outcomes that help Australia to meet its national and international obligations
- prioritise funding in line with regional natural resource management plans, which bring together science and community perspectives
- allocate at least 20 per cent of their annual Regional Stream funding to small, on ground projects and related activities that are delivered by, or directly engage with, the local Landcare community
- maintain a Regional Landcare Facilitator to provide information and support to sustainable agriculture groups and activities
- meet the standards set out in the Australian Government Performance Framework for Regional Natural Resource Management Organisations.

Birdlife along the Ord River in the Ord River Floodplain wetland area. Photo: © Department of the Environment and Energy



National Landcare Program: \$1 billion over 4 years from 2014-15 to 2017-18

Note: all funding figures are accurate as at Budget 2016-17



* Including the funding streams shown in the diagram, plus program support.

** These programs have allocated funding beyond 2017-18, but only funding during the period of the National Landcare Program (2014-15 to 2017-18) is shown.

*** This funds the Innovation Grants (\$14.5 million over 2014-15 and 2015-16), support for fishing peak bodies, invasive marine pest programs, and parts of the Regional Stream, 25th Anniversary Landcare Grants and Sustainable Agriculture Small Grants.

Figure 2—Architecture of the National Landcare Program

Other sub-programs include:

- World Heritage Grants, which support management of the thirteen Australian World Heritage Areas listed for outstanding natural values
- Reef Program and Reef 2050 Plan, which help Australia meet its international obligations to protect the Great Barrier Reef
- Indigenous Protected Areas and Working on Country Supplementation, which facilitate Indigenous Land and Sea management and support traditional owners to voluntarily dedicate their land to conservation and sustainable use
- 20 Million Trees, which provides funding to plant 20 million trees by 2020 to improve the extent, connectivity and condition of native vegetation
- 25th Anniversary Landcare Grants, which targeted local community groups and land managers to achieve environmental and sustainable agriculture outcomes
- Target Area Grants, which fund environmental projects in six priority geographical regions
- Environmental Stewardship Program, which supports private land conservation and long-term environmental protection for five ecological communities
- Sustainable Agriculture Small Grants, which supports local farming and community groups and individual farmers and fishers to conduct on-ground projects

- Sustainable Agriculture Innovation Grants, which supported industry, farming and fisher groups to develop and adopt innovative practices and technologies
- Pest and Disease Preparedness and Response Program, which facilitates nationally cost-shared eradication responses to pest and disease incursions
- Other grants, including Local Programs and Emerging Priorities, which deal with local or regional issues, address key issues of concern for specific communities, and often deliver on election commitments.

Descriptions, outcomes and case studies from each sub-program are at Attachment C.

Most National Landcare Program sub-programs are delivered through multi-year contracts, providing long-term funding certainty. This recognises the complexity of large-scale management, supports sustained on-ground effort and allows for flexible project delivery. Exceptions include the Sustainable Agriculture Small Grants and 25th Anniversary Landcare Grants, which were 18 month programs, and some Local Program grants.

Monitoring and reporting

The National Landcare Program Monitoring and Reporting Plan 2014 underpins program reporting. Most projects are required to have a monitoring, evaluation, reporting and improvement (MERI) plan that sets out outcomes, outputs and the project activities that are intended to be achieved.

Under many sub-programs, grantees are required to report on progress and achievements every six months through the online Monitoring, Evaluation, Reporting and Improvement Tool (MERIT). This is intended to support accountability and adaptive management. MERIT continues to be refined to ensure the capture of accurate and relevant data.

Sub-programs that do not report through MERIT include the Sustainable Agriculture Small Grants, Innovation Grants, Pest and Disease Preparedness and Response program, Environmental Stewardship Program, Indigenous Protected Areas and Indigenous Ranger Program, and World Heritage Grants. Most of these sub-programs still require project proponents to develop MERI plans, and report on their progress towards agreed outcomes every six to twelve months, using templates specific to each sub-program.

Farmers helping protect threatened ecological communities like box gum grassy woodland. Photo: © Department of the Environment and Energy





4. Analysis of investment in natural resource management

Investment in natural resource management, including through Landcare, has created lasting change to how farmers and communities manage natural resources. Governments, scientists and communities now better understand how natural systems work, including the co-dependence of ecosystem processes such as pollination, soil health, pest control, nutrient cycling, windbreaks, water purification and climate moderation. There is also increased appreciation of the importance of these ecosystem processes to productive systems.²⁵

Australian Government investment in natural resource management has generated substantial economic, environmental and social benefits. It has contributed to the protection of high value environmental assets; the adoption of sustainable agriculture practices leading to improved agricultural production and profitability gains; and increased the knowledge, skills and resilience of landholders and regional communities.²⁶

Natural resource management must deal with legacy issues and many of the actions are aimed at addressing historical, long-term, wide scale, slow-acting processes of land, water and environmental degradation. As a result, measuring the outcomes of short-term projects on these large-scale processes is a challenge. This has been highlighted in many previous reviews.

4.1 Outcomes from the National Landcare Program and its predecessor programs

The Landcare approach and community-led natural resource management

In addition to its use in Australian Government funding programs, the term 'Landcare' represents a local level collaborative movement focused on sustainable and productive land management, and a brand owned by Landcare Australia Limited.

Landcare involves farmers, land managers, fishers, industry groups, natural resource management organisations, conservation groups and other community members working together to address local, regional and national environmental and sustainable agriculture issues. It comprises a myriad of groups implementing better and integrated management practices of land and water, to protect environmental assets and improve farmland production.

Landcare organisations and activities have received funding from the Australian Government for more than 25 years, and this support has been fundamental to enabling the community to engage in Landcare activities.²⁷

Key stakeholders, including the National Landcare Advisory Committee, believe that Australian Government investment into Landcare has created a profound legacy. There are now 5,400 registered Landcare and Coastcare groups across the country, as well as many other industry and community organisations that do not use the Landcare name but use the same model to achieve the same outcomes.²⁸ More than 20 countries have adopted the Landcare model.

Building on the successful Landcare approach, investment by the Australian Government in natural resource management has integrated conservation and farming interests, community input, and contribution and ownership from all levels of government. This approach remains central to delivering effective natural resource management services and outcomes in Australia.²⁹

A key achievement of the National Landcare Program and its predecessors is the creation of strong and interconnected local and regional networks and organisations. This includes Landcare groups³⁰, the 56 regional bodies, agriculture industry groups, local governments, state/territory governments and many others. The strength of this network is

underpinned by regional planning informed by local, state and national objectives.³¹

Activities by these and other groups directly engage 40 per cent of farmers, with flow-on participation to approximately 75 per cent of farmers.³²

The National Landcare Program and its predecessor programs have provided opportunities for community participation, learning and skill development. This has supported intergenerational learning through industry knowledge, family knowledge, and through regional groups and schools.³³

The investment has created opportunities for Indigenous people to build their capacity in Land and Sea Management, creating sustainable lasting change and economic futures for Indigenous people.³⁴

Estimates of volunteered and private time and resources invested by landholders and community members, while indicative, show that for every government dollar invested in Landcare and natural resource management, landholders and volunteers contribute between \$2.80 and \$16.00.³⁵

National Landcare Program volunteer at Lake Claremont
Photo: © Tony McDonough



In addition, local engagement in decision making and the subsequent ownership of projects over time contributes towards long term regional scale outcomes. This is demonstrated in Case Study 1.

However, the proportion of farmers engaging in Landcare groups has declined over recent years and at the same time producer groups have grown in number and participation, and other new rural social networks have emerged. New residents in peri-urban areas around cities and in regions are new entrants to land and water management. As such, expert stakeholders and the National Landcare Advisory Committee have identified the opportunity to refine the model to better meet the needs of modern landholders and volunteers.³⁶ In recent years, there has been effort to attract and involve younger landholders and volunteers.³⁷

Case Study 1 - Genoa River



The initiative to restore the Genoa River, which starts in southern New South Wales and flows into Victoria, commenced in 1993 with a \$290,000 grant from the Australian Government's National Landcare Program. The grant attracted major state government co investment and supported the coordination of the initiative through the Genoa River interstate liaison committee.

Approximately \$780,000 was invested across various projects by the Australian and state governments between 1993 and 2000. Significant reaches of the Genoa River have been rehabilitated, with improvements to water quality, stream bank vegetation, and associated aquatic ecosystems.

Anecdotal evidence from landowners indicates that the environmental and economic impacts of flood events have decreased since the works were undertaken.

Practice change and contribution to farm-gate profits and regional economies

The National Landcare Program and its predecessors have contributed to the increased rate of adoption of best management practices by farmers and other land managers. Landcare brings together farmers with similar issues, enterprises, practices and goals, along with expert advice and conservation organisations. This provides opportunity to discuss barriers, innovation and adoption of new practices. This has improved farm-gate profits, productivity and sustainability.

The networked nature of Landcare allows trusted locals who are early adopters to give confidence to others to implement practice change more quickly and effectively.

According to the 2016 stakeholder survey, industry stakeholders strongly believe the National Landcare

Program has helped improve sustainability, led to improvements in industry profitability and access to markets.³⁸

Government programs provide funding and expert advice to assist farmers with natural resource management.³⁹ This includes rural research and development corporations, training provided through drought and rural assistance schemes, state agencies, natural resource management regions, industry organisations and farmer groups. Most of these groups are or have been delivery partners in the National Landcare Program and its predecessors. Figure 3 provides some indication of the sources of support accessed by farmers undertaking natural resource management. Activities funded by the National Landcare Program contribute to many of these support mechanisms, by providing information, advice, materials or direct help.

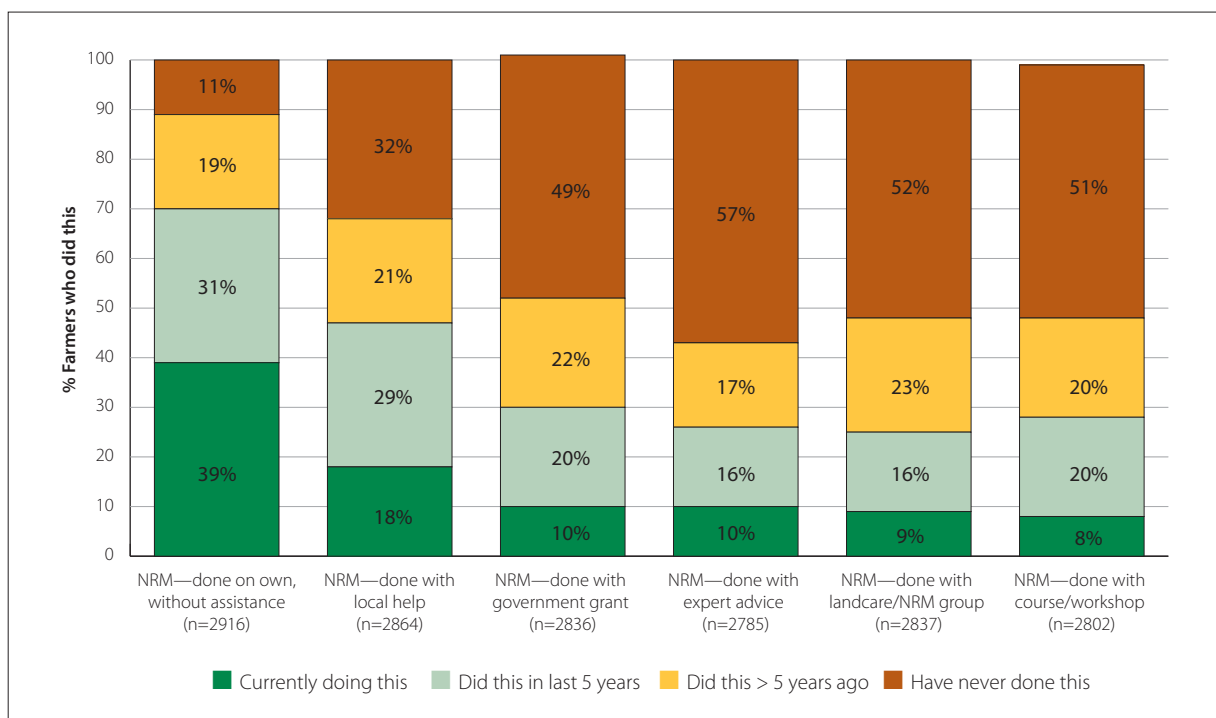


Figure 3—The types of support that farmers access when undertaking natural resource management.⁴⁰

Data collected from the Australian Bureau of Statistics indicate a steady increase in the number of farmers adopting sustainable agriculture practices affecting soil carbon status, soil acidification and soil loss. Data were collected for each industry sector at the state level since 1995–96, and for natural resource management regions since 2007–08.⁴¹

An assessment of the economic impacts of government investment in Landcare and natural resource management projects identified key on-farm economic benefits including: improved yields, increased farm income, reduced costs and diversified farm income.⁴² Key off-farm economic benefits were increased sales (e.g. rural input suppliers) and services (e.g. increased use of contractors). The study estimated, from three case studies, that industries had a \$1 billion increase in economic market value from 1988 to 2015 as a direct result of government's natural resource management investment. Social and environmental benefits were also thought to be substantial, but were not measured. This study looked at a small proportion of Australia's agricultural industries. Nationally the economic, social and environmental benefits of the program are much broader.

Agriculture's continued social licence to farm maintains Australia's export competitiveness.⁴³ Landcare activities continue to help position Australia's 'clean and green' agriculture credentials by influencing landholders to adopt a stewardship ethic.⁴⁴

Planted forest strip on a fence boundary that comprises native species on a farm.

Photo: Rob Blakers © Department of the Environment and Energy



Soil acidification

Soil acidification can lead to accelerated loss of plant nutrients, soil toxicity, reduced carbon in the soil, and erosion where ground cover is decreased. This affects the productivity of agricultural systems and the health of natural environments.

About 5 per cent of Australia's land is at risk of high acidification.⁴⁵ For cropping areas, about 36 per cent is rated as high risk and 17 per cent moderate risk.

Regular testing of soil acidity and applications of lime and/or dolomite can be used to manage surface soil acidity. Improved fertiliser regimes can also slow soil acidification.⁴⁶ These practices have been promoted extensively through the Australian Government's investment into natural resource management over the past 25 years, including through the National Landcare Program.

National trends show that the rate of lime and/or dolomite application to manage acidification increased in broadacre cropping (19 to 23 per cent) from 2007–08 to 2011–12 and in the dairy industry (22 to 26 per cent) from 2007–08 to 2009–10.

Soil carbon management and wind and water erosion

Soil carbon is the amount of organic matter (decomposed plant material) in the soil. Managing soil carbon can help slow carbon emissions from soils that contribute to climate change, as well as improving soil water storage, supplying nutrients to plants and energy for microbial processes. These changes can contribute to yield and productivity improvements.⁴⁷

Dry climate and low nutrient soil means that soil carbon over most of Australia is low by global standards. Large and continuous inputs of organic matter are needed to increase soil carbon. Practices that improve ground cover are best in building soil carbon and reducing wind and water erosion.

In the broadacre cropping industry, tillage (cultivation) and crop residue retention were two practices thought likely to contribute to increases in soil carbon. There has been a steady increase, from 21 per cent in 1995–96 to 74 per cent in 2011–12, in the area of cropland not cultivated, and there were similar trends with crop residue retention. By 2011–12, residues were retained in more than 64 per cent of the area cropped.

While the contribution of these practices to improve soil carbon storage is small, maintaining good



On-ground works to stabilise gully erosion. Photo: John Baker © Department of the Environment and Energy

ground cover reduces wind and water erosion, and the amounts of carbon and nutrients lost through these processes. The National Landcare Program and its predecessors have focussed support, advice and trials in this area-helping to increase uptake. The grains industry has reported that these practices have improved water use efficiency and crop yields.⁴⁸

Wind erosion is a natural process, which can be exacerbated by land management practices associated with reducing groundcover. The last national assessment of the extent and severity of wind erosion⁴⁹ estimated that nearly 15 per cent of the continent was at risk from widespread and moderate wind erosion. Large dust storms occurred during the Millennium drought. These included the September 2009 Red Dawn which brought dust to the entire eastern seaboard. It has been estimated that 2.54 million tonnes of soil was lost off the east coast in this event.⁵⁰ The economic impact on Sydney alone due to the resulting disruptions and clean up required has been estimated at \$330.8 million.⁵¹

Maintaining good ground cover helps farmers to reduce water and wind erosion, and improve drought resilience by helping pastures respond quickly to rain.

Grazing industries are more aware of the importance of ground cover management, which has resulted in an increase in adoption of associated practices. The new Australian Beef Sustainability Framework highlights ground cover as a key indicator for environmental stewardship. The industry has identified maintaining good ground cover as an important on-farm action that underpins productivity, profitability and consumer support in the short and term.

Funding from the National Landcare Program and its predecessors has focussed on promoting practices that reduce water erosion through the adoption of no-till and crop residue retention practices by croppers; use of mulching and matting by horticulture farmers; and ground cover management by dairy and grazing farmers. Finding practical methods to reduce the other forms of water erosion (gully and streambank erosion) has proved to be difficult. Sediment tracing⁵² and water quality modelling of Great Barrier Reef catchments show that gully erosion on grazing lands is a very significant source of sediment to the Great Barrier Reef lagoon. There are substantial investments in reducing gully erosion, especially in the Burdekin catchment, but it is too soon to assess the success of these projects.

On farm biodiversity management

Land managed for agriculture includes assets important for biodiversity conservation, including native vegetation along creeks and rivers and rocky outcrops. Preliminary estimates suggest that around two thirds of Australia's native vegetation may be on land mapped as used for agriculture.⁵³ Much of this land is native pasture.

The National Landcare Program and its predecessors have contributed to improvements in the management of biodiversity on farm. Farmers' awareness of the importance of protecting native vegetation is increasing; Australian Bureau of Statistics' data show that the area of native vegetation reported on-farm increased by four million hectares between 2007-08 and 2011-12, and the percentage of farmers reporting that they protected native vegetation for conservation purposes rose from 51 to 58 per cent. Over this period, the area of conservation agreements reported on-farm increased from 3.4 to 4.6 million hectares.

Awareness of the importance of wetlands on agricultural land has increased; along with the percentage of farmers reporting they protect wetlands for conservation purposes.⁵⁴ This increase in reporting of wetlands may have been facilitated by the reappearance of many ephemeral wetlands at the end of a long period of drought.

This level of farmer interest in improving biodiversity onfarm continues. In 2014, 63 per cent of farmers reported planting native trees for environmental purposes, 59 per cent reported regeneration of native vegetation, 46 per cent encouraged regeneration of native pastures, 9 per cent reported having a conservation covenant on part of their land, and 39 per cent reported fencing riparian areas.⁵⁵

Pest animals and weeds

Pest animals and weeds cause significant damage to Australia's natural environment and contribute significantly to land degradation, reducing farm and forest productivity. Pest animals, plants and pathogens are the most frequently cited threats to species and ecological communities. The pressure placed on Australia's native species by feral animals continues to increase and is exacerbated by changes in suitable habitat range due to climate change.

The cost of weeds to agricultural industries is estimated at around \$1.5 billion a year in weed control activities and a further \$2.5 billion a year in lost agricultural production. Wild dogs are conservatively estimated to cost Australia's agricultural sector up to \$66 million per year and the annual cost of rabbits to agriculture is in excess of \$200 million. Feral cats have been a major contributor to the extinction of at least 27 mammals since they were first introduced to Australia.⁵⁶ While difficult to estimate, the cost of weeds to our environment is likely to be even greater.

The National Landcare Program and its predecessors supported many initiatives aimed at reducing the impact of pest animals and plants, such as the National Wild Dog Action Plan and Rabbit Boost. The programs also supported strategic leadership at a national level through the Australian Weeds Strategy and the Australian Pest Animal Strategy. These strategies guide and coordinate actions taken by governments and regional natural resource management bodies, together with industry, landholders and the wider community.

The benefit of investing in the management of pest animals and weeds can be demonstrated through numerous control, management and eradication efforts that have delivered clear positive outcomes. For example, the Prickly Acacia eradication project uses innovative technologies to monitor and manage weeds in western Queensland using funding from the National Landcare Program, state government funding and other sources. The project uses new satellite weed mapping and drone technology to build a regional scale understanding of the distribution of Prickly Acacia, so control efforts can focus on areas of highest infestation.

The combination of traditional and emerging weed control techniques offers the best integrated and cost effective solution for property scale weed control. Treatment and management of the weed can increase pasture production by 10 fold and improve biodiversity significantly. The project uses smartphone applications to allow farmers' access to up-to-date infestation information, and YouTube news stories and field days to share the vision and achievements of the project.

The natural resource management bodies and their partners are well placed to coordinate local

stakeholders to reduce the impact of weeds and pest animals. The challenge has been how to balance the landholders' legislative requirements to eradicate and manage pest plants on their properties and the governments' role to eradicate or contain the spread of pest species and protect matters of nationally environmental significance.

Threatened species and ecological communities

Australia has more unique plants than 98 per cent of the world's countries and more endemic mammals and reptiles than any other country in the world. Our native plants and animals are part of our unique heritage and identity, and contribute significantly to our economy, yet many are in danger of extinction.

The National Landcare Program and its predecessors have played a significant role in supporting regional bodies, communities and private land managers to take practical on-ground action to conserve our native species and ecological communities in all parts of Australia. For example, the Macquarie Island Pest Eradication Program, commencing in 2007, has successfully eradicated rabbits, rats and mice from Macquarie Island, resulting in the dramatic recovery of the previously at risk native tussock grass, Macquarie cabbage and silver leaf daisy. For further information, see Case Study B in Attachment D.

Some of the most important habitat for threatened species exists on farms and other private land. The Environmental Stewardship Program provided long term support (up to 15 years) for private landholders to conduct management activities to protect and enhance the condition of threatened ecological communities, such as the Box Gum Grassy Woodland, on their land. Activities included grazing management, weed and pest animal control, and maintenance of buffer zones.

Despite successful initiatives like this, the status of threatened species in Australia continues to decline. As at December 2015, a total of 480 animal species, 1,294 plant species and 74 ecological communities were listed under the EPBC Act as threatened, with the number of species listed in the critically endangered category rising from 150 in 2011, to 206 by the end of 2015.



*Top: Mahogany glider, Wet Tropics Management Authority - Qld.
Photo: © Department of the Environment and Energy*



Above: Southern corroboree frog. Photo: © Steve Wilson

To address this decline, significant investment under the National Landcare Program continues to be directed towards initiatives that aim to improve outcomes for threatened species and ecological communities, including for 23 priority species identified in the Threatened Species Strategy.⁵⁷ In addition, more than 30 Local Program grants are assisting recovery of threatened species or ecological communities listed under the EPBC Act.

Protection and restoration of habitat and iconic places

The protection and restoration of habitat for our native plants and animals has been a primary objective of Australian Government natural resource management programs for the past 25 years. The programs have invested in projects to improve the condition, extent and connectivity of native habitat, including in areas such as Cape York, the Kimberley region and Tasmania. They have also funded projects to ensure our World Heritage properties are managed in accordance with our commitment under the World Heritage Convention to maintain their outstanding universal values.

The National Landcare Program and its predecessors have contributed to the commitments Australia has made under a number of other significant international treaties, including the Convention on Biological Diversity, the Convention on the Conservation of Migratory Species, and the Ramsar Convention on Wetlands. For example, the South East Natural Resource Management board in South Australia

worked with members the local community, the South East Aboriginal Focus Group, and environmental experts, to restore part of the Ramsar listed Piccaninnie Ponds Karst Wetlands. The project successfully returned Pick Swamp to a permanent freshwater wetland system, restoring and extending habitats for 20 nationally threatened species.

The National Landcare Program and its predecessor programs contributed to Australia's National Reserve System, including through the establishment of Indigenous Protected Areas. The National Reserve System underpins our efforts to protect threatened species and ecological communities by protecting natural habitats and providing important wildlife corridors across land tenures. Caring for our Country contributed to the expansion of the National Reserve System by more than 27 million hectares, and contributed to 10.8 million hectares of native habitat and vegetation projects to conserve native species and enhance the condition and connectivity of habitat.⁵⁸

Orange Bellied Parrot. Photo: © Dave Watts



The National Reserve System now covers 17.8 per cent of Australia's land area⁵⁹, with nearly half (44 per cent) comprising Indigenous Protected Areas. While the size of the reserve estate and the area of land managed by Indigenous organisations continues to increase, there remains an ongoing need to enhance the adequacy of management and representation of ecosystem types. For example, 50 per cent of critically endangered communities and 30 per cent of endangered communities listed under the EPBC Act have less than five per cent of their area represented in the National Reserve System.

The National Landcare Program continues to support consultation and declaration of Indigenous Protected Areas, which now total 74 properties covering more than 67 million hectares, as well as initiatives aimed at enhancing management outcomes within existing protected areas.

Resilient communities

Effective natural resource management through the National Landcare Program builds social capital, connectedness and networks⁶⁰ essential to community and societal wellbeing.⁶¹ It improves the ability of natural systems to respond to extreme weather events, major pest or disease outbreak, or slow growing threats to the output or capacity of a productive or natural system, such as soil acidification⁶², and improves farm financial performance.

This then helps communities adapt and respond to change, by reducing psychological distress associated with environmental degradation and reduced farm financial performance; improves sense of place; and increases landholder self-efficacy.⁶³

Continued investment in the management of natural resources supports ecosystems and Australian farmers and communities to stay competitive, productive and sustain their social connection in the face of economic fluctuations.⁶⁴

Anecdotal evidence indicates that activities funded through the National Landcare Program and its predecessors have reduced the social and economic impacts of natural disasters such as floods and bushfires. For example, see Case Study 1.

4.2 The effectiveness of the National Landcare Program in delivering agriculture and environmental outcomes, as well as complementary benefits

Overall, the National Landcare Program is performing against its four strategic objectives with many projects achieving simultaneous outcomes across agriculture and environment priorities. Outcome information at an individual sub-program level is provided in Attachment C.

The National Landcare Program supports investment in complex issues such as long-term land or water degradation, which require sustained management actions that take time to show results. These issues often have a wide range of actions and investments applied to them. For this reason, it is challenging to demonstrate all outcomes from National Landcare Program investments.

To date, the National Landcare Program has been effective in delivering agriculture and environmental outcomes for regional Australia. Experts and stakeholders who responded to the 2016 survey are generally supportive of the delivery mechanisms and effectiveness of outcomes achieved.⁶⁵ There is agreement that more effort is required, as significant threats continue to pose risk to Australia's natural resources, particularly soils, water, fauna and flora, and agricultural production. However, a number of improvements can be made to delivery mechanisms.

The most recent recipient reporting cycle available to inform this review was completed in October 2016. As such, this section is informed by one year of National Landcare Program project reporting data to this date.^a Where possible, additional information has been included from later data captures. Information from Caring for our Country phase two projects that were transitioned over to the National Landcare Program has been utilised where relevant.

^a Efforts have been made to ensure the accuracy of the information contained in MERIT; however, the data presented in this report is an aggregation of recipient reporting, and relies on accurate reporting by project proponents.

Strategic Objective 1: Communities are managing landscapes to sustain long-term economic and social benefits from their environment

Outcome: Maintain and improve ecosystem services through sustainable management of local and regional landscapes.

Management across landscapes or regions delivers long-term economic and social benefits. The Indigenous Protected Areas and Indigenous Ranger programs support reconnection with country and culture, employment, and empowerment of an Indigenous land and sea based economy. At the start of December 2016, more than 2,600 Indigenous Australians were employed under the Indigenous Ranger and Indigenous Protected Area programs. In addition, the social return on investment generated through the Indigenous Protected Area Program is significant: almost a 3 to 1 return on investment.⁶⁶

Programs such as the Indigenous Protected Areas and Indigenous Ranger programs are reducing social and economic impacts of incarceration by providing employment streams. One project alone provided a \$3.7 million saving to the justice system in the five years to 2014, with 70 people involved in the project having their sentences suspended or reduced. See Case Study D in Attachment C for further information.

The Regional Stream facilitates regional-scale approaches to addressing natural resource management issues, as shown in Case Study 2. The 2016 stakeholder survey reported that 95 per cent of respondents from regional bodies agreed or tended to agree that their National Landcare Program projects aligned with their regional natural resource management plan and strategies. Furthermore, the majority of stakeholders thought that their suggestions about regional planning were considered and potentially taken on board by regional bodies.⁶⁷ Participation in regional planning gives the community a voice in how Australian Government funds are delivered in their area. Further information on how communities are delivering against those plans is in strategic objective four.

The Reef Program and Reef 2050 Plan are supporting economic activity in the Great Barrier Reef by improving water quality, which underpins Queensland's tourism industry. A 2013 study found

that tourism in the reef was worth almost \$5.2 billion, and generated about 64,000 full time equivalent jobs.⁶⁸ See more information in Case Study C in Attachment C.

Case Study 2 - Greater Sydney



In the Greater Sydney region, the regional body is partnering with local government and land managers to rehabilitate important habitats and create green corridors. This includes integrating green spaces – golf courses, parks and other public areas – into development planning to build resilience and maintain habitat and species connectivity.

A wide range of Australia's species are declining in population size, geographic range and diversity because of habitat loss and fragmentation. Green corridors and urban bushland are essential to their recovery and survival. Corridors give them the ability to move through the landscape to seek refuge and better manage the impacts of habitat encroachment.

Green corridors also contribute to the resilience of the landscape in a changing climate.

Natural green spaces in urban areas support people's physical and mental health by improving air and water quality and providing recreation opportunities.

In addition to improvement in natural resources and their management, the National Landcare Program is creating jobs in rural communities, helping rural employment pathways, and improving the economic performance of agricultural industries. Further information on these economic benefits to the agricultural industry are outlined under strategic objective 2.

As the program progresses we are seeing increased inter-regional collaboration, leading to more integrated management between organisations across the country. Collaboration across regional boundaries is high with 30 regional bodies delivering outcomes in partnership with other regional bodies, for example as shown in Case Study 6 in section 4.5. The Indigenous Protected Areas, World Heritage Grants, 25th Anniversary Landcare Grants and Reef sub-programs are also operating across tenures.

Strategic Objective 2: Farmers and Fishers are increasing their long-term returns through better management of the natural resource base

Outcome: Increase in the number of farmers and fishers adopting practices that improve the quality of the natural resource base and the area of land over which those practices are applied.

By December 2016, the National Landcare Program had engaged more than 30,000 farming entities, with more than 8,000 of these adopting management practice change, and more than 9.5 million hectares of land managed to improve productivity with complementary environmental outcomes.

Of all respondents to the 2016 stakeholder survey, 86 per cent considered that the National Landcare Program has increased the adoption of sustainable farming and fishing management practices.⁶⁹

In addition, the majority of industry stakeholders who participated in the survey felt that the program helps the industry improve sustainability, and that improving sustainability helps the industry improve profitability and access to markets.⁷⁰

The National Landcare Program is helping farmers change practices that improve the management of natural resources and reduce their on-farm costs. An example of a project reducing fertiliser outlay is provided in Case Study 3.

The program is reducing impacts of pests, with more than 2.2 million hectares of pest control undertaken by early December 2016. This included removing more than 13,500 goats, nearly 12,000 rabbits, and more than 9,500 pigs.

Weeds costs Australian farmers around \$2.5 billion a year in lost agricultural production and a further \$1.5 billion a year in control activities. The National Landcare Program is helping to reduce the impact and

threat of weeds to the environment and agriculture, by delivering more than two million hectares of weed control as at early December 2016. The weeds most commonly treated include *Parkinsonia aculeata*, *Prosopis juliflora*, and *Acacia nilotica*.

Case Study 3 - Corner Inlet Connections



Under the Regional Stream, the Corner Inlet Connections project in Victoria is delivered through a partnership between the regional body, government agencies, community groups and industry bodies.

The project is supporting local farmers to implement Nutrient Management Plans through the Fert\$mart initiative. This allows farmers to make informed decisions about their fertiliser use and improved soil health.

This is increasing profitability for landholders and commercial fishers, while providing environmental benefit to an internationally significant Ramsar wetland.

When fully implemented, these plans will result in an average saving to the farmer of \$27,579 in fertiliser outlay and an increase in pasture production of \$47 per hectare, while at the same time significantly increasing the health of this important wetland.

Regional bodies have engaged more than 25,000 farming entities and the 2016 stakeholder survey showed that farmers and Landcare groups are the most likely stakeholders to be involved in delivery of Regional Stream projects.⁷¹ This has led to nearly 8 million hectares of land directly benefiting from practice change to improve productivity and natural assets. See for example Case Study A in Attachment C.

The Innovation Grants have encouraged the trialling and uptake of new and innovative practices in farming and fisheries, which has improved natural resource management, information collection and distribution, and profits and productivity.

A very successful project investigated the role of subsoil testing to determine the amount of lime needed to improve soil acidity, which in turn maintains vegetation cover (therefore reducing erosion risk) and improve crop yields in the wheatbelt of Western Australian. 750 growers tested their soil to 30 centimetres depth (rather than the usual 10 centimetres) and used this information to determine how much lime to add. The results were observed by a further 2,250 growers at the project's workshops and field days. The project has resulted in a rapid and sustained adoption of subsurface soil testing and management, shown through a significant increase in agricultural lime sales in Western Australia (Figure 4).



Sustainable grazing of cattle in Northern Australia.
Photo: © Department of Agriculture and Water Resources

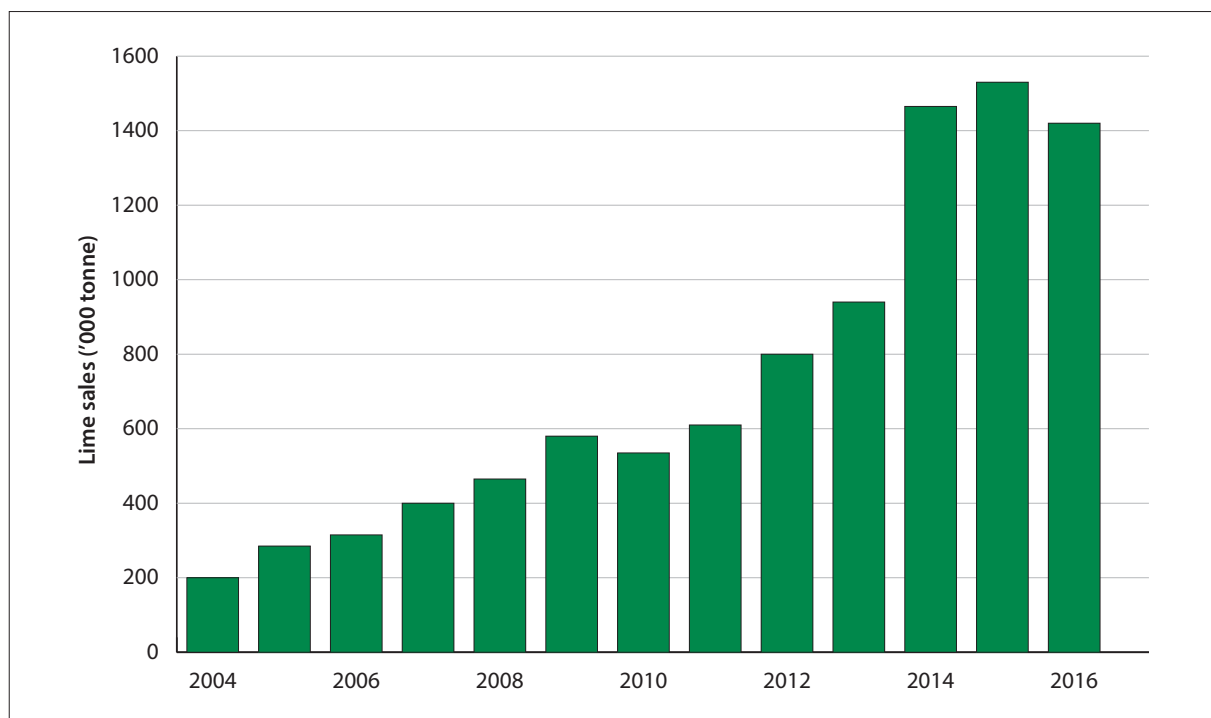


Figure 4—Agricultural lime sales in Western Australia.⁷²

In addition to the benefits of healthier soils, the direct on-farm economic benefits of this project were estimated at \$131 million (largely due to increased yields and subsequent increased farm income), and the off-farm value at \$48 million, resulting from increased lime sales.

The Sustainable Agriculture Small Grants program was committed in July 2016, and will finished by December 2017. Projects are expected to provide benefits in: enhancing biodiversity, improving soil health, managing invasive weeds, stabilising soil erosion, adapting to dry conditions, mitigating greenhouse gas emissions, regeneration and protection of native vegetation, and water efficiency and quality management. See for example Case Study J in Attachment C.

The Environmental Stewardship Program is delivering 288 projects that have assisted land managers to adopt more sustainable land management practices. Evidence shows that some landholders have improved economic returns (additional to opportunity cost payments made under the program) because their productivity has improved, whilst their farm inputs have reduced.

Through 832 projects, the Reef Program has supported more than 700 farmers to improve fertiliser management and stabilise erosion on more than 710,000 hectares of land by mid-December 2016. This has led to a significant reduction in the nutrients and sediments flowing into the Reef from these paddocks. Activities were delivered in alignment with industry best management practice frameworks, ensuring sustainable agriculture outcomes and improved profitability and productivity for farmers. See for example Case Study 5 under strategic objective 4 and Case Study C in Attachment C.

As at mid October 2016, 36 of the 25th Anniversary Landcare Grants projects had contributed to improved soil condition or ground cover, including more than 50 property management plans; 700 farming or fisher entities participating in projects, including through more than 150 events to raise awareness of management practice techniques; and 600,000 hectares of management practice change with 30 farmers or fishers.

These activities have at the same time delivered benefits to biodiversity and natural assets, such as internationally important wetlands and World Heritage Areas.

Strategic Objective 3: Communities are involved in caring for their environment

Outcome: Increased engagement and participation of the community, including landcare, farmers and Indigenous people, in sustainable natural resource management.

As at 13 December 2016, National Landcare Program projects had engaged more than three million volunteers and run more than 12,000 community events, with more than 9,000 people completing training courses. The 2016 stakeholder survey found that the majority of all stakeholders felt satisfied with their level of engagement in the National Landcare Program.⁷³

Community groups and individuals can apply for funding through a range of sub-programs, including the Regional Stream, 25th Anniversary Landcare Grants, 20 Million Trees, Sustainable Agriculture Small Grants and Target Area Grants. More than 80 per cent of stakeholders who participated in the 2016 stakeholder survey felt that the National Landcare Program objectives aligned with their own priorities. In addition, the majority of respondents indicated that none of their projects funded under the program would have gone ahead without the funding.⁷⁴

Under the Regional Stream, 20 per cent of annual funding is allocated to small, on-ground projects and related activities are delivered by, or directly engage with the local Landcare community. More than 20 per cent, or approximately \$120 million over four years, has been committed towards local projects, with more than 500 grants already provided to local communities as at December 2016. These grants build community capacity and help communities address their natural resource management priorities.⁷⁵

Funding through the National Landcare Program is fostering collaboration between the stakeholders in the natural resource management sector. Funding for Landcare networks has led to memoranda of understanding and increased cooperation with regional bodies and other Landcare organisations. For example, there has been an increase in the number of regional bodies reporting involvement of the Landcare community in planning and delivery of projects.

The 2016 stakeholder survey showed that the majority of stakeholder groups thought that their suggestions about regional planning were considered and potentially taken on board by regional bodies.⁷⁶

Case Study 4 - Wumbudin koul-yee-rah (Strong and Proud)



The Wumbudin koul-yee-rah (Strong and Proud) project under the Regional Stream supports Aboriginal people and communities to participate in conserving and protecting iconic species, ecological communities and waterways at culturally significant sites.

The project is building the capacity of Indigenous people to participate in decision-making processes associated with the delivery of on-ground environmental works, with a focus on career pathway support, employment and enterprise development.

The project has developed an Aboriginal employment guideline tool for prospective employers to improve engagement and employment of Aboriginal people in the natural resource management sector. Part of this strategy is to engage at risk Aboriginal youth through a job skills program that is providing opportunities for them to reconnect with their culture and country.

Indigenous groups were the second most likely group to be involved in the planning of Regional Stream projects and third most likely to be involved in delivery.⁷⁷

More than 90 per cent of regional bodies and nearly 80 per cent of Indigenous organisations who responded to the 2016 stakeholder survey stated that they agreed or tended to agree that the National Landcare Program had resulted in an increase in Indigenous involvement in natural resource management. See for example Case Study 4.

Building Indigenous engagement was identified as a priority by 97 per cent of survey respondents from regional bodies. Conversely, all other stakeholder groups indicated that Indigenous engagement and participation was the national priority least related to their priorities.⁷⁸

Regional bodies are investing more than \$50 million in a range of Indigenous land management initiatives that use the traditional knowledge, innovations and practices of Indigenous Australians to produce environmental, employment and enterprise development outcomes.

Strategic Objective 4: Communities are protecting species and natural assets

Outcome: Increase restoration and rehabilitation of the natural environment, including protecting and conserving nationally and internationally significant species, ecosystems, ecological communities, places and values.

As at early December 2016, more than 450 National Landcare Program projects across the range of National Landcare Program sub-programs are helping to protect Australia's iconic places, and plants and animals, including threatened species and natural assets.

Significant investment is directed to projects that address national environmental priorities and the 2016 stakeholder survey showed that 79 per cent of respondents regard protecting or conserving nationally threatened species, communities, and areas of international importance, as a high priority.

Across the sub-programs, projects are delivering actions to protect or conserve 23 priority species identified in the Threatened Species Strategy. This includes species such as the mallee fowl, swift parrot, and regent honeyeater.

Under the Regional Stream alone, 140 projects are targeting at least one of the following assets: migratory species, threatened ecological communities, threatened species and World Heritage Areas.

In its first year, the Regional Stream delivered almost half a million plants in the ground, more than 200,000 hectares of weed treatment to improve habitat condition, and pest animal management to protect more than one million hectares of habitat from predation and degradation.

Regional bodies are using Indigenous ecological knowledge in the protection, rehabilitation and restoration of environmental assets, threatened species, ecological communities and migratory species.

At least half of Local Program grants are delivering actions to benefit Matters of National Environmental Significance, with more than 30 projects assisting threatened species or ecological communities. Outcomes include the successful release of captive bred threatened species back into the wild; the mobilisation of volunteers to protect critical breeding habitat for the Hooded Plover; and improvement in the survival of translocated Orange-bellied Parrots (up from 67 per cent in 2014–15 to 85 per cent in 2015–16).

By October 2016, the 25th Anniversary Landcare Grants had delivered outcomes against strategic objective 4 that include:

- eighty hectares of revegetation with almost 5,000 plants planted
- more than 1,000,000 hectares of pest control to manage pigs, cats, rabbits, foxes and other pest species
- more than 22,000 hectares of weed control reducing the threats posed by a range of damaging weed species.

The Reef Program, World Heritage Grants and other sub-programs are protecting iconic World Heritage places. Reef Program has demonstrated improvements in water quality, addressing a key threat to the Great Barrier Reef, as shown in Case Study 5.

Under the Regional Stream, projects are addressing threats to World Heritage Areas, for example by preventing the spread of weeds into the Greater Blue Mountains World Heritage Area. World Heritage Grants funding is improving the information base for making decisions about how to manage World Heritage Areas. For further information see Case Study B in Attachment C.

Indigenous Protected Areas comprise more than 67 million hectares, representing 44 per cent of the National Reserve System, the cornerstone of Australia's efforts to conserve plant and animal diversity. If the remaining Indigenous Protected Areas are dedicated, it will bring this contribution to more than half of Australia's protected area estate.

Case Study 5 - Project Catalyst



Project Catalyst under the Reef Program is a five-year \$10.5 million partnership involving Queensland sugarcane growers and major program partners, including regional bodies, the Australian Government, World Wildlife Fund Australia and the Coca-Cola Foundation.

The partnership supports a network of sugar cane growers on 78 properties covering more than 40,000 hectares within the Great Barrier Reef catchment to reduce environmental impact, enhance crop production and increase farm viability.

Farmer-led innovation has improved the quality of more than 150 billion litres of run off water flowing into the reef by reducing the amount of nitrogen, phosphorous, pesticides and other pollutants. Participating growers have also benefitted from improved farm-gate returns.



Malleefowl, Brian Furby
Photo: © Department of the Environment and Energy

4.3 The effectiveness and efficiency of regional natural resource management organisations in delivering the National Landcare Program's intended outcomes

Regional bodies are delivering the Regional Stream of the National Landcare Program. Many regional bodies also deliver projects under other components of the program, such as the Reef Program, 20 Million Trees and some election commitments.

There continues to be strong support, from both the community and experts in natural resource management, for the regional delivery model. It is seen as delivering regional scale natural resource management that acknowledges local conditions and addresses community needs.

The review found that the Regional Stream was effective in achieving program outcomes, for example:

- regional bodies are delivering regional scale land management, through regional planning processes and collaboration with other regional bodies, with 30 regional bodies delivering outcomes in partnership with other regional bodies. An example is shown in Case Study 7 in section 4.5.
- regional bodies are engaging farmers and fishers to increase their long term returns through better management of the natural resource base, with

eight million hectares of land directly benefiting from land management practice change.

- regional bodies engaging local communities, particularly in the planning process, and in delivering on-ground works. Regional bodies have embraced the requirement to direct at least 20 per cent of their funding to small, on-ground projects and related activities that are delivered by, or directly engage with the local Landcare community.
- regional bodies are effectively protecting species and natural assets, having delivered almost half a million plants in the ground and pest animal management to protect more than one million hectares of habitat from predation and degradation.

Further information on the contribution of the Regional Stream to meeting program objectives is outlined in section 4.2 and Attachment C.

Regional natural resource management planning, led by regional bodies, is key to the efficiency and effectiveness of delivering the National Landcare Program's objectives. Experts strongly support the continued use of the regional planning process, as it engages the community to identify natural resource management investment priorities and design new projects, aligning community priorities and Australian Government priorities.⁷⁹ This is shown in Case Study 6.

Effective regional plans are taken into account to ensure the effective and efficient delivery of other National Landcare Program sub-programs, such as 25th Anniversary Landcare Grants and 20 Million Trees projects.

The review found regional bodies increase the effectiveness and efficiency of the program by delivering investment through established local and regional networks. This supports the use of local knowledge, and tailored implementation approaches, and partnerships that are more likely to be efficient. For example, Perth NRM in Western Australia is delivering the Swan Canning River Recovery project using existing administrative support, and engaging expert local knowledge and onground working groups to choose the most efficient management actions, while building on previous investment in the area.

Case Study 6 - Wet Tropics Plan for People and Country



The Wet Tropics Plan for People and Country highlights the community's priorities for funding and activities in the region with regards to its natural resources.

To develop the plan, Terrain Natural Resource Management in far North Queensland undertook 18 months of consultation with the community, Indigenous stakeholders, research organisations and industry bodies, to find out what the community believed were important in managing natural resources. This included through local community workshops, technical workshops, community meetings, surveys and technical advisory groups.

The plan includes a statement of Aboriginal people's vision for Country, sets regional goals, and identifies priority actions to achieve those goals.

The plan is presented using an online format, which makes it easy to update. The plan is intended to be an interactive planning and tracking tool for the whole community to use.

Inputs to the review highlighted the value of the regional bodies in sharing knowledge and experience, but noted that there remains scope for improvement.⁸⁰ The need for more diverse and stronger partnerships, such as with agricultural industry bodies and research organisations, was commonly identified.

Some respondents to the 2016 stakeholder survey expressed concern that Regional Stream funding used for administration was excessive by some regional bodies and therefore reduced funding available to the community.⁸¹ Some regional bodies are finding efficiencies through innovations including shared service arrangements and delivering projects in partnership with other regional bodies.

4.4 Approaches to and effectiveness of engagement with the community and with industry for the National Landcare Program

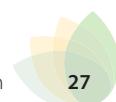
There was strong stakeholder views that community engagement and partnerships are critical for the success of the National Landcare Program. Strong engagement and partnerships improve the likelihood of achieving investment outcomes, can focus the strategic lens on investment decisions, makes communities feel valued, and leverage funding to maximise outcomes.

The review indicates that the National Landcare Program is effective in engaging the community. Across all stakeholder groups, the majority of respondents to the 2016 stakeholder survey were satisfied with their level of engagement in project design and delivery.⁸²

Through the program, community engagement and partnerships mostly occurs through:

- receiving support from Regional Landcare Facilitators and other regional body staff in coordinating and supporting them to build capacity and deliver onground works
- receiving small grants, both directly and through regional bodies, to help fund on-ground projects to address local issues and test innovation practices that have potential benefits for their industry
- participating in regional planning processes to determine investment priorities for their area
- taking up employment or training opportunities.

A wide range of stakeholders strongly supported the approach of some sub-programs in allowing the community to determine natural resource management priorities in the local context.⁸³ This creates greater ownership of sites and project delivery, as demonstrated in Case Study 7, which can provide benefits following the contracted conclusion of projects. Grantees, or other community members, often continue maintenance of the project, ensuring benefits are effective over the



long-term and improving the efficiency of the program by leveraging volunteer efforts.

The National Landcare Advisory Committee and expert stakeholders strongly supported the investment, through the Regional Stream, in a natural resource management system of connected organisations and mature trusted partnerships that improves effectiveness of project delivery.⁸⁴ This system links less experienced project managers to organisations with established governance and risk frameworks, mitigating the risks to project delivery.

Inputs to the review highlighted the importance of this delivery system in sharing knowledge and experience, and noted that there is scope for continuing to improve knowledge sharing amongst a range of natural resource management practitioners.⁸⁵ A range of stakeholders identified an opportunity to improve and diversify partnerships, including improving linkages with industry and research organisations.⁸⁶

A range of expert stakeholders and respondents to the 2016 survey acknowledged that the National Landcare Program is effective in building community capacity and maintaining a national system of natural resource management. More than 95 per cent of respondents agree that the program has improved capacity, environmental health, community engagement and sustainable agriculture practices.⁸⁷ More than 80 per cent of respondents stated the National Landcare Program had increased adoption of, and enhanced social and institutional capacity for sustainable land management practices.⁸⁸

These elements contribute to the resilience of communities, and productive and natural systems. An increased focus on concepts like 'resilience' and 'adaptive capacity' in future programs would be viewed as a positive refinement by some stakeholders.⁸⁹

The National Landcare Program has been effective in integrating conservation and farming interests, community input, and contribution and support from all levels of government.⁹⁰ This approach has been viewed as central to delivering effective natural resource management services and outcomes in Australia.⁹¹

The National Landcare Program is helping to increase Indigenous participation in natural resource management (see Case Study 5), but evidence provided to the review suggests that more can be done. For example, the stakeholder survey revealed a low level of alignment between community and national priorities

in relation to Indigenous engagement. Enhancing the links between Indigenous Protected Areas and Indigenous Ranger programs, and using their success to inform appropriate Indigenous participation in other programs, could achieve more meaningful Indigenous and environmental outcomes across the National Landcare Program.

The review found support for retaining the use of the Landcare approach, which is a recognised and trusted model and name; and that the Landcare approach needs to be refreshed to meet current community interests and needs.

Submissions to the review highlight an opportunity for funding from sources other than the Commonwealth in future programs. Through partnerships and engagement, Australian Government investment can leverage contributions from private companies, not-for-profit organisations and other governments. In addition, landholders who receive grants often provide significant cash and in-kind contributions to the project, estimated at between \$2.80 and \$16.00 for every government dollar invested.⁹² While not uniform across all jurisdictions, the leveraged investment has matched Commonwealth investment through the Regional Stream. There may be opportunities for the Australian Government to leverage more funds from all of these sources as well as from new sources. Experts and the National Landcare Advisory Committee particularly highlighted the opportunity to leverage more funds from some state and territory governments.⁹³

4.5 The effectiveness, efficiency and appropriateness of the delivery arrangements for the National Landcare Program, including Australian Government governance

The National Landcare Program uses a range of approaches to deliver its investment, including:

- the Regional Stream delivered through the 56 regional bodies
- larger grants processes, with projects worth \$100,000 which are often delivered over more than 18 months
- smaller grants processes, with projects worth less than \$100,000 which are often delivered over 18 months or less
- procurements, reverse auctions and national partnership agreements with the states.

This section reviews the effectiveness, efficiency and appropriateness of each of these delivery approaches. There are characteristics at the whole of program level that affect the effectiveness, efficiency and appropriateness of program delivery, which this section discusses first.

Whole-of-program delivery arrangements

The 2016 stakeholder survey indicated that the mix of delivery arrangements through the National Landcare Program is an efficient and effective way to achieve its objectives.⁹⁴ When asked what not to change about the program, stakeholders most frequently nominated the regional delivery model and engagement with, and involvement of the local community.⁹⁵

Program objectives

The review found the National Landcare Program objectives are appropriate because they are consistent with national priorities, accommodate regional and local priorities and allow grantees to determine approaches to delivery.

Respondents to the 2016 stakeholder survey stated that the priorities did not need significant change. The vast majority of respondents felt that the program's objectives align with their own priorities. Nearly three quarters of respondents from regional bodies felt that the National Landcare Program allowed enough autonomy in setting regional and local priorities and stakeholders suggested that any changes to the objectives should include a greater focus on regional or local priorities.⁹⁶

The review also found the program's objectives could better facilitate an effective and efficient delivery of the program by ensuring that the objectives are specific, measurable, attainable, realistic and time-bound. This would improve monitoring and reporting at both the project and program level.

Governance

The review supported the delivery of integrated projects that address objectives across agriculture, environment and Indigenous priorities. This can provide efficiencies by leveraging investment, reducing the number of delivery agents, and reducing administration.

Some feedback to the review indicated that there is scope to reduce complexity and increase efficiency in administration of sub-programs managed jointly by multiple portfolios.

Application, assessment and reporting processes

The review sought feedback on efficiency of application and assessment processes. Some respondents to the 2016 stakeholder survey identified that no change was required to application, assessment and contracting processes. Other respondents suggested simpler and more streamlined processes.

The review revealed over-simplification of application processes can result in insufficient collection of information at point of application, with increased transaction costs and administrative burden for all parties further into the process. Although MERI plans were considered more complex and time-consuming than traditional application processes, stakeholders recognised that MERI plans ensured project delivery aligned with project objectives, gave stronger evidence for achieving targets, and helped applicants' better plan activities.⁹⁷

The review found programs with clear targets and objectives can increase efficiency by reducing time spent developing appropriately targeted funding applications, and improve the ability to demonstrate tangible outcomes. It also reduces the time needed the assessment of applications and improves the ability to assess value for money. For example, the 20 Million Trees sub-program was identified as having clear program objectives with well-aligned application and assessment processes that supported the development of project MERI plans.

Under most sub-programs, the Departments of the Environment and Energy and/or Agriculture and Water Resources work with successful grantees to develop their MERI plans to improve the effectiveness of project implementation and delivery. This approach has been successful under programs including the Innovation Grants and 20 Million Trees programs. In addition to MERI plans, projects funded under the Innovation Grants formed advisory committees of relevant industry and scientific expertise, which improved governance and kept projects accountable to their intended outcomes.

While the complexity of reporting project information through MERIT was a concern for a small number of stakeholders, the review supports the continued refinement and development of MERIT to better capture critical outcome and impact information.

The National Landcare Advisory Committee identified that there is an opportunity to improve the

capture of social and economic benefits in program reporting. Improving this would enable the Australian Government and its delivery partners to more clearly communicate the wider benefits of investments in natural resource management.

Monitoring the condition of natural resources

The Australian National Audit Office recommended, as part of its review of the Caring for Our Country Program conducted in 2012, that natural resource condition be monitored to measure progress towards program outcomes. Work has consequently been conducted to collect credible data on the condition of some natural resources under the National Landcare Program.

An example of resource condition monitoring is the assessment of vegetation groundcover percentage to identify the likelihood of wind and water erosion. The data collected provided evidence that widespread adoption of management practices to increase

groundcover had decreased erosion rates and improved productivity.⁹⁸

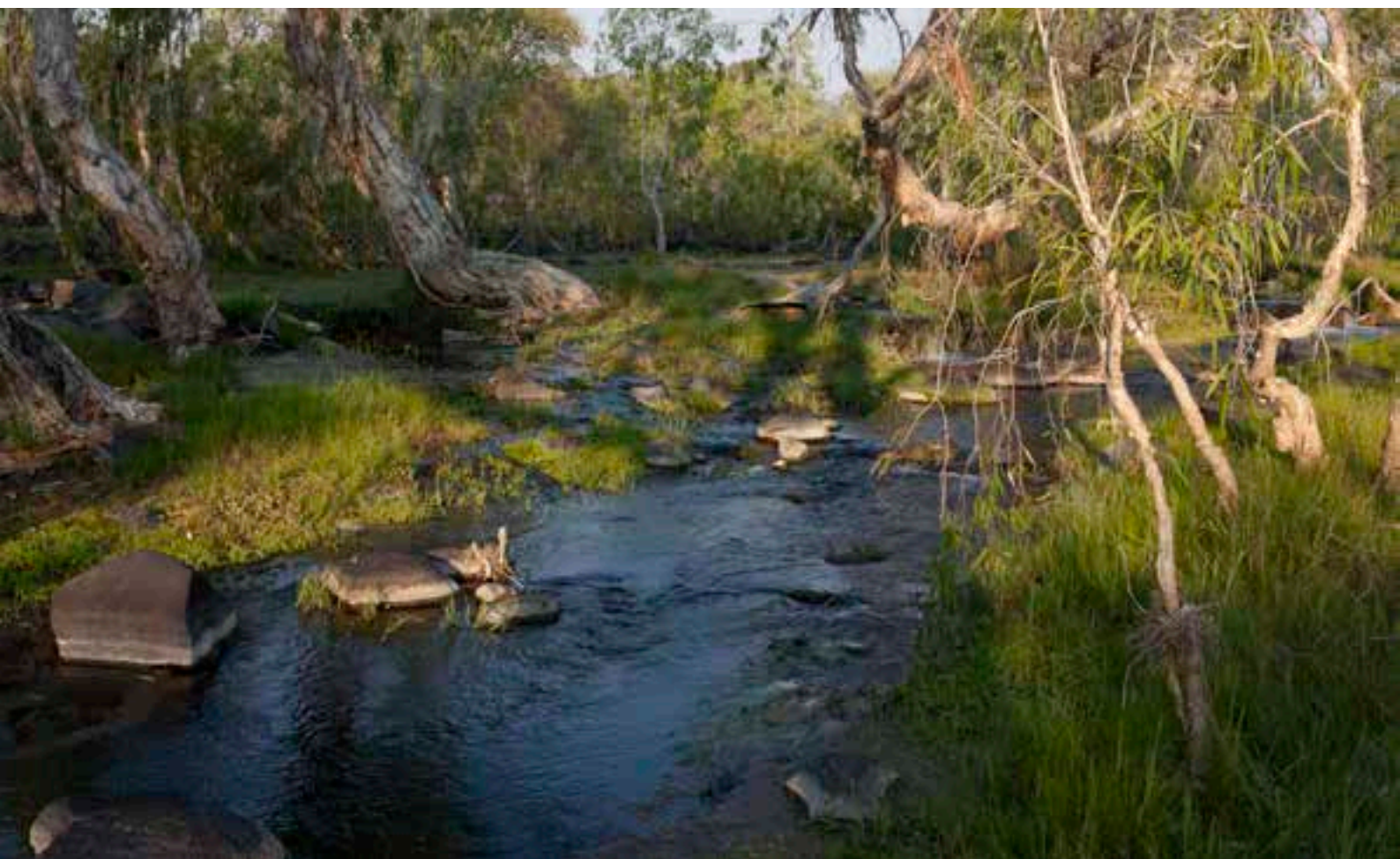
Native vegetation monitoring data has also shown an improvement in biodiversity condition, as a result of planting and protecting native vegetation. Survey data further supports this trend, showing tree planting has increased bird, reptile and insect numbers.⁹⁹

Improving natural resource condition monitoring will lead to more effective reporting of outcomes and better inform future investments.

Regional Stream

The 56 regional bodies, nationally, are generally allocated funding based on the size, population, assets and threats in their region. Regional bodies work with delivery partners and their communities to plan and deliver outcomes according to the Australian Government's requirements and the needs of their communities.

Site for weed removal. Photo: © Department of the Environment and Energy



The efficiency and effectiveness of regional bodies in delivering National Landcare Program outcomes is outlined in section 4.3. The Regional Stream is a form of large grant process, so it shares many of the characteristics outlined in the section on larger grants.

The recently implemented Performance Framework for Regional Natural Resource Management Organisations is improving effectiveness of the Regional Stream by determining best practice standards for organisational and financial governance, community engagement, regional planning, and monitoring and reporting. It allows monitoring of regional bodies' performance against these standards, and facilitates capacity building by allowing regional bodies to benchmark and learn from each other's experience.

Nationally, regional bodies met 94 per cent of all performance expectations in 2016, with 24 regional bodies meeting all expected best practice requirements. Key issues identified through the self-assessment process were Indigenous participation in aspects of natural resource management planning and delivery, and the expected practices relating to financial and performance reporting. All regional bodies that do not currently meet all expectations are required to have a plan to meet them in advance of the next self-assessment due in June 2017.

Greater efficiencies and improved outcomes may be achieved through regional bodies working together in consortiums, such as the successful Rangelands Alliance, Reef Alliance and Tri-State Alliance (see Case Study 7).

The review notes funding allocations under the Regional Stream are mostly based on historical priorities and criteria, and could be better aligned with current and future priorities and criteria. Regional scale delivery may also be improved by opening up opportunities for involvement to a wider range of organisations.

Case Study 7 - Tri-State Murray Alliance community engagement



The National Landcare Program is helping to support the Tri-State Murray Alliance of seven regional bodies working with communities along the River Murray Corridor to grow the economy, secure the environment and motivate and inspire the community.

Across the Alliance region there are over 630 Landcare and natural resource management groups with nearly 30,000 members, delivering 228,000 hours of volunteer work a year.

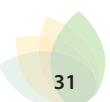
The Alliance recognises that the community needs to be a part of the planning, delivery, monitoring and on-going management across the Murray River corridor. They are supporting volunteers by running community workshops to build skills in areas such as soil management, safe chemical use, river health works, and governance and grant writing.

Over 56,000 community members have participated in 3,500 capacity building activities held by Alliance partners along the River Murray corridor in the past year.

The \$7.3 million of Australian and state government funding that has been provided to 371 groups delivering projects, adds to the \$11 million contributed by the community.

These volunteers have achieved:

- 325,000 hectares of pest plant and animal control
- 140 kilometres of fencing
- 3,480 hectares of revegetated habitat.



Larger Grants

Competitive grants processes were used to directly allocate larger grants generally more than \$100,000, and generally fund longer-term projects of more than 18 months in duration. This approach was used for the Innovation Grants, Reef Program, Indigenous Protected Areas and Indigenous Ranger Programs, Target Area Grants, and World Heritage Grants.

The review found many of the larger grants sub-programs deliver diverse benefits, regional scale outcomes, over long periods, using well-established networks. This approach is applied in the Reef Program, Indigenous Protected Areas and the Indigenous Ranger Program. Each of these sub-programs deliver agricultural, environmental, employment and Indigenous outcomes.

For example, the Indigenous Protected Areas program protects biodiversity and cultural heritage as well as providing employment, education and training opportunities for Indigenous people, particularly in remote areas. Providing these benefits through one program delivers efficiencies by leveraging investment, reducing the number of delivery agents, and reducing administration.

Regional-scale investment and a broad range of priorities can make it difficult to assess project outcomes and cost-effectiveness. Standardisation of measurements to enable whole of program reporting can also be difficult. MERIT and Paddock to Reef Scale Modelling and Monitoring have gone some way to mitigating this issue, with further refinement of MERIT recommended to better support outcome reporting.

Programs with longer project timeframes provide efficiencies for both grantees and government by providing certainty of funding and project delivery, and reduced administrative burden.¹⁰⁰ This approach reduces time spent applying for funding, adjusting staffing levels, building capacity, and managing contracts.

Many of these sub-programs deliver investment through established local and regional networks, which support the use of local knowledge, and tailored implementation approaches and partnerships that are more likely to be efficient.

Longer-term projects are more likely to be effective in delivering sustained outcomes as many of the environmental, productivity, and community engagement issues that the National Landcare Program is intended to address require prolonged efforts¹⁰¹.

The 2016 stakeholder survey showed continued support for long term funding programs to support organisational capacity and stability, long-term planning, and delivery of well-planned outputs and outcomes.¹⁰² In addition, longer-term projects allow for adaptive management of risks.

Case Study 8 - Underpinning better management in the Rangeland



This Innovation Grants project supported farmers in Australian rangeland environments to adopt spatial tool technology to improve vegetation ground cover, plan and make informed decisions to increase farm-gate profits, productivity and sustainability.

The spatial hub combined the latest cloud computing, geospatial mapping technologies and time-series remote sensing together. It provides tools for farmers to map, plan, analyse and monitor property infrastructure, land resources and groundcover to improve soil health and agriculture productivity. This enables users to analyse and report on seasonal trends in ground cover over thirty years within a paddock or across their entire property in less than thirty seconds.

By January 2017, 657 properties covering an area of more than sixty million hectares were using the system.

Further development of the project as a common platform for digital agriculture applications is being supported through industry organisations. This is expected to deliver major improvements in ground cover management at property level, and significantly increase the capacity of regions to provide objective evidence of improvements in ground cover management arising from their investment of Australian government and other funds.

The Innovation Grants provides an example of the benefits of using appropriate knowledge and delivering sustained outcomes. To ensure that the projects had scientific rigour and were truly innovative, advisory groups comprising scientists and industry experts were formed to help design, deliver and monitor projects, and ensure that outcomes met farmer needs. Because industry was involved from the start, and were fully supportive of the outcomes being delivered, many of them continued to fund activities after projects were completed, as shown in Case Study 8.

The Reef Program was highlighted as having efficient assessment and grant management processes. Assessment processes were quick because of clearly defined processes and good line-of-sight to project delivery approaches. Compliance burden was low and project deliverables were considered to be good quality.

Small Grants and other grants

Competitive and negotiated grants processes were used to directly allocate smaller grants generally of less than \$100,000, and fund shorter-term projects of 18 months or less. This includes the Sustainable Agriculture Small Grants, 25th Anniversary Landcare Grants, and many of the election commitments. 20 Million Trees grants projects range from \$20,000 to \$100,000 and from 18 to 36 months in duration, so have some characteristics of both small and larger grants.

The review found that there remains strong community support for small grants. These grants engage the community in specific targeted projects and actions that address national priorities at a local scale. Stakeholder survey respondents highlighted some improvements that could be made to the delivery of small grants. These include improving cohesion and strategic oversight of small grants, to increase effectiveness in achieving long-term, larger-scale outcomes.¹⁰³ Small grants programs would also benefit from greater administrative efficiency in assessing, delivering and monitoring projects. These programs tend to require high levels of administrative resourcing and costs of servicing the projects for the government, relative to the amount of funding awarded. This is due to a higher number of applications to assess and projects to manage, and the level of assistance required to help grantees meet funding requirements.

Stakeholders stated that, for some sub-programs, project timeframes could have been better aligned to accommodate delivery and flexibility.¹⁰⁴ For example,

some small grants programs required projects to be completed in short periods (for example, less than two years), but were aimed at addressing issues that require long-term effort.

Case Study 9 - Macleay Valley



The Macleay Valley - Sustainable Grazing Practices and Winter Dung Beetle Trial project under the 25th Anniversary Landcare Grants program provided a series of locally relevant capacity building events in the mid north coast of New South Wales that promoted sustainable grazing and soil management practices, as well as winter dung beetle trials.

A sustainable grazing course educated graziers on managing pastures for climate and soil type, and maximising beef production without degrading the natural resource base. Agronomists spoke about the beneficial role of dung beetles in pasture and soil management and how to manage drenching without killing beetles.

Property visits and property-level grazing management plan development assisted landholders with practice change. The project released nine dung beetle colonies and obtained a baseline assessment of the beetle species for the Macleay Valley.

37 landholders implemented management practice changes over 1,000 hectares. The project will improve soil health, water quality, stock and human food nutrition, carbon storage, and reduce use of chemicals and artificial fertilisers and spread of buffalo fly.

Grant recipients and local natural resource management groups nevertheless supported continued funding for small grants.¹⁰⁵ Some stakeholders stated that small grant programs targeted issues of importance to the community. Other benefits include local ownership of activities and outcomes and transfer of knowledge and on-ground action over a short time period. See for example Case Study 9.

Small grants were noted as being effective in responding to short-term issues that require a rapid response, such as responses to natural disasters or biosecurity risks. To be effective at this, the processes must be simplified and rolled out quickly.

Procurement, Reverse Auctions, National Partnership Agreements with the States

The National Landcare Program utilises procurements and reverse auctions under the 20 Million Trees and Environmental Stewardship Program respectively, to improve administrative and onground delivery efficiencies.

These approaches share many of the same characteristics and outcomes as larger grants processes, as they tend to be larger amounts of funding provided over several years.

The procurement model under the 20 Million Trees program provides cost effective delivery for large-scale plantings, as demonstrated in Case Study 10. This approach has served to increase competition between service providers.

Stakeholders similarly noted that the reverse auctions used by the Environmental Stewardship Program provided efficiencies and ability to deliver value for money.

These sub-programs were noted for being more targeted approaches, allowing more efficient and effective assessment and application of projects, and better demonstration of program outcomes.

National Partnership Agreements with states have been an effective mechanism where this level of government is best placed to deliver, leverage funding and coordinate efforts.

Case Study 10 - Buloke Woodland



Under the procurement stream of the 20 Million Trees Program, CO2 Australia is delivering a \$2.4 million project conducting large-scale restoration of endangered Buloke Woodlands within the conservation estate in northwest Victoria.

The project will plant more than 1.4 million trees on more than 1,200 hectares, and use a mix of species typical of Buloke Woodlands.

The project will improve biodiversity, habitat value and protection of vegetation. Buloke Woodland is important for endangered fauna, including the Mallee Emu-wren and remaining remnants in conservation lands of north-west Victoria are subject to incremental clearing, pests, weeds and fire.

Working with Parks Victoria, CO2 Australia will re-establish Buloke Woodlands on cleared lands within the Murray-Sunset National Park, home to 183 species of threatened plants and animals, as well as nearby conservation lands.

Locating the project within the conservation estate will provide for long-term protection of the tree plantings, as well as improving resilience of existing tracts of forest by providing a buffer.



Attachment A – Terms of Reference for the review of the National Landcare Program

Background

The National Landcare Program is a key part of the Australian Government's commitment to natural resource management. The program supports local and long-term environment, sustainable agriculture and Indigenous outcomes.

The National Landcare Program comprises four main appropriations – the Natural Heritage Trust, Environmental Stewardship Program, the Natural Resources Management Account and the Pest and disease preparedness and response programs. Funding from the Natural Heritage Trust is appropriated to the Department of the Environment and Energy, but is delivered jointly with the Departments of Agriculture and Water Resources and Prime Minister and Cabinet (in relation to Indigenous Protected Areas and the Working on Country supplementation). Funding from the Environmental Stewardship Program and the Natural Resources Management Account are appropriated to and managed by the Departments of the Environment and Energy and Agriculture and Water Resources respectively. The Department of the Treasury manages the Pest and disease preparedness and response programs appropriation on behalf of the Department of Agriculture and Water Resources.

The basis for the current arrangements agreed by the previous government in 2012–13 under the Caring for our Country program. In 2014–15, the new National Landcare Program continued existing contracts entered into under Caring for our Country, with changes to the regional stream to streamline arrangements. The National Landcare Program also delivers of a range of new priorities.

The majority of funding through the National Landcare Program is committed until 2017–18, with funding and the approach beyond that time period to be determined by government.

Objective and Scope

The Departments of the Environment and Energy and Agriculture and Water Resources, in consultation with the Department of Prime Minister and Cabinet, will conduct a review to examine the appropriateness and effectiveness of the National Landcare Program.

Scope

The review will report on:

- outcomes from the National Landcare Program and its predecessor programs
- the effectiveness of the National Landcare Program in delivering agriculture and environmental outcomes, as well as complementary benefits
- the effectiveness and efficiency of regional natural resource management organisations in delivering the National Landcare Program's intended outcomes
- approaches to and effectiveness of engagement with the community and with industry for the National Landcare Program
- the effectiveness, efficiency and appropriateness of the delivery arrangements for the National Landcare Program, including Australian Government governance.

The review will not make recommendations relating to policy approaches, implementation or future delivery mechanisms.

The National Landcare Program funds a range of measures. There are a number of sub-programs funded from the Natural Heritage Trust, including:

- Regional Stream (through regional natural resource management organisations)
- 20 Million Trees
- Local programs (e.g. Cumberland Conservation Corridor, Kimberley Cane Toad Clean Up, Coastal

River Recovery, Dandenong Ranges, Whale and Dolphin Protection Plan)

- Small Grants (25th Anniversary Landcare Grants and Sustainable Agriculture Small Grants)
- Indigenous Protected Areas
- World Heritage Grants
- Reef Program
- Working on Country Rangers supplementation
- Target Area Grants.

Other sub-programs funded from the other appropriations are:

- Environment Stewardship Program
- Innovation Grants (Natural Resources Management Account)
- Pest and disease preparedness and response programs.

The review will not examine each sub-program in detail but will focus on the National Landcare Program as a whole and in particular on those elements funded under the Natural Heritage Trust and competitive grant rounds under the Natural Resources Management Account.

Inputs

The review will take into account the following sources:

- a stakeholder survey to be conducted for the purposes of informing this review
- an analysis of Natural Heritage Trust funding since 1996-97
- monitoring and reporting data
- previous program reviews, evaluations and reports
- other relevant sources and literature, such as the Wentworth Group Report on Australian Regional Environmental Accounts Trial, ANU report on Natural Resource Management Policy and Planning in Australia, and the National Landcare Advisory Committee's work on assessing the economic impacts of Landcare.

Governance arrangements

The review will be conducted internally by the Departments of the Environment and Energy and Agriculture and Water Resources, with input from the Department of Prime Minister and Cabinet Office of Indigenous Affairs.

Inter-Departmental Meeting

The Departments of the Environment and Energy and Agriculture and Water Resources will host an inter-departmental meeting to provide advice on the review, with the Departments of the Prime Minister and Cabinet, Treasury, and Finance.

Joint Executive meetings

Existing Joint Executive meetings between the Departments of the Environment and Energy and Agriculture and Water Resources will guide the review. The Department of Prime Minister and Cabinet Office of Indigenous Affairs will continue to participate in these meetings.

National Landcare Advisory Committee

The National Landcare Advisory Committee will advise the Departments of the Environment and Energy and Agriculture and Water Resources in the review.

Timing

The review will present its findings during 2016-17.



Attachment B – History of Australian Government investment in Natural Resource Management

1990–91 to 2007–08: National Landcare Program

The *Natural Resources Management (Financial Assistance) Act 1992* (Cth) was the first in a line of Australia Government natural resource management measures that provided an integrated approach to managing soil, water and vegetation.¹⁰⁶ It funded the first National Landcare Program, which brought together existing Commonwealth land and water resource management programs to deliver the Decade of Landcare Plan.

Between 1990–91 and 2007–08, the National Landcare Program delivered \$881 million through 12,000 projects to improve natural resources management through long-term change and uptake and adoption of sustainable land management practices. The program was delivered by the Agriculture department through the Natural Resource Management Account and used a range of delivery mechanisms, including: sustainable industry grants; partnerships between the states, territories and Commonwealth; regional natural resource management bodies; property management planning; community based facilitators; and funding for Landcare groups and infrastructure including the Australian Landcare Council and Landcare Australia Limited. Investment also occurred through national priority projects with a national focus or application.

The National Landcare Program continued alongside successive programs until it was integrated into the Caring for our Country program in 2008–09.

1996–97 to 2007–08: Natural Heritage Trust, National Action Plan for Salinity and Water Quality, and Environmental Stewardship Program

In 1997, the Howard Government established the Natural Heritage Trust under the *National Heritage Trust of Australia Act 1997* (Cth). The Trust invested in the conservation, repair and sustainable use of Australia's natural environment in an effort to preserve natural capital for future generations, while balancing environmental protection and economic growth.¹⁰⁷

The Trust, and the range of initiatives it funded, recognised that restoration of the country's natural capital required a nation-wide, integrated approach. Consistent with this intent, decision-making was made through the Natural Heritage Ministerial Board, consisting of the Environment and Agriculture ministers.

Budget for Phase 1 of the Natural Heritage Trust program was \$1.5 billion and ran over seven years from 1996–97 to 2001–02. It brought together a range of programs to create a 'one stop shop' for delivery of both environmental protection and sustainable agriculture priorities.

National partnership agreements underpinned delivery of several of the Natural Heritage Trust component programs, including the National Landcare Program, Bushcare, the National Reserve System, Waterwatch and the National Weeds Program. Coastcare had tri-lateral agreements that included local governments. Other component programs included the National Land and Water Resources Audit, Coasts and Clean Seas, the Waste Management Awareness Program, the National River Health Program and World Heritage area management.¹⁰⁸

In 2000–01, the Australian Government allocated \$700 million over eight years for the National Action Plan for Salinity and Water Quality (NAP).¹⁰⁹ The Council

of Australian Governments intended that NAP would enable regional communities to address the issues of salinity and water quality through landscape-scale change, with state and territory governments contributing a further \$700 million to match the Australian Government funding.

Bilateral agreements were established between the Commonwealth and each of the states and territories to underpin regional delivery arrangements and outlined how governments would work as investment partners, with state governments matching Commonwealth contributions. Joint steering committees and independent advisory panels oversaw these agreements.¹¹⁰

A review of phase one of the Natural Heritage Trust program found it was successful at encouraging cooperative partnerships between and within government and private actors.¹¹¹ However, reviews of natural resource management programs around this time, including a 1997 Australian National Audit Office review of Commonwealth Natural Resource Management and Environment Programs, found that the small scale of projects and a focus on on-ground outcomes undermined strategic investment and limited the scope for community development.¹¹²

Under phase two of the Natural Heritage Trust program, the regional delivery model that originally initiated under the National Action Plan for Salinity and Water Quality was expanded to the whole country. Of the total \$1.8 billion over six years (from 2002–03 to 2007–08), \$747 million was delivered through the regional delivery model.

To provide a strategic lens, regional natural resource management bodies were required to develop environment and sustainable agriculture priorities for their region, in consultation with their communities. In doing so, regional natural resource management plans and investment strategies were developed and jointly accredited by the Australian Government and relevant state or territory governments.

In addition to regional delivery, the second phase of the Natural Heritage Trust focussed on delivery of Landcare, Coastcare, Rivercare and Bushcare outcomes. Its delivery mechanisms included Envirofund grants to community groups, facilitators and coordinators, national strategic projects.

In 2007, the Government introduced the Environmental Stewardship Program worth \$141 million over 15 years. The program's objectives

were the long-term protection of high value environmental assets on private land, and enduring changes in land manager attitudes and behaviours towards environmental protection and sustainable land management practices.

Audits of Commonwealth investment over this period consistently noted the difficulty of measuring and reporting outcomes. Support for the regional delivery model remained strong,¹¹³ but programs were criticised for spreading funds too widely in the community, making it difficult to measure and report improvements in the environment or the adoption of innovative practices. These reviews also identified a risk of duplication and fragmentation of outcomes under multiple programs.¹¹⁴

2008–09 to 2013–14: Caring for our Country

In 2008, the Rudd Government established the Caring for our Country initiative, which integrated Natural Heritage Trust program, the National Landcare Program, Environmental Stewardship Program and Working on Country under a single banner.

Phase one of Caring for our Country (2008–09 to 2012–13) was worth over \$2 billion, and placed emphasis on investment in national priority areas, including through the release of annual business plans to target investment. The program placed importance on achieving goals at landscape-scale, such as multi-regional and cross-jurisdictional projects through partnerships.¹¹⁵

A range of investment approaches were used, including base-level funding for regional natural resource management bodies, competitive open call grants for large, medium and small projects, and funding for smaller community groups and projects through Community Action Grants. The Australian Government also negotiated some funds directly through ad hoc grants.¹¹⁶

The government announced phase two of Caring for our Country as \$2.2 billion over five years from 2013, but the program was reframed with the change of government. In response to reviews of phase one that raised concerns about insufficient consultation with stakeholders on priority setting¹¹⁷, phase two placed greater emphasis on community engagement, and building knowledge and skills.¹¹⁸

Under phase two, funding for regional natural resource management bodies separated into two streams – the Sustainable Agriculture stream and the Sustainable Environment stream. Decision-making was coordinated between both departments and funds administered by the Environment department.

Attempts to negotiate a National Partnership Agreement with state and territory governments were unsuccessful and bilateral agreements were instead used to support coordination between the Commonwealth and the states and territories. Funding contributions from state and territory governments were not required under Caring for our Country, leaving only a handful of states co-contributing.

2014–15 to 2017–18: National Landcare Program

In 2014, the Abbott Government announced that it would bring phase two of Caring for our Country and Landcare together to create the new National Landcare Program. The National Landcare Program promotes the principles of simple, local and long-term, and emphasises communities having a greater say in determining local and regional priorities. The National Landcare Program is funded through the Natural Heritage Trust, Natural Resource Management Account, and Environmental Stewardship Program appropriations, as well as a Treasury appropriation.

Under the National Landcare Program, regional funding for agriculture and environment priorities were merged under one stream, and delivered through one contract with each regional body. Although the program does not require contributions from states and territories, some states continue to operate under bilateral agreements with the Commonwealth.

Budget reductions in 2014 led to a 20 per cent reduction in ongoing funding for regional bodies from 2013–14 levels with regional bodies also required to allocate 20 per cent to community engagement activities, such as small grants to community groups. Remaining unallocated funds in the National Landcare Program supported election commitments, including the 20 Million Trees Program.



Attachment C – National Landcare Program Sub-programs

Regional Stream

Under the Regional Stream, Australia's 56 regional bodies receive around \$450 million from 2014–15 to 2017–18, to support the coordinated delivery of National Landcare Program activities that promote sustainable agriculture practices and environment protection.

This funding supports infrastructure, capacity and capability to achieve national outcomes at a local scale.

This investment allows the Australian Government to connect with communities to address the land management issues most important in their area. The program creates employment and training opportunities in regional communities, with a strong focus on Indigenous involvement.

With their knowledge and community linkages, regional bodies provide the capacity for rapid response to biosecurity risks and natural disasters, thereby reducing risks to our agricultural productivity, natural ecosystems and human health. This capacity also supports emerging government and community priorities, such as feral cat control.

This word-leading collaborative, integrated model is improving Australia's productive landscapes and protecting our unique species and habitats.

Key requirements of the Regional Stream include that regional bodies must:

- deliver nationally important environment and sustainable agriculture outcomes that help Australia to meet its national and international obligations
- prioritise funding in line with regional natural resource management plans, which bring together science and community perspectives
- allocate at least 20 per cent of their annual Regional Stream funding to small, on ground projects and related activities are delivered by, or directly engage with the local Landcare community

- meet the standards set out in the Australian Government Performance Framework for Regional Natural Resource Management Organisations.

The Regional Stream includes funding for OceanWatch Australia, which manages a broad range of projects to improve environmental practices, protect threatened marine species, reduce by-catch, introduce sustainable technologies, change behaviours and restore important marine habitats. OceanWatch's key activities involve enhancing fish habitats and improving water quality in estuaries and coastal environments; working with industry and local communities to minimise environmental impacts; and introducing industry and communities to sustainable technologies and behaviours.

Outcomes

Reporting under the National Landcare Program has shown that regional bodies are delivering against the program's strategic objectives. Further information on this is provided in section 4.

By early December 2016, the Regional Stream had delivered the following:

- 335,000 participants have assisted in delivering the program, including 23,000 Indigenous participants at events
- Over 25,000 farming entities have been engaged, with over 6,000 entities adopting management practice change to improve productivity, with complimentary environmental outcomes
- Nearly 8 million hectares of land is directly benefiting from practice change to improve productivity and natural assets
- Over 1.9 million hectares of new area has been treated for weeds, including species such as *Spartina anglica*, *Parkinsonia aculeate*, *Prosopis juliflora*, and *acacia nilotica*
- Over 2.2 million hectares of new area has been treated for pests such as cats, rabbits, pigs, and foxes

- Over 2,800 hectares of land has been revegetated, including planting over 760,000 plants
- Over 500 grants have been awarded to community groups or individuals by regional bodies, worth nearly \$9 million.

The Regional Stream provides a strong capacity to deliver strategic, landscape-scale projects. Currently, 30 regional bodies are delivering outcomes collaboratively and across regional boundaries. These projects are delivering works to reduce threats to priority assets.

Community engagement is a strength of the Regional Stream, including involving the community, farmers and Indigenous people in project delivery, project design and regional planning. The majority of stakeholder survey participants stated that they were happy with their level of engagement, and considered that the regional body considered and potentially took on board their suggestions.

Regional bodies continue to demonstrate strong alignment to national and international priorities. Currently, 55 regional bodies are targeting at least one of the following assets through 141 projects: migratory species, threatened ecological communities and World Heritage Areas.

Case Study A

The Farming for Sustainable Soils project, delivered by North Central Catchment Management Authority in Victoria, is improving the productive capacity of properties by partnering farmers with industry experts to learn best practice techniques for managing their soils. Through the project, over 90 farmers in north central Victoria are now implementing a Local Area Soil Protection Plan that advances soil health by improving soil structure, hydrologic performance, ground cover and soil organic carbon.

Through workshops and field days, the project is helping farmers to build confidence to try new practices on their properties, achieving both environmental benefit and increased productivity. Healthy soils not only reduce the need for excessive fertiliser use, prevent erosion and reduce sedimentation of waterways, they also produce greater pasture and crop yields.

See also Case Studies 2, 3, 4, 6 and 7 in the body of this report.

World Heritage Grants

Australia has 13 areas that have been recognised under the World Heritage Convention as having outstanding universal values. These areas, which include Uluru and Kakadu, are internationally recognised as iconic places. The Australian Government has obligations under the World Heritage Convention to identify, protect, conserve, present, transmit to future generations and, if appropriate rehabilitate the Outstanding Universal Value of each World Heritage property.

The National Landcare Program provides a total of \$29.8 million over 2014–15 to 2017–18 through World Heritage Grants to the New South Wales, Queensland, South Australian, Western Australian and Tasmanian governments to support management of the 13 Australian World Heritage Areas listed for natural values. All of the relevant state governments also contribute to these projects, with for example, Australian Government funding matched at a ratio of 60:40 by Queensland and 50:50 by Tasmania.

Outcomes

This funding is helping the Australian Government to meet its international obligations and protect Australia's international reputation. It is maintaining appropriate management arrangements for World Heritage sites and investing in actions to reduce critical threats, and improve, restore, enhance or present the Outstanding Universal Value and integrity of World Heritage sites.

Funding has supported a World Heritage Executive Officer and Advisory Committee for 11 World Heritage Properties.

These functions help improve the information base available for the Australian Government and other stakeholders, including:

- providing advice, including on community perspectives, to the State and Commonwealth on the identification, protection, conservation, presentation and management of the property
- helping the Australian Government make informed decisions about impacts on World Heritage properties when considering EPBC Act development proposals
- developing broader communication materials to promote and transmit to future generations the Outstanding Universal Values of the properties.

Case Study B

The Macquarie Island rabbit and rodent eradication project, funded by the Australian and Tasmanian governments, ended in April 2016 with the declaration that no rabbits, rats or mice had been detected for the past two and a half years.

The eradication program eliminated approximately 150,000 rabbits from the island in the first year. The release of calicivirus culled numbers initially, followed by an aerial baiting program targeting surviving rabbits, as well as rats and mice. After the baiting, hunters dispatched rabbits using detection dogs, spotlighting, burrow fumigation and trapping.

The flora and fauna on the World Heritage listed island is already bouncing back, with tussock grasses providing cover for seabird chicks, and megaherbs returning. Some bird species, previously restricted to breeding on offshore rock stacks, such as blue petrels and Antarctic terns, have begun to recolonise the main island. The cause of much of the island's erosion and deadly landslides has also been removed.

The project has also built capacity within Tasmania Parks and Wildlife Service and within Australia generally for conducting invasive pest eradication projects.

In achieving these outcomes, the Australian Government has identified six priority programs for investment: Water Quality Grants and Partnerships; System Repair (not funded through the National Landcare Program) and Urban Water Planning Grants; Water Quality Monitoring and Reporting and Research and Development; Crown of Thorns Starfish Control; Land and Sea Country Partnerships; and critical operational support for the Great Barrier Reef Marine Park Authority.

The Reef 2050 Plan is the overarching framework for protecting and managing the Great Barrier Reef until 2050. The Plan sets clear actions, targets, objectives and outcomes to drive and guide the short, medium and long-term management of the Reef. The Australian Government supports the implementation of priority Reef 2050 Plan actions through more than \$101 million investment over six years (2016–17 to 2021–22) from the Natural Heritage Trust.

Outcomes

The primary outcome sought under the Reef Program was the improvement of water quality entering the Great Barrier Reef lagoon through the reduction of anthropogenic pollutants from agricultural land use.

Under the Reef Program, the Paddock to Reef Scale Modelling and Monitoring, which reports the on-ground activity outputs and outcomes, supplements recipient reporting through MERIT.

As of June 2015, through the support provided to land managers to improve their management practices, Reef Program achieved 70 per cent ground cover across the Great Barrier Reef catchments, a 20 per cent reduction in suspended sediment, a 50 per cent reduction in excess nitrogen from fertilisers and a 60 per cent reduction in pesticides.

The program is making a strong contribution to the goals and targets of the Reef Water Quality Protection Plan and through this, the Reef 2050 Long Term Sustainability Plan. It also supports Indigenous groups through the development and accreditation of Traditional Use of Marine Resources Agreements.

Reef Program and Reef 2050 Plan

The Australian Government has committed to protecting the Great Barrier Reef under the World Heritage Convention. Protecting the Reef is also important to our economy – in 2013, the Great Barrier Reef catchment supported a tourism industry worth almost \$5.2 billion.

The Reef Program provides \$82.7 million over 2014–15 to 2017–18 for the protection of the Great Barrier Reef, by supporting farmers and industries to adopt practices that mitigate offsite threats that impact the health of the reef. The Australian and Queensland governments have established three priority work areas to improve outcomes for water quality entering the Great Barrier Reef Marine Park and World Heritage Area: investment and knowledge, responding to the challenge, and evaluating performance.

Case Study C

Project Catalyst is a five-year \$10.5 million partnership involving Queensland sugarcane growers and major program partners, including regional bodies, the Australian Government, World Wildlife Fund Australia and the Coca-Cola Foundation.

The partnership supports a network of growers within sugarcane production systems in the Great Barrier Reef catchment to reduce environmental impact, enhance crop production and increase farm viability by accelerating the identification, validation and adoption of smarter farming practices. This includes promoting practical solutions to increase water use efficiency, prevent runoff, reduce application of nutrients and pesticides, and better manage soils.

Since its launch, the project has expanded to approximately 78 properties covering more than 40,000 hectares. Farmer-led innovation has improved the quality of more than 150 billion litres of run-off water flowing into the reef – the equivalent of 60,000 Olympic swimming pools – by reducing the amount of nitrogen, phosphorous, pesticides and other pollutants. Participating growers have also benefitted from improved farm gate returns.

The National Landcare Program is funding extension activities under Project Catalyst through the Game Changer program. Game Changer is partnering sugar cane growers with agronomists and economists to trial smarter management practices in reef catchment areas in an effort to make cane farming more economically and environmentally sustainable. Growers participating in the Game Changer program are making significant improvements to their farming operations.

Indigenous Protected Areas and Working on Country Supplementation

In 2002, Aboriginal and Torres Strait Islander land accounted for nearly 15 per cent of Australia's land mass.¹¹⁹ This includes land with high levels of biodiversity and large portions of some of Australia's bioregions that were not previously well represented in Australia's system of protected areas.¹²⁰ Australia has international obligations to protect samples of

our ecosystems, and to preserve traditional ecological knowledge. The Australian Government also has national commitments to Closing the Gap in areas such as health, education and employment.

The Indigenous Protected Areas program provides \$64.7 million over 2014–15 to 2017–18 to traditional owners to voluntarily dedicate their land to balance conservation, protection and sustainable management of Australia's biodiversity, heritage and environment with other sustainable uses. This funding supports Australia to meet its international commitments to conserve at least 17 per cent of our terrestrial areas within protected areas by 2020, with Indigenous Protected Areas providing more than 40 per cent of Australia's protected areas.

The Working on Country Supplementation (\$34.7 million over 2014–15 to 2017–18) supplements another appropriation to support the Indigenous Ranger program. This program supports Indigenous people to combine traditional knowledge with conservation training to protect and manage their land, sea and culture. The majority of rangers work on Indigenous Protected Areas.

These programs combine traditional knowledge with contemporary natural resource management. They assist Indigenous Australians to stay on or re-engage with their country and the environment while building community capacity and increasing economic participation and employment. This helps to close the gap in Indigenous disadvantage as well as providing enhanced conservation outcomes.

Outcomes

As at 1 December 2016, the Indigenous Protected Areas program has dedicated 74 Indigenous Protected Areas, covering a total area of over 67 million hectares. There are 16 further Indigenous Protected Areas currently in consultation.

Indigenous Protected Areas comprise over 44 per cent of the National Reserve System, making them a significant contribution to Australia's target under the Convention on Biological Diversity to protect 17 per cent of terrestrial land by 2020. If the remaining Indigenous Protected Areas are dedicated, it will bring the contribution of these areas to more than half of Australia's protected area estate.

As at 1 December 2016, 109 ranger groups were funded under the Indigenous Ranger program, with 777 full time equivalent contracted positions.

The Indigenous Protected Areas and the Indigenous Ranger programs contribute to the success of a number of our environmental priorities by being key delivery partners of the Threatened Species Strategy, the Reef 2050 Plan and the delivery of World Heritage Convention strategies.

Case Study D

The Kanyirninpa Jukurrpa project in central Western Australia is working to produce environmental, social and economic outcomes through involvement in the Indigenous Protected Areas and Indigenous Rangers programs. The project aims to stop Indigenous people going to jail for minor offences by providing alternatives such as employment as rangers on their Indigenous Protected Area.

Approximately 70 people had their sentences suspended or reduced in the period 2010-2014 because of their involvement with Kanyirninpa Jukurrpa's on-country programs.

A 2014 report into the Social Return on Investment from Kanyirninpa Jukurrpa's land management programs identified a \$3.7 million saving to the justice systems in the five years to 2014. At current costs, this equates to savings of approximately \$4.6 million in total.

Former Magistrate for the Pilbara Region, Deen Potter, noted, "The programs run by Kanyirninpa Jukurrpa Rangers in the various Martu communities have the potential to break cycles of bad health, regular interaction with the justice system leading to incarceration, dysfunction and trauma. These programs can aid in reconciliation and healing within the communities as participants come together to learn about and look after country and develop a deeper understanding about themselves and the possibilities for their future".¹²¹

Kanyirninpa Jukurrpa has now extended its programs to include a broad-based 'leadership' program, enhancing the ranger program on their Indigenous Protected Area. This aims to further reduce levels of crime and incarceration through participation in adult education and through the development of formal diversionary and recidivism programs.

20 Million Trees

The 20 Million Trees Program provides funding of \$70 million over six years from 2014-15, to plant 20 million trees by 2020. It was a 2013 election commitment. The aim of the program is to improve the extent, connectivity and condition of native vegetation, while also contributing to a reduction in Australia's greenhouse gas emissions. The program also has a community engagement objective of working cooperatively with the community.

The program is delivered through competitive and ad-hoc grants delivered by individuals and organisations, and larger-scale plantings delivered by service providers under a procurement model.

As at mid December 2016, two rounds of competitive grants have been run for organisations, groups and individuals, with funding between \$20,000 and \$100,000 available for 18 or 36 month projects to establish native vegetation. 117 projects worth nearly \$9.7 million have been contracted.

Two tranches have been run under the procurement approach, with the three service providers contracted to deliver 32 projects valued at \$24.3 million.

Outcomes

As at November 2016, the program has committed \$42.8 million across 164 projects to plant more than 13.4 million trees. To date, 1.2 million trees comprising over 2,000 different species have been planted across each state and territory of Australia.

The program complements and aligns with other initiatives, such as the work of the Office of the Threatened Species Commissioner. For example, as at early December 2016, 26 projects are delivering actions to protect priority species identified in the Threatened Species Strategy.

Case Study E

The Northern Tablelands - Trees on farms in Cool Country project is engaging graziers to plant native trees and shrubs on their farms in the extensively cleared landscape in the Walcha and Armidale district in northern New South Wales. Over 30,000 native trees and shrubs will be established using tubestock and direct seeding from local provenance seed sourced from the Northern Tablelands Local Land Services native seed bank.

These activities will provide conservation and agricultural production outcomes in this significant wool and beef-growing region. The revegetation works will provide vital connection corridors and stepping-stones of habitat for threatened woodland birds and other wildlife, as well as shelter and shade for livestock.

See also Case Study 10 in the body of this report.

25th Anniversary Landcare Grants

The 25th Anniversary Landcare Grants 2014–15 was a one-off, nationally competitive grants round, to achieve environmental and sustainable agriculture outcomes by targeting local community groups (including Landcare and Indigenous groups) and individual land managers. A total of \$5 million was committed under the round, with \$2.5 million allocated to an environment stream and \$2.5 million to an agriculture stream.

Funding under this round seeks to support community participation in natural resource management. Funding recipients undertook projects that conserve and protect their local environment and/or support improved agricultural practices and management of the natural resource base, contributing to outcomes in the national interest.

Grants from \$5,000 to \$20,000 (GST exclusive) were available with all projects to be completed by 30 June 2016. 288 projects were contracted to deliver on-ground and capacity building activities that improve the environment and the ability of the community and landholders to effectively manage it.

Outcomes

As of October 2016, final reporting for 77 projects had been received.

A sample of the combined achievements from these includes:

- Over 200 community groups and nearly 2,000 people were involved in project delivery
- 1,600 farming or fishing entities participated in delivery of project activities, with nearly 40 farming entities that implemented practice changes
- Over 20 Indigenous people were employed
- 1.2 million hectares were treated for a variety of pest animals, including removal of nearly 10,000 feral pigs
- Over 22,000 hectares were treated for weeds
- Nearly 120 hectares of revegetation undertaken, with over 75,000 plants planted and over 4,800 plants propagated
- Over 300 kilometres of stream or coastline and more than 50 hectares of land were treated for erosion
- Over 290 community events were run.

Case Study F

The Ngururra - Biodiversity Survey project assisted the Ngururra traditional owners to undertake a biodiversity survey on their country in the Desert Rangelands natural resource management region of Western Australia, with support from staff from Central Desert Native Title Services, three Rangers from Kiwirrkurra and a scientist.

This remote country, situated in the Great Sandy Desert in the East Kimberley's, was poorly surveyed and the project sought to increase knowledge of the biodiversity values, including the presence, location and habitat of key threatened species; the health of important habitats and water resources; and the threats to these species and habitats (such as feral animals, weeds and wildfire). The surveying used both scientific and Indigenous ecological knowledge and methods. The survey relied mainly on the sign of animals (tracks, scats, diggings and burrows) with a particular focus on finding out if there were any threatened species, such as the Bilby (ngalku) on Ngururra country.

The project increased engagement of Aboriginal traditional owners in natural resource management through two-way learning. The Indigenous people shared their knowledge of key habitats, historical threatened species sightings, burning practices and other traditional ecological knowledge; used their traditional tracking skills to identify species of interest; and gained skills in scientific survey methods including track-plot monitoring and camera trapping.

The project also confirmed that highly significant healthy Bilby (*macrotis lagotis*) populations occur along the entire length of Ngurrpa country, linking up with Bilby populations on Kiwirrkurra IPA to the south, a length of over 200kms. While traditional owners knew of their presence, this had not been scientifically confirmed before.

The project has contributed to securing philanthropic funding for further on-country work and planning in 2016. Findings will assist in the planning and prioritisation of future land management activities to protect the bilbies and their habitat.

- 48 hectares of erosion control along nearly 250 kilometres of stream bank
- Fire threat reduction over almost 45,000 hectares
- Over 850 tonnes and 150m3 of debris removal
- 5,800 hectares of initial pest treatment area to manage rabbits, foxes, cats and donkeys
- 10,500 hectares of weed control reducing the threats posed by a range of damaging weed species
- 9 projects involving Indigenous decision-making bodies
- 129 on-country visits with Indigenous peoples
- 8 projects documenting Indigenous knowledge
- 1 Indigenous enterprise and 7 contracts established through projects.

See also case study 9 in the body of this report.

Target Area Grants

Target Area Grants are a continuing commitment under the National Stream of the National Landcare Program, which provided more than \$34 million over 5 years starting in 2013–14 for environmental projects in six priority geographical regions: the Central Australian Connection, Cape York, the Kimberley, Tasmania, South-west Western Australia, and urban waterways and coastal environments.

These projects contribute to maintaining ecosystem services, including ecological and cultural values, now and into the future; protect the conservation estate; and enhance capacity of Indigenous communities to conserve and protect natural resources.

Outcomes

Under the Target Area Grants program the 29 projects have delivered a range of threat reduction for prioritised assets, this includes:

- 3,300 hectares of revegetation, with over 280,000 plants planted and 40 kilograms of seed sown

Case Study G

The Kimberley Nature Project successfully coordinated the protection and management of threatened Kimberley ecosystems in Western Australia, species and cultural sites through collaborating with Aboriginal Rangers, other Traditional Owners and community groups to manage fire, weeds, and feral animals and improve access management.

A project member said that “the project successfully extended community education, capacity building and indigenous knowledge transfer to support enhanced management of significant species, ecosystems and cultural sites. The good relationships with Aboriginal partners has been extended whilst allowing us to secure future funding to continue our collaborative cultural natural resource management projects into the future.”

Through numerous training opportunities and on-ground experience, the project has helped build natural resource management capacity in seven different ranger groups and Aboriginal communities, facilitating back-to country trips, and applied western science and traditional ecological knowledge together for better conservation outcomes.

The respectful documentation of language and knowledge in books has helped conserve and support key cultural information that is critically endangered. Through the incorporation of this language and knowledge in project materials and activities, the project has helped keep this information alive.

Through multiple joint trips with scientists, youth, rangers and elders, the project has helped transfer and share this knowledge between generations and cultural groups so that this information can be passed on.

Other Grants

There are a range of other grants under the National Landcare Program, including the Local Program and Emerging Priorities funding, worth \$38.8 million over 2014–15 to 2018–19. These grants help to achieve targets under the Threatened Species Strategy, and provide support for coastal rivers, Dandenong Ranges Wildlife Recovery, Weed Management and Fuel Reduction, Kimberly Cane Toad Clean Up, Whale and Dolphin Protection Plan Land and Sea Country Partnerships, and Landcare Network funding.

These grants have been typically provided to organisations to deal with local or regional issues, to address key issues of concern for specific communities. Many of these grants have supported election commitments.

Outcomes

Under the National Landcare Program, 67 ad-hoc grants funded through Local Programs are showing delivery against national or regional plans, including 51 projects delivering on key national documents such as threatened species management plans or strategies, the Threatened Species Strategies and the Australian Biodiversity Conservation Strategy. 30 projects are delivering actions for threatened species protection, such as captive breeding programs, targeted monitoring and pest fencing.

Case Study H

On the Stone River near Ingham in Queensland, Terrain Natural Resource Management has been awarded a \$30,000 grant through the Threatened Species Commissioner model. The grant is 'connecting the dots' by improving habitat connectivity for the mahogany glider, and encouraging an integrated, strategic approach to its conservation. This was particularly important after Cyclone Yasi destroyed some mahogany glider habitat.

Coordinated by Terrain Natural Resource Management, the project is partnering with the Mahogany Glider Recovery Team, HQ Plantations and the Wildlife Preservation Society of Queensland.

This project will establish a connectivity corridor to link separate populations of the endangered mahogany glider, allowing isolated populations access to more habitat. As gliders are generally reluctant to cross open ground and rely on trees for both habitat and food, the establishment of corridors is important for the species.

This funding will allow the revegetation of three hectares within a priority connectivity corridor for the mahogany glider to address habitat degradation, and improve the vegetation integrity in a further 10 hectares. Fencing will also be installed along five kilometres of the priority corridors to exclude large herbivores.

This will not only reconnect populations of the mahogany glider but will also benefit the endangered southern cassowary, reduce nutrient flows from the Stone River and protect the Great Barrier Reef, and reduce the damage to the site caused by floods.

Environmental Stewardship Program

The Environmental Stewardship Program is a continuing commitment under the National Landcare Program, with 288 grants totalling \$141 million over 19 years from 2008–09 to 2026–27. The Environmental Stewardship Program was designed to support private land conservation, and long-term environmental protection. Its objective is “to maintain and improve the condition and extent of targeted high public value environmental assets on private land”. It was also designed to secure enduring changes in land manager attitudes towards environmental protection and sustainable land management practices.

The program designed consistent, simple, cost-effective and efficient interventions that could be undertaken by private land managers and

farmers over the course of fifteen-years to maintain and improve the condition of target threatened ecological communities.

Outcomes

Through seven program rounds, the program contracted 288 private land managers for up to 15 years. This included managing over 52,000 hectares of five threatened ecological communities across New South Wales, Queensland and South Australia. As shown in Table 3 below, the average management cost per hectare per year was \$231.

An ecological monitoring program being managed by the Australian National University has found that the program has been successful in both maintaining and improving the condition of project sites.

Table 3—Environmental Stewardship Program management costs

EPBC Act Listed threatened ecological community	Status	Number of contracts	Hectares	Management cost / hectare / year
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland (NSW & QLD)	Critically endangered	240	42,387	\$205
Weeping Myall Woodlands (NSW)	Endangered	4	733	\$180
Natural grasslands on basalt and fine-textured alluvial plains of northern NSW and southern QLD	Critically endangered	3	1,186	\$187
Peppermint Box (<i>Eucalyptus adorata</i>) Grassy Woodland of SA	Critically endangered	17	1,180	\$301
Iron-grass Natural Temperate Grassland of SA	Critically endangered	24	6,637	\$280
Environmental Stewardship Program Total		288	52,123	\$231

Case Study I

With funding from the Environmental Stewardship Program, landowners near Yass in New South Wales have been able to implement land management practices that have promoted regeneration of native vegetation, as well as increasing the number of birds and native insects on their property.

Active stewardship of this property is helping to control exotic plants such as serrated tussock, Paterson's curse, scotch thistle, and skeleton weed.

In its first year, the project removed stock from the project site in order to encourage regeneration of native grasses, flowers as well as improve soil health. Some of the flowers had not previously been observed on site.

Strategic grazing in later years and the active control of biomass has helped these native plants to expand their range, resulting in good ground cover and eucalypt growth across the site with a predominance of native grasses. Fencing to protect eucalypt regeneration areas from the impacts of grazing and a couple of good seasons in succession has encouraged the recovery of mature eucalypts.

Their Stewardship site provides a corridor for the vulnerable Superb Parrot and several other endangered bird species.

Outcomes

As projects commenced in July 2016, outcomes from this program are not yet available.

Case Study J

The 'Farmers and Advisors Using Soil Moisture Information for Better Management Decisions' project is one of 103 projects funded under the Sustainable Agriculture Small Grants Round is a part of the National Landcare Program.

The project will disseminate real time soil information to land managers using an existing network of 60 soil monitors in South West Victoria, Gippsland and North East Tasmania regions.

The project will also develop a user friendly interface for the web, phone and tablets with push notification. This will assist farmers in making more precise and timely on-farm decisions about soil condition, including moisture availability, nitrogen application and avoiding pugging and compaction.

Through these activities the project will increase the capacity and knowledge of farmers and fishers to productively and sustainably manage Australia's natural resources. The project will support the adoption of management practices that will increase production or improve product quality while maintaining or enhancing the natural resource base.

Sustainable Agriculture Small Grants

The Sustainable Agriculture Small Grants Program support local farming and community groups, and individual farmers and fisher to conduct on-ground projects. Grants totalled \$3.78 million over 18 months from April 2016 to December 2017. There were 103 projects funded, each receiving grants from \$5,500 to \$55,000.

The program aimed to increase the capacity and knowledge of farmers and fishers to productively and sustainably manage Australia's natural resources; and promote the adoption of appropriate management practices that increase production or improve product quality while maintaining or enhancing the natural resource base.

Sustainable Agriculture Innovation Grants

The Innovation Grants funded 31 projects nationally that supported industry, farming and fisher groups to develop and adopt innovative practices and technologies. Grants totalled \$21.3 million over two years from March 2014 to June 2016. Funding amounts, ranged from \$280 000 to \$1.65 million, were granted to each project to ensure substantial outcomes were achieved.

Innovative practices and technologies adopted by farmers and other key stakeholders have improved farm-gate profits, productivity, natural resource management, information collection and distribution, and enhanced supply chains.

Grants were spread across grazing, cropping, forestry, horticulture, fisheries and aquaculture enterprises.

Outcomes

The Innovation Grants aimed to trial and adopt innovative practices and technologies that improved farm-gate profits, productivity, natural resource management, information collection and distribution, and enhanced supply chains.

Key outcomes achieved from the Innovation Grants included:

- Enhanced supply chain assurance and an increase in the ability of producers to charge a premium for sustainably produced food and fibre
- Improved ability to detect and co-ordinate weed and pest incursions, and mitigate the impacts of weeds and pest on agricultural production
- Increased resilience to the impacts of climate change, by improving ground cover, reducing soil erosion and enhancing carbon content of soils
- Diversification of farm income sources
- Reducing farm input costs through more efficient use of fuel, pesticides, fertilisers, water and farm labour
- Increasing animal performance by improving herd management and reducing annual livestock food gaps
- Reduced bycatch in the fishing industry
- Enhanced on-farm biodiversity and improved off-site water quality.

Case Study K

The Innovation Grants program funded the “Future Pathways for Sustainability” project for \$525,910.

The objective of the funding was to increase the uptake of innovative production, resource management, information collection, extension and supply chain management practices and processes that will improve the productivity and sustainability of resource-based industries.

The “Future Pathways for Sustainability” project developed and promoted the uptake of innovative horticultural practices and technologies in South Australia that improved farm-gate profits, productivity and sustainability for capsicum producers. The department worked with the applicant of this project to improve its design

Case Study K (Cont)

so that it was truly innovative, cost effective and provided best return on investment.

DAWR had a face-to-face site visit of the project where the true value of the project was realised. Progress reports had not reflected some of the good outcomes achieved. The grantee indicated that the reporting template provided was limiting and did not allow some elements of the project to be reported.

The key project outcomes were the use of technology of farmers to more efficiently and effectively apply water and nutrients to plants, and management their pests. This led to significant increases to profits, resulting in strong support by producers and industry.

The grantee was able to demonstrate the value of the innovation to other investors, with industry and state government committing to invest into the innovation initiated by the National Landcare Program Innovation Grants.

See also Case Study 8 in the body of this report.

Pest and Disease Preparedness and Response Program

The Pest and Disease Preparedness and Response Program provides funding of \$86.0 million over 2014–15 to 2017–18. Under this program, nationally cost-shared eradication responses to pest and disease incursions are managed under three formal agreements:

- the Emergency Animal Disease Response Agreement (EADRA)
- the Emergency Plant Pest Response Deed (EPPRD)
- the National Environmental Biosecurity Response Agreement (NEBRA).

These agreements are only used for eradication responses to pest and disease incursions that would have a nationally significant impact on industry, the environment or the community.

Outcomes

There are 16 nationally cost-shared eradication responses being undertaken under this program, which include Khapra beetle, Exotic fruit fly in the Torres Strait, Giant pine scale, Banana freckle, Chestnut blight, Varroa mite, Red imported fire ant, Browsing ant, Red imported fire ant, Red imported fire ant, Macao paper wasp, Red witchweed, Browsing ant, Electric ant, Red imported fire ant and Four tropical weeds.

To December 2016, seven diseases have been eradicated under the Emergency Animal Disease Response Agreement:

- 2002 incursion of Newcastle Disease in Meredith, Victoria and Horsley Park, New South Wales, affecting chickens
- 2007 incursion of Equine Influenza in New South Wales and Queensland, affecting horses
- 2009 incursion of Influenza H1N1 in New South Wales, affecting pigs
- 2012 incursion of Low pathogenic avian influenza H5N3 in Victoria, affecting ducks
- 2012 incursion of Highly pathogenic avian influenza H7N7 in Maitland, Victoria, affecting chickens
- 2013 incursion of Highly Pathogenic avian influenza H7N2 in Young, New South Wales, affecting chickens.

Two plant pests have been successfully eradicated under the Emergency Plan Pest Response Deed:

- 2007 incursion of Khapra beetle in Western Australia
- 2011 incursion of Cocoa pod borer in Mossman, Queensland.

Two incursions have been successfully eradicated under the National Environmental Biosecurity Response Agreement:

- 2013 incursion of Red Imported Fire Ant in Yarwun, Queensland.
- 2014 incursion of Red Imported Fire Ant at Port Botany, New South Wales.

Case Study L

Red imported fire ant is one of the world's worst invasive species due to their devastating economic, environmental and social impacts. The ant's stings can cause anaphylactic shock, which may result in death. The ants are aggressive and destructive; threatening both native wildlife and agricultural animals, and impacts to outdoor and recreational areas would significantly alter the lives of Australians.

In November 2014, the Australian Government Department of Agriculture and Water Resources found suspected red imported fire ants at Port Botany, Sydney, during routine biosecurity surveillance. The Australian and New South Wales governments responded immediately, deploying entomologists and biosecurity officers to determine the extent of the infestation. The NSW Government established a control centre, with the Australian and Queensland governments contributing emergency response personnel and eradication experts.

In December 2014, all jurisdictions unanimously agreed that the incursion met the criteria of the National Environmental Biosecurity Response Agreement and that the response should be nationally cost-shared.

The incursion was contained and direct nest injection, combined with on-ground baiting, was used to destroy the ants. A control area was established, giving greater powers to trained inspectors for targeted surveillance. Movement controls were also put in place to limit the movement of high-risk materials out of the control area.

To ensure the incursion was contained, a community engagement plan targeted local councils, industries, businesses and residents in the Port Botany area. A hotline received a large number of calls and ants suspected of being red imported fire ants were regularly submitted for identification.

The Port Botany eradication response shows Australia's biosecurity system and the response agreements are working as intended. The response quickly moved from detection to eradication, involving multiple jurisdictions, businesses and the community. There is a high level of confidence the ants have been eradicated and the area is expected to be declared free from ants this year.



*National Landcare Program volunteers at lake Claremont
Photo: © Tony McDonough*



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