
Submission to the Senate's Environment and Communications References Committee inquiry into Australia's faunal extinction crisis

Our submission covers the following critical issues:

- We acknowledge the ongoing crisis in biodiversity in Australia and the increasing threats to maintaining Australia's unique environment including climate change;
- There is substantial positive work happening around the country through regional NRM bodies and their partners in relation to the diverse threats to species and biodiversity;
- We illustrate how this work needs to happen with an integrated, strategic, adaptive and landscape-scale approach - conservation in conservation areas alone is not sufficient – we need to work with farmers and other land managers to improve conservation practices across the landscape;
- Through our national network we can do more, but this requires greater investment from all levels of government;
- We suggest some improvements to the nation-wide system for biodiversity protection.

We will never turn around this crisis without sufficient commitment of resources. When compared to other budget items national investment in the environment reveals a low, and reducing, priority. If investment and efforts remain below an effective threshold we will never manage as a nation to protect our remarkable inheritance – despite best efforts. We may slow the decline but not turn it around.

NRM Regions Australia sought examples from our members of the work they do to protect Australia's threatened species. We received numerous examples and used some of these to illustrate our submission. Yet there are many excellent projects being implemented across Australia. We have prepared the attached snapshot of current projects for the Committee's information (Attachment A).

Integrated Natural Resource Management

Australia is a world leader in integrated natural resource management. We can trace our efforts back to the 1950s when State and Territory governments invested in separate programs to address soil conservation (erosion, salinity, soil acidity), pest plant and animal management, decline in water quality, loss of native vegetation and habitat, and loss of native fauna and flora. Since then our knowledge has grown and new techniques have been developed that are all based on protecting critical ecosystem services, so that future generations can enjoy the good quality air, clean water, productive soils, and pollination services etc. that underpin the quality of life we enjoy.

By the mid to late 1980s there was a growing awareness that sustainable natural resource management required:

- **An integrated approach** – which recognised that natural resource management issues are linked, for example protecting Australia's threatened flora and fauna requires us to address land and

water management practices and deal with other threatening processes such as loss of vegetation, weed and feral animal impacts;

- **Coordinated approaches across all levels of government** – Commonwealth, State and Territory governments all have legislation covering the protection of Australia’s flora and fauna and all invest accordingly. A coordinated or at the least aligned effort is essential to maximise outcomes;
- **Collective action** – is required by individuals, community groups such as landcare and Non-Government Organisations to address landscape issues such as threats to Australia’s flora and fauna;
- **Planning at a landscape scale** – this allows us to address issues such as habitat and wildlife corridors at an appropriate scale and to engage with all land managers (i.e. farmers, indigenous communities as well as public land managers)
- **Partnerships and engagement with all Australia’s private land managers** – our farmers and indigenous communities are major private land managers and specific efforts are required to engage with a draw on the knowledge of these sectors.
- **A systems approach** – NRM is best managed through social-ecological systems which recognise the intrinsic relationship between people and the environment and that these systems are interconnected and respond to a range of feedback loops.

About NRM Regions Australia

NRM Regions Australia is the national representative group of Australia’s 55 regional NRM bodies.

Our member organisations work to maintain healthy and productive country that support viable communities and industries. We regard Natural Resource Management (NRM) as the responsible use of our land, water, soil, plants and animals to provide a good quality of life for current and future generations. Our members work from the paddock to the national scale to address issues that require a landscape perspective. Regions also work collaboratively together on wider landscape projects such as the Tri-State Murray alliance <http://www.necma.vic.gov.au/Projects/Current-projects/tristate-murray>, or the Rangelands alliance <http://www.rangelandnrmalliance.org.au/> This enables us to work across borders and ecologically connected areas at any scale, broker partnerships at any scale, and to share knowledge and skills.

Our approach also enables community and landcare activity to better address long term strategic issues of national importance.

55 regional NRM organisations cover all of Australia. Many have been in existence since the mid-1990s and were established either by State Governments or the Federal Government as part of its Natural Heritage Trust program. The organisations are governed by a Board. Although the governance arrangements differ, all regional NRM organisations share the following features.

Regional strategic NRM Planning

- They are responsible for developing regional NRM plans. These plans have different names in different jurisdictions, but they essentially use an asset-based approach to identify landscape scale assets, determine the threats to those assets and develop programs to protect those assets. Threatened flora and fauna species are regarded as regional assets and our regional NRM plans work towards protection and enhancement of those assets. With the support of the Commonwealth government, all regional NRM plans were updated between 2014 and 2016 to take account of climate change impacts.
- Working with regional NRM organisations and through regional NRM strategies enables strategic investment. Regional NRM strategies prioritise actions and investment working with local communities. NRM regions and strategies link or align priorities vertically (national, State to local level) and horizontally (across tenures, land-types and land-uses). This targets investment and delivers outcomes from a paddock to regional to national scale; enabling the best return on investment and an impact that adds up over time and across the country. For example, www.naturalresources.sa.gov.au/alinytjara-wilurara/about-us/our-regions-plan



Partnerships and engagement

- Regional NRM organisations are strongly focussed on community engagement. Processes are in place to ensure community input into regional plans, programs and implementation.
- NRM regions work and partner with a remarkable range of farmers and land managers, communities, landcarers, Indigenous organisations, industries, NGOs, seafood producers, environment groups, farming systems groups, tourism operators, rural RDCs etc. As we are based in the community, at the regional scale, we have the relationships built up over decades to do this (as illustrated in following case studies).

Leveraging investment

- An important function of regions is to encourage investment from a variety of investors and ensuring better alignment of investment so that the benefits can be fully realised. An example is ensuring that \$ spent by state and local governments on works enhances, rather than detracts from efforts at biodiversity conservation. A good example of this is roadside maintenance where slight adjustment to works programs can enhance biodiversity values of these often-important habitat linkages.

Evidence-based

- NRM regions undertake planning and activities based upon the best available evidence and diversity of knowledge sources. Regions have become more sophisticated in this respect including in sharing our knowledge and skills across the country between regions, and with partners. Continually improving our scientific and practical understanding in efforts to reverse faunal decline is crucial.

Response to the Inquiry's Terms of Reference

We acknowledge the on-going pressure on the population and conservation status of Australia's nearly 500 threatened fauna species. And we recognise that Australia is a party to several international legal instruments relating to conservation of biodiversity and the protection of fauna and flora. As such, we have an obligation to implement its commitments under these conventions, treaties and agreements. Some international instruments specifically relate to biodiversity, flora and fauna and the environment (such as the UN Convention on Biological Diversity). Others clearly support healthy ecosystems imperatives, such as the United Nations Framework Convention on Climate Change and its associated Kyoto Protocol and Paris Agreement.

We recognise that biodiversity decline in Australia needs more attention, particularly when faced with the challenges of climate change, a growing population and greater global competition for diminishing resources. Australia has the capacity to do a better job in managing its environment.

The nexus between flora and fauna is critical in reviewing Australia's faunal extinction crisis. The absence of viable habitat in turn impacts breeding patterns and fauna species viability. In this way, Australia's commitments under the Convention on Wetlands of International Importance (Ramsar Convention), the World Heritage Convention and other environmental instruments are also relevant to Australia's faunal survival.

Many of Australia's international commitments relating to flora, fauna and biodiversity are implemented through the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Feedback and recommendations are made on some aspects of the EPBC Act in this submission, however it is noted that the statutory review of the EPBC Act is due to commence by October 2019. This more specific review will provide an opportunity for a broad range of more detailed comments on the operation of the EPBC Act.

All our regional NRM plans consider vulnerable, rare or threatened species, and prioritise and implement integrated landscape programs to protect Australia's biodiversity.

Our submission will focus on several of the terms of reference relating to the role regional NRM organisations play in protecting Australia's unique fauna and flora. Our key message is that without the national 'infrastructure' provided by NRM regions many of the landscape scale threatened species projects cannot be delivered.

Our unique contribution is the integrated landscape approach. Focussing recovery plans on a specific species in a specific location without acknowledging the wider landscape pressures and the importance

Extract from the Threatened Species Commissioner Report to the Minister for the Environment December 2015

A project to eradicate feral cats from Kangaroo Island provides a good example of this partnership approach. Featured at the Threatened Species Summit earlier in the year, this project is community driven and coordinated by the Kangaroo Island NRM board, the local council and local residents. Kangaroo Island NRM is continuing to work towards implementing a feral-cat eradication programme and is receiving support from the Invasive Animals Cooperative Research Centre for monitoring and reporting efforts through the use of the FeralCatScan app.

In September this year, I undertook field work in far north Queensland and saw firsthand a number of Green Army projects which were leveraged with other funding initiatives and community input, with the help of Terrain NRM, local farmers and Indigenous groups. The projects were benefiting species such as the cassowary, mahogany glider and Lumholtz tree kangaroo, among others.

of engaging with private landholders, indigenous communities and other stakeholders will lead to sub optimal outcomes for Australia’s biodiversity.

NRM regional organisations were recognised by Australia’s immediate past Threatened Species Commissioner. In his 2015 report to the Minister he noted our role in “... practical action to protect threatened species in all parts of Australia. Partnerships through NRM organisations are often key to ensuring local communities are engaged and investments optimise action in tackling threats to Australia’s plants and animals”.

e. the adequacy and effectiveness of protections for critical habitat for threatened fauna under the Environment Protection and Biodiversity Conservation Act 1999;

The EPBC Act requires project proponents proposing new developments to provide information on how their “actions” will impact on listed species and plans to remediate that impact.

We draw the Committee’s attention to the Carbon Farming Initiative Act that requires project proponents to consider regional NRM plans in developing their projects. A similar approach would be beneficial for the protection of critical habitats from development impacts – formally requiring project proponents to consider regional NRM plans.

We would like to also draw attention to the EPBC Act’s strategic assessments provisions. The 2008 Hawke statutory review of the EPBC Act, recognised that strategic assessments can be a useful and cost-effective approach to landscape-scale assessments and addressing cumulative impact risks. Further, the process can deliver a broad range of benefits at a landscape-scale.

Essentially if the Minister is satisfied that a strategic plan or program will deliver acceptable environmental outcomes, then developments in accordance with the plan or program do not require further Australian Government environmental assessment. Examples of the use of these provisions include:

- BHP Billiton Iron Ore Pty Ltd - strategic assessment of an area in the Pilbara region of Western Australia and assessed the cumulative impacts of their future iron ore mines on matters protected under the EPBC Act.
- SA Government - strategic assessment of fire management policies and procedures for lands under the care and control of the South Australian Minister. The process approved actions associated with bushfire management on public lands in South Australia as described in the endorsed Policy.
- Gandangara Local Aboriginal Land Council (GLALC) - strategic assessment of the proposed development at Heathcote Ridge, NSW. The Program Report for the Strategic Assessment of the Heathcote Ridge Development, West Menai was approved and allows for development and other related activities identified in the program.
- ACT Minister for Planning - strategic assessment of a structure plan which provides planning, development guidelines and principles for urban development and associated infrastructure at Molonglo and North Weston, ACT.

It is recommended that greater emphasis be placed on the potential benefits of strategic assessments under the existing EPBC Act framework and that NRM plans be incorporated into consideration of these assessments or are resourced to perform the role when appropriate building upon regional NRM strategies

f. the adequacy of the management and extent of the National Reserve System, stewardship arrangements, covenants and connectivity through wildlife corridors in conserving threatened fauna;

We would like to present to the Committee some examples of projects being implemented by regional NRM organisations that relate to this reference.

Wildlife Corridors

Wildlife Corridors offer enormous potential to improve the connectivity of habitats across our landscapes, particularly as Australia's climate changes. To be successful they need to be appropriately planned and managed.

The case study below illustrates the efforts of Grow West, an initiative of the Port Phillip and Westernport CMA in Victoria. The key to its success is engaging farmers in the planning and recognising the need for on-going management of the corridor. The project's proximity to Melbourne allows access to a large volunteer pool and this is utilised on annual community planting where up to 200 people participate.

The second case study illustrates the challenges in the large and remote Northern Agricultural Catchments Council region in Western Australia. That project commenced in 2015 with a Biolink Feasibility study which has formed the basis of an investment prospectus used by NACC to secure support for biolinks.

"Wildlife corridors are connections across the landscape that link up areas of habitat. They support natural processes that occur in a healthy environment, including the movement of species to find resources, such as food and water. Corridors can contribute to the resilience of the landscape in a changing climate and help to reduce future greenhouse gas emissions by storing carbon in native vegetation. They can also support multiple land uses such as conservation, farming and forestry".
(Department of Environment and Energy web-site accessed 1 August 2018)

Case Study: Grow West – Port Phillip and Westernport CMA, Victoria

The challenge

Grow West's vision is to rejuvenate 10,000 hectares of the upper Werribee Catchment, west of Melbourne by connecting large areas of public reserves; Brisbane Ranges National Park, Werribee Gorge State Park and up through to Lerderderg State Park, through a mosaic of restoration works on private property. Grow West is improving the health and production of farmland, creating habitat links between the parks, stopping erosion and reducing the amount of sediment being washed into waterways and reservoirs.

Engaging farmers and coordinating stakeholders

While the targets of Grow West extend across a large landscape, its success is achieved by working with landholders to design and deliver revegetation projects that suit the requirements of individual properties. Grow West secures funds and employs skilled personnel to make major works feasible, affordable and expertly delivered. Grow West brings together planners and practitioners from a range of organisations and community groups including Moorabool Shire Council, Melbourne Water, Southern

Rural Water, Parks Victoria, Department of the Environment, Land, Water and Planning, Conservation Volunteers Australia and the Moorabool Landcare Network.

The results

Since 2003 Grow West has worked with numerous landholders on revegetation projects ranging from 1 – 100+ hectares. In total, over 2,500 hectares have been revegetated with the aim to enhance biodiversity, reduce the spread of noxious weeds and pest animals, reduce erosion and improve landholder skills and participation.

Casestudy: Biolinks Project - Northern Agricultural Catchments Council, Western Australia

Challenge

NACC takes a holistic view of the entire landscape. By shifting from only managing patches of land to focusing on connectedness, broad landscape and ecosystem needs can be addressed, more effectively supporting ecosystem resilience.

The BioLinks Project presents a concept for a large-scale conservation initiative to connect, restore and maintain the outstanding ecological values of the NAR. It utilises a landscape-scale approach to help inform appropriate levels of reservation, connectivity and off-reserve conservation actions as part of a long-term regional conservation strategy.

Results

During the 2015/16 year, the BioLinks Feasibility Study was completed. This study found that the fragmented nature of the NAR, together with the historical ecological gradients indicates that connectivity across the entire region is not practical or feasible. However, the region does present a significant opportunity to improve connectivity conservation through a targeted landscapes approach. These target landscapes include:

- Yarra Yarra Catchment
- Wheatbelt Woodlands
- Northern Kwongan
- Moresby Range
- Moore River Region
- Hutt River Region
- Abrolhos islands

NACC's BioLinks Project focused on piloting a new, whole-of-landscape approach to corridor design that is underpinned by the following objectives:

- Landscape scale: BioLinks applies a long-term, landscape-scale approach to conservation activities that operates across public and private land at both local and regional levels.
- Locally connected: BioLinks focuses on building local ownership for conservation by facilitating cooperation between land managers, traditional owners, communities, organisations and government.
- Knowledge based: BioLinks ensures that the best available scientific, traditional and local knowledge is shared between partners, to help plan, evaluate and guide conservation work.

This project is supported by the Northern Agricultural Catchments Council through funding from the Government of Western Australia State NRM Program.

Stewardship Arrangements

Stewardship payments are one of the many ways regional NRM organisations work with private landholders to achieve on-ground works. Other approaches include education/extension, support for volunteer groups such as landcare, investment in infrastructure, grants for targeted works etc. They all require resources and have strengths and weaknesses; the challenge is to develop an optimal mix of these approaches to achieve the desired outcome. This happens through our regional NRM planning approach where regional landscape priorities are determined considering Commonwealth and State priorities and community aspirations and knowledge.

The case studies below illustrate some of the different approaches used to engage land managers - Environmental Stewardship in South Australia; community grants in Tasmania and voluntary agreements through Land for Wildlife in Queensland.

Case study: Environmental stewardship in iron grass grasslands and peppermint box woodlands - Natural Resources SA Murray-Darling Basin, South Australia

Challenge

This 15-year conservation stewardship program assisted land managers to undertake management activities that protect, enhance the threatened ecological communities of iron grass natural temperate grasslands and peppermint box grassy woodlands.

Results

Who participated?

Individuals or organisations that owned or managed freehold, leasehold or native title land within the target area (parts of the Adelaide and Mt Lofty Ranges, Northern and Yorke and SA Murray-Darling Basin regions) and who have iron grass natural temperate grassland or peppermint box grassy woodland on their property.

How did the tender process work?

Land managers set their own price for the conservation management services they were prepared to undertake to protect and improve their native vegetation, such as:

- fencing
- grazing pressure reduction
- pest animal and plant control or buffering.

Successful tenders were those that offered the best biodiversity value for money.

Results from the project

67 Funding agreements from 10 to 15 years were offered to land managers whose bids were successful. Over 9600 hectares of critically endangered threatened ecological communities are protected and managed on private land Investment of over \$32 million in protecting threatened vegetation communities in South Australia by the Australian Government

Case Study: The Naturally Inspired Grants program – NRM South, Tasmania

Challenge

NRM South's Naturally Inspired Grants is an ongoing grants program for landowners, community groups and schools to deliver projects which support positive environmental change and sustainable farming initiatives in Southern Tasmania. These include projects that:

- Increase engagement, participation and capacity building in NRM;
- Include on ground works to protect national and state listed species, communities and places; or
- Encourage farmers and fishers to adopt sustainable practices.
- If you need any assistance or advice, please get in touch with us as follows:

Results

NRM South have been offering this funding stream annually since 2009. Now in its tenth round, the Naturally Inspired Grants for community have supported 95 different community groups and schools with more than \$450,000 in funding for a diverse range of activities; including native plant revegetation, rehabilitating sensitive habitat, weed management, controlling invasive species, developing awareness raising tools, running engagement events, and many more. Naturally Inspired Grants for farmers and fishers has supported 34 landowners with \$157,000 since 2014, encouraging the adoption of innovative sustainable land use practices.

Support for the Naturally Inspired Grants is provided through Australian Government funding via the Regional Landcare Facilitator and National Landcare Programme.

Case Study: South East Queensland Land for Wildlife – Healthy Land and Water Queensland

The challenge

In SEQ, over 70% of the region is within private ownerships, reinforcing the need to engage with non-government land managers. The SEQ Land for Wildlife program has been in existence for 15 years, with regional coordination by Healthy Land and Water for the 15 years.

The results

This program engages with over 4,000 landholders within the region (collectively managing over 60,000 hectares) and, through Memorandums of Understanding with 11 local governments, provides support with property management for biodiversity outcomes, particularly targeting nationally threatened species.

g. the use of traditional knowledge and management for threatened species recovery and other outcomes as well as opportunities to expand the use of traditional knowledge and management for conservation;

NRM regions recognise the importance of indigenous communities in managing landscapes.

Indigenous peoples manage 20% of Australia's land and bring essential indigenous ecological knowledge and practice to natural resource management and biodiversity protection. This work requires specific and

targeted funding programs – particularly to bring to and apply Indigenous knowledge and skills across NRM.

The two case-studies below illustrate how NRM regional organisations are partnering with indigenous communities in their regions and drawing on indigenous skills through the Australian Government’s Indigenous Ranger program.

Case Study: Better Fire Management to protect the Carpentarian Grasswren - Southern Gulf NRM, Queensland

The challenge

Listed as nationally endangered during 2016, the Carpentarian Grasswren is an iconic species of the Southern Gulf Region. With logistical support from Southern Gulf NRM, Birdlife Australia volunteers conducted surveys for the bird during early 2016, confirming that the majority of populations exist in long-unburnt spinifex grasslands, to the north and west of Mount Isa.

Fire is the key to the future of the Carpentarian Grasswren. Adapted over millennia to an Indigenous-managed fire regime of frequent, patchy and low-intensity fires, Grasswrens moved from patch to patch to find suitable unburnt habitat. With the decline of Indigenous fire management practices, modern fires tend to be less frequent, but much larger and more intense. This can lead to the removal of suitable Grasswren habitat over very large areas and has been implicated in the decline of the species.

Large fires are a problem for pastoralists too, destroying extensive areas of vital cattle grazing pastures. Grasswrens and pastoralists share an interest in best practice fire management.

Engaging farmers and coordinating stakeholders

In this project, Southern Gulf NRM is building partnerships to implement fire management practices that benefit both Grasswrens and pastoralists. After planning and training activities are completed, our aim is to implement improved fire management practices over 100,000ha of vital Grasswren habitat during 2017. Project partners: Birdlife Australia, Kalkadoon Traditional Owners, Property Managers, Bush Heritage Australia, Department of Environment and Energy, Queensland Department of Environment and Heritage Protection, Queensland Parks and Wildlife and Queensland Fire and Emergency Services.

Case Study: Warru recovery program - Natural Resources Alinytjara Wilurara, South Australia

The challenge

In 2007, the very real concern that warru (black-footed rock-wallaby) could become extinct in South Australia led to the formation of the warru recovery team. The warru recovery team has five main areas of work in order to recover populations of warru:

- managing existing warru populations
- establishing a captive warru population in order to facilitate eventual reintroductions
- research into the ecology of warru
- ongoing governance of the program through the warru recovery team
- monitoring warru populations.

Engaging farmers and coordinating stakeholders

This team is a partnership between: traditional owners of the APY Lands, the communities of Kalka, Pipalyatjara, Pukatja and Kenmore Park on the APY Lands, the Australian Government, the South

Australian Government (Natural Resources Alinytjara Wilurara), APY Land Management, Ecological Horizons Pty Ltd, Conservation Ark (Zoos SA), University of Adelaide.

The warru recovery team has implemented a range of recovery actions that bring together contemporary science, practical on-ground threat management and traditional Anangu ecological knowledge.

Results

The two existing warru populations are managed through a range of measures including:

- ongoing fox and cat baiting regime at the Eastern Musgrave Ranges site
- fire management at known sites in order to protect populations but also enhance their habitat
- ongoing warru survival monitoring through radio-telemetry
- monitoring of population sizes through annual trapping and warru scat abundance monitoring
- ongoing surveys for new populations
- management of buffel grass.

In 2010, a 100-hectare predator-proof warru enclosure – known as the ‘warru pintji’ (warru fence) – was constructed to help the captivity-bred warru safely acclimatise and adapt to local conditions. The site was chosen with full consultation with the warru recovery team and traditional owners through a process that combined local knowledge and scientific criteria, with the pintji itself built entirely by Anangu and warru rangers. Since 2011, more than 15 warru raised in captivity at Monarto Zoo have been released into the warru pintji, and free breeding is now taking place.

Over the past decade, the Warru Recovery Team and employees from the APY Lands have successfully undertaken black-footed rock wallaby trapping surveys. Performed annually until 2014 and every second year thereafter, the 11th trapping survey in the Musgrave and Tomkinson Ranges, located north-east and north-west of the APY Lands in South Australia showed encouraging signs that the warru population was in recovery.

h. the adequacy of existing funding streams for implementing threatened species recovery plans and preventing threatened fauna loss in general;

Commonwealth funding for regional natural resource management has declined since 2008. This clearly limits the amount of works that can be undertaken by regional NRM organisations. It is difficult to be precise about the extent of the decline because of the renaming of different components of the Commonwealth programs.

Equally as important is the need for longer term funding commitments. As illustrated in our case studies many regional threatened species projects have been running for 10 or more years – this time frame reflects the magnitude of the landscape scale works necessary for habitat and the need for longer term funding security if effort is to be maintained. We acknowledge the progress made on this issue with the Commonwealth now able to enter into 5-year funding agreements with regional NRM organisations.

The new funding approach under the National Landcare Programme stage 2 does present additional challenges for our members with NRM regions having to tender for funds. Because of probity requirements our members have limited opportunity to discuss proposals with the Australian Government officials and to adjust those tenders to maximise the Commonwealth government’s

objectives in protecting Australia's threatened species. Likewise, this also restricts regions from establishing projects together across borders and species habitats.

i. the adequacy of existing monitoring practices in relation to the threatened fauna assessment and adaptive management responses;

Adaptive management works best when organisations running programs have direct feedback on the effectiveness of their actions. The case study below illustrates how the Yalgogrin Malleefowl Survey undertaken by Riverina Local Land Services (NSW) is guiding Malleefowl protection.

Case study: Yalgogrin Malleefowl Survey- Riverina Local Land Services NSW, Donato Environmental Services, Landowners and Land Managers

The challenge

The objective of the Malleefowl Survey was to conduct and collate Malleefowl activity, threats, presence and breeding into GIS mapping format.

Donato Environmental Services (DES) conducted electronic surveillance of known Malleefowl mounds in the region. The aim was to gather information on the impacts on the mounds from predators and landuse practices and to use this information for:

- Reducing permanent habitat loss;
- Reducing the threat of grazing pressure on Malleefowl populations;
- Promoting Malleefowl friendly agriculture practices
- Reducing predation

Engaging farmers and coordinating stakeholders

The Lake Cowal Foundation (LCF) has supported and assisted Riverina Local Land Services and DES with field work

The results

12 monitoring cameras set up in various locations over a three-year time period and have provided a very good understanding of the feral animal population as well as capturing information on the Malleefowl to inform further projects particularly future fox baiting programs.

Regional NRM Organisations have been a strong advocate for national environmental accounts that can demonstrate outcomes from the investments of all governments in NRM. We have partnered with the Wentworth Group of Concerned Scientists in developing a Regional Environmental Accounts trial (2012-2015) and more recently we have been engaging with the Australian Government on the development the *Environmental Economic Accounting: A Common National Approach Strategy and Action Plan*.

Regional NRM organisations are uniquely placed to gather information on regional biodiversity health and the effectiveness of programs that address these issues. But this function is not resourced.

The case study below illustrates how we can mobilise the community, using a Citizen Science approach to monitor the effectiveness of our programs.

Case Study: 2017 Regent Honeyeater Captive Release and Community Monitoring - North East Catchment Management Authority Victoria

The Challenge

The 2017 Regent Honeyeater Captive Release and Community Monitoring Project saw around 100 captivity-bred Regent Honeyeaters (*Anthochaera phrygia*) released into Victoria's North East in April 2017. The aim was to improve the viability of Regent Honeyeaters by increasing the Victorian/South East New South Wales population and to help stem the decline of the North East's unique biodiversity.

Regent Honeyeaters are a striking bird species but there are less than 400 remaining in the wild and as little as 50 individual birds in Victoria.

The Regent Honeyeater is listed as 'Threatened' under the *Flora and Fauna Guarantee Act 1988* and is listed as 'Critically Endangered' under the Commonwealth Government's *Environment Protection and Biodiversity Conservation Act 1999*.

Engaging farmers and coordinating stakeholders

The Department of Environment, Land, Water and Planning (DELWP) and Birdlife Australia led the community-based monitoring program. Monitoring of previous releases (2008, 2010, 2013 and 2015) have confirmed a relatively high post-release survival, raised awareness and provided a unique opportunity for volunteers to actively participate in a threatened species recovery program.

This was a highly collaborative project with many project partners and great interest from the community, such as the Friends of Chiltern Mount Pilot who assist in the long-term monitoring. The Department of Environment, Land, Water and Planning was the key delivery partner for this project, supported by North East CMA through the Australian Government's National Landcare Programme. The project was also funded by a number of partners, including the Victorian Government's Icon Threatened Species Program; BirdLife Australia; and the NSW Saving Our Species Project. The 2017 Regent Honeyeater Community Monitoring Project team and Friends of Chiltern Mount Pilot provided monitoring assistance.

The results

Eight weeks post their release, on average 54 individual Regent Honeyeaters have been recorded each monitoring day. That included a 2017 single day record of 61 birds. Eighty individual Regents were recorded in total, including 78 from the 2017 release birds, while two 2015 release birds continue to be regularly observed.

j. the adequacy of existing assessment processes for identifying threatened fauna conservation status;

We recognise that any person can nominate native species, an ecological community or threatening process for listing under the EPBC Act. This listing nominations is an annual process. An invitation to nominate is extended by the Minister ahead of the assessment cycle. In general, nominations are passed to a scientific committee who prepare a proposed priority assessment list. The final priority assessment list is then assessed by the scientific committee and recommendations are made to the Minister about the inclusion of native species, ecological communities or threatening processes under the Act.

We note that the current processes “freeze” listings of new species once the Minister determines that a project in a specific area is a controlled action under the Act. It is suggested that more open and flexible process be established to provide a more responsive way to have species considered for the priority list. This flexibility could be by default an annual process, but with discretion for urgent listings to be nominated at any time to reduce the time needed to formally increase protections).

System-wide improvements

There is an opportunity for national leadership to turn around Australia’s faunal extinction crisis. This requires system-wide improvements and includes:

- Improved mechanisms for aligning and coordinating investment and efforts of all levels of government and continent-wide through COAG;
- Establishing national environmental accounts that can demonstrate outcomes and progress, and contribute to adaptive management;
- Establishing national environmental-economic accounts to better measure the benefits of our natural assets including to our profitability, health and well-being;
- Adequately funded research that addresses multiple variables and systems approach, engaging with land managers, practitioners and decision-makers;
- Greater use of strategic assessments and bioregional planning through the EPBC Act, linked to or combined with regional NRM strategies;
- Addressing the risks and implications of climate change to our environment and threatened species in national policies and programs;
- Introduce national environmental significance for 'ecosystems of national significance' understanding that this is fundamental to reversing species decline and complementary to the regional landscape approach.

We will never turn around this crisis without sufficient commitment of resources. When compared to other budget items national investment in the environment reveals a low, and reducing, priority. If investment and efforts remain below an effective threshold we will never manage as a nation to protect our remarkable inheritance – despite best efforts. We may slow the decline but not turn it around.

Attachment A

Snapshot of Australia's Regional NRM organisations efforts to protect and recover Australia's threatened fauna and flora.

Case Study - Biodiversity Refugia & Linkages, South West Catchments Council, Western Australia

Challenge

The Western Ringtail Possum, a nationally-listed threatened species, was targeted for conservation action as part of this project. This initiative included the capturing of individuals from the southern forest population around Manjimup and translocating them into the 420-hectare predator-free Perup Sanctuary.

Results

To date, 15 individuals have been translocated and were reporting to be thriving at least two months post-release. Monitoring will continue until June 2018 to determine the success of this action in conserving and protecting this threatened species. This project is designed to work at a landscape scale across the South West to protect biodiversity and restore ecosystem function and resilience. The focus is on the protection of flora and fauna species, particularly threatened species, and Threatened Ecological Communities (TECs) through increasing connectivity in the landscape and restoring priority habitats.

This project works on strategic Land for Wildlife properties across the South West. Up to December 2016, the project has included 19 hectares of rabbit control, planted 28,371 seedlings and included 2.2 kilograms of seed spread. It has also included 3 events, attracting 176 participants and relocated 15 Western Ringtail Possums to Perup Sanctuary.

Case study: Orange-bellied Parrot Project - Corangamite CMA, Victoria

The challenge

The Orange-bellied Parrot is listed as critically endangered nationally and in the State of Victoria. This small, migratory parrot breeds in summer in remote south west Tasmania and migrates to coastal habitats of Victoria and South Australia for autumn and winter. Priority recovery actions for the species are set out in the National Recovery Plan (DELWP 2016), and implementation of this plan is overseen by a national Recovery Team. DELWP is an active member of this team and participates in setting priorities at a national and state scale.

During implementation of this project the total wild population numbered fewer than 50 individuals. The population was supplemented annually with captive-bred individuals to prevent extinction in the wild from occurring in the near-term. Every year, only a small proportion of the known wild population are found within the non-breeding range. At current population levels, fewer than 10 individuals are likely to be found each winter.

Results

During implementation of this project, separately funded research and management projects identified that:

- since 2010 there has been a decline in survival of adult females, and juveniles of both sexes, with most mortality occurring in the non-breeding season (DPIPWE, unpublished data),
- the current population is reliant on effective supplementation from the captive population, and measures to improve survival of adult females and juveniles, to prevent extinction in the wild (unpublished draft PVA model, National Recovery Team, 2016)
- habitat extent on the mainland largely recovered after the millennium drought and is not currently likely to be limiting recovery (White et. al. 2016) (i.e. there is sufficient habitat for over 50 birds)
- wild food availability in the breeding range is currently limiting, which may influence current breeding outcomes and survival (Stojanovic et al. 2017)
- migration success, non-breeding habitat selection, and survival may be impacted by very small population size, as Allee effects begin impacting this species' flocking ability (Crates et al. 2017).

Given the vast range of this highly mobile species (Appendix A), and the complexity of threats facing this very small population, actions in only one region in Victoria will not be sufficient to achieve recovery objectives. However, appropriate local contributions delivered across the range, will allow progress to be made against the recovery objectives collectively.

Case Study: Local Community Action towards the Recognition and Protection of the Scarlet Robin and its' habitat – Local Land Services South East and Environmental Trust

The challenge

The scarlet robin is a small Australian robin that reaches 13 cm in length. The male has a black head and upperparts, with a conspicuous white forehead patch, white wing stripes and white tail-edges. The male has a bright scarlet-red chest and a white belly. The female is pale brown, darker above, and has a dull reddish breast and whitish throat. The whitish mark on the female's forehead is smaller than the male's. The female Scarlet Robin also has white wing and tail markings. Immature males resemble females.

The scarlet robin lives in dry eucalypt forests and woodlands. The understorey is usually open and grassy with few scattered shrubs. It occasionally occurs in mallee or wet forest communities, or in wetlands and tea-tree swamps. In autumn and winter they may live in open grassy woodlands, and grasslands or grazed paddocks with scattered trees. Scarlet robin habitat usually contains abundant logs and fallen timber: these are important components of its habitat. Birds forage from low perches, fence-posts or on the ground, from where they pounce on small insects and other invertebrates which are taken from the ground, or off tree trunks and logs; they sometimes forage in the shrub or canopy layer.

Results

Actions required:

- Protect known and potential Scarlet Robin habitat, using landholder stewardship payments and covenants.
- Improve the condition of Scarlet Robin habitat through supplementary plantings of trees, shrubs (particularly wattles) and native ground cover. Retain dead fallen timber of all sizes, to provide foraging habitat.
- Fence sites to allow strategic grazing within native woodland remnants to ensure ground cover biomass is managed appropriately. Increase habitat connectivity by creating "corridor" or "stepping-stone enclosure" (20x20m plots maximum 100m apart) plantings of trees, shrubs and native ground cover species, that are locally indigenous, to reconnect patches of isolated habitat – focus on reconnecting riparian vegetation and other remnant vegetation

- Increase the area of protected Scarlet Robin habitat by fencing areas adjacent to remnant woodland to allow natural regeneration of trees, shrubs and ground cover. Control exotic berry-bearing shrubs such as Sweet Briar Rose, Hawthorn, Blackberry and replace with native shrubs such as wattles (*Acacia* spp.), Blackthorn (*Bursaria spinosa*) and she-oaks (*Allocasuarina* spp.).
- Replace exotic perennial pasture grasses such as Phalaris and Cocksfoot and ground cover weeds with native tussock grass species that are locally appropriate. Weeds should be removed using best-practice methods, including manual removal and chemical control as prescribed by the herbicide manufacturer.

Case Study: Marine Turtles - Healthy Land and Water, Queensland

The challenge

Three nationally threatened marine turtles- Green Turtle (*Chelonia mydas*), Loggerhead Turtle (*Caretta caretta*) and Hawksbill Turtle (*Eretmochelys imbricate*) - occur within South East Queensland (SEQ). The coastal waters of SEQ and particularly Moreton Bay provide foraging resources for all three species and Loggerhead Turtle are known to breed within the region. The anthropogenic threats identified within the national recovery plan all occur within the region; namely: terrestrial predation of nests, marine debris, expanding urbanisation and industrial development along coastal strips, fisheries bycatch, deteriorating water quality, and loss of nesting and foraging habitat. The greatest proportion of endangered marine turtles found stranded on the beaches of SEQ have died from 'floating disease' caused by ingestion of plastics so they can't dive to feed. They also die from boat strike and accidental capture in fishing gear.

Climate change has an impact on turtle nesting sites, altering sand temperatures, which then affects the sex of hatchlings. Beaches that are dark and have intact dunal systems attract nesting turtles, and these options are under threat in SEQ.

The response

Efforts are underway to reduce light pollution on beaches and restore dune integrity.

Healthy Land and Water is supporting coordinated fox control on North Stradbroke Island, in partnership with Quandamooka Yoolooburrabee Aboriginal Corporation (QYAC), Sibelco, Queensland Government and Redland City Council, to reduce predation on turtle eggs and hatchlings. Healthy Land and Water is restoring seagrass in Moreton Bay through environmentally friendly mooring replacement program (funded through fisheries offsets) and invests significant resources into monitoring and working with partners to improve the water quality of the region's waterways and estuaries.

Case Study: King Parrot Creek boasts a healthy Macquarie Perch population, Goulburn Broken CMA, Victoria

The challenge

Macquarie perch is a nationally endangered native fish species and the Goulburn Broken CMA is working closely with research scientists and the local community to better understand its behaviour and to improve its habitat.

King Parrot Creek begins its life in the southern slopes of the Goulburn catchment, travelling north through the Flowerdale Valley, Strath Creek and finally ending its journey in the mighty Goulburn River near Kerrisdale, downstream of Lake Eildon.

Arthur Rylah Institute in Victoria has conducted annual Macquarie perch monitoring in the King Parrot Creek since 2006. During the drought, Macquarie perch were restricted to a few deep pools and was not doing so well. Adding to the problem was the 2009 bushfires which threatened its survival when ash and sediment washed into the creek deoxygenating the water.

The results

Goulburn Broken CMA working in partnership with Victorian Fisheries Authority, King Parrot Creek Environment Group, Upper Goulburn Landcare network, Strath Creek Landcare Group, Arthur Rylah Institute

As insurance, a portion of the population was temporarily removed during March 2009 to a 'safe house' – a fish hatchery at Snobs Creek near Lake Eildon. These fish were reintroduced back into the creek in December 2009 when water quality had sufficiently improved.

Since 2006 a program of fencing, willow removal and revegation along the creek has resulted in improved habitat and water quality for the Macquarie perch. In 2006 31 fish were captured, followed by 16 fish two years later. In April 2014 119 fish were caught and released, the highest number captured since monitoring started.

Case Study: Coming back from the brink of extinction – Kangaroo Island NRM Board, South Australia

The challenge

The glossy black- cockatoo population on Kangaroo Island was under significant pressure due to loss of habitat. In 2011 only 300 birds remained.

The results

The project began in 2012 and planted 27.5 ha of sheoak woodland feeding habitat with 14,525 tube stock for glossy black-cockatoos. The project also built and installed 40 new artificial nest boxes, with assistance from the KI Green Army team. More than 250 nests were protected from possum predation and invasion by feral bees and corellas each year.

One of the big success factors is the high level of community involvement. In total, volunteers have spent more than 3,100 hours in the past five years helping the project through tree planting, collaring nest trees with tin, and undertaking population monitoring. This is equivalent to someone working full time for more than 18 months!

In 2016, Greening Australia in conjunction with Natural Resources Kangaroo Island and Natural Resources Adelaide and Mt Lofty Ranges, received funding from the Australian Government's 20 Million Trees program to re-establish a further 170 hectares of glossy black-cockatoo habitat. This revegetation project aims to restore drooping sheoak woodland and eucalypt forest on both Kangaroo Island and the Fleurieu Peninsula near Cape Jervis. The rationale is that this will further increase the eastern Kangaroo Island flock and provide ample food for their anticipated return to the mainland.

In mid-2017, Kangaroo Island Plantation Timbers responded to the KI NRM Board's call for private investment into the program. Their generous contribution for 2017–18 will support continuation of vital possum exclusion work, to help breeding success remain high for another year. The recovery program continues to seek further private investment to plant glossy black-cockatoo feeding habitat and support the ongoing work of the Friends of the Glossies group.

Case Study: Threatened Vegetation Communities Protection and Enhancement, Wimmera CMA, Victoria.

The challenge

This project protects and enhances threatened EPBC Act listed vegetation communities on private land. The project delivers funding directly to landholders and provides training and education in conservation and land management practices to enable better management of threats to the condition these vegetation communities in the Wimmera.

The results

Funded by the Australian Government's National Landcare Program, the project successfully assisted landholders to protect 11 seasonally herbaceous wetlands resulting in 288 hectares of this endangered vegetation community being actively managed under 10 year management agreements. In partnership with Trust for Nature, the project secured 6.5 hectares of Buloke Woodland under permanent protection through a Trust for Nature Covenant. This brings the total area of EPBC listed vegetation communities under active management to over 670 hectares since the project commenced 3 years ago.

The project was well supported by landholders with 28 landholders expressing interest in undertaking wetland protection and enhancement works in 2016/17. In addition to funding the on-ground management actions being undertaken the project raises the profile of these important vegetation communities and builds landholders capacity to protect these areas on their properties by providing best practise management advice and techniques during one on one site visits.

The project supported Park Victoria as the land manager to undertake targeted pest plant and animal control in priority locations to compliment the on ground being undertaken by landholders. These works provided employment and training opportunities for Traditional Owners and the local indigenous community by utilising them to undertake these on-ground works.

Case Study: Territory Conservation Agreements (TCA) – Territory NRM, Northern Territory

The challenge

The TCA program has been designed to reflect the priorities concerns and opportunities of Landholders in the NT, and the extraordinary ecological values which can be found on private lands and pastoral leaseholds. It has been in operation since 2011. While it was initially developed to promote off-reserve conservation of habitats for threatened species and underrepresented Territory bioregions, It has evolved into a mechanism that can encompass relatively large sites with extraordinary ecological values, as found across the Northern Territory.

The program has evolved an increasing focus upon fostering conservation on pastoral lands and mainstreaming conservation into the management of working properties and pastoral enterprise. TCAs are voluntary agreements between landholders and TNRM to mutually develop and implement a conservation plan for an identified high conservation value site. TCAs are contracts committing the landholder to implement management actions for 10 years, but is not registered on property title nor binding upon future owners. Conservation agreements support participant landholders to reconfigure their properties to conserve key sites and enable them to access ongoing support or technical advice

The results

As of the end of 2017 the program accounted for 43 TCAs (55,146Ha). The average area of a TCA is about 1500 Ha, although most are less than 500 hectares. Practice change in conservation has been enabled at an average of \$140/Ha. TCAs have leveraged 200% co-investment for every dollar invested.

Case Study: Cassowary protection – Terrain NRM, Queensland

The challenge

The southern cassowary (*Casuarius casuarius johnsonii*) is a large flightless bird found only in North Queensland, New Guinea and the Aru Islands. It has been referred to as a flagship or keystone species and has cultural, social and economic value to traditional owners, local residents and the tourism industry. It also plays a key role in rainforest habitat by dispersing many plant seeds, particularly long distance dispersal of species with large seeds. Threats to the cassowary include, development, habitat clearing and weed invasion, roads and traffic, dogs, feral pigs, hand feeding, diseases and extreme climatic events such as cyclones, wildfire and climate change.

The results

Terrain has been playing a key role in facilitating a number of projects to protect and recover the cassowary, particularly around the Cassowary Coast area near Mission Beach. Terrain is part of the Cassowary Recovery Team, a group of organisations that work together to coordinate the recovery plan for cassowaries and their habitat. Some of the projects Terrain is involved in include:

- Revegetation and weed management to improve and increase cassowary habitat so they can move through their habitat more easily
- Gathering of data to map cassowary corridors for town planning purposes
- Collecting information on cassowary incidents to keep stakeholders informed
- Coordinating stakeholders to find solutions to threats and risks to cassowaries
- Promoting community awareness of cassowaries including the creation of road signs during festivals.

One of the ways in which Terrain is working to help protect cassowaries is by collaborating with partners to identify cassowary corridors so they can be included in town planning and other land use planning documents.

Case Study: Community Based Feral Control to protect EPBC listed Black-flanked Rock-wallabies - Central Wheatbelt NRM, Western Australia

The challenge

To develop a robust and prescriptive threat management program with a tangible impact on the threats facing the EPBC listed Blackflanked Rock-wallabies in the Central Wheatbelt. Getting community members to take on the task of feral animal control from scratch is a big ask, so contractors were engaged to follow an initial prescribed threat management regime. The project site's location meant that any ground gained against ferals would clearly need to be maintained to prevent re-incursion of predators into the project area. To achieve this, landholders and community members living in the project area were the preferred choice to help maintain the investment long term. The challenge was to demonstrate that predator numbers could be managed to low levels.

The results

After 12 months of sustained effort, the gains were clear. Working in unison with Department of Agriculture (WA) and Department of Parks and Wildlife, Wheatbelt NRM were able to navigate policy and legislation to set the project up for success, now and into the future. “We will definitely continue to trap, and while we don’t have the resources to do it on such a large scale, we can see what we are doing is making a difference.” Project area landholder After running more than 150 cage traps around the periphery of DPaW administered reserves, the steady decline and very slow re-incursion rate of feral cats was a fantastic outcome. The greater outcome has been that the community surrounding these DPaW administered reserves has agreed to maintain a third of the traps themselves going forward – which is definitely the bigger success.