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HUMANE SOCIETY INTERNATIONAL

14th August 2008

TO: Senate Committee Rural and Regional Affairs and Transport
Parliament House
Canberra ACT 2600

Submission to the Senate Rural and Regional Affairs Committee's Inquiry into Natural Resource Management and Conservation Challenges

Dear Senator,

WWF and HSI welcome the opportunity to provide comment on the regional delivery of Natural Resource Management (NRM) programs in Australia. We welcome this opportunity for further input into the regional delivery of national NRM programs, and consider in light of the escalating threat of climate change, that swift coordinated action to conserve our natural assets is vital.

WWF is the world's largest conservation organisation, at work in over 100 countries and supported by more than five million people globally. WWF has worked for almost 30 years in Australia as an independent force to protect the natural environment – working across economic, political and cultural boundaries. During this time, WWF has built its community support base, now numbering more than 80,000 supporters across the country, and achieved solutions for the environment through an approach that is rational, practical, collaborative and science-based.

WWF's long-term vision for Australia is that its globally recognised biodiversity and ecological processes are conserved through the joint work of local communities, governments and businesses.

Humane Society International (HSI) is the global arm of The Humane Society of the United States (HSUS). Founded in 1991, HSI has expanded HSUS's program activities into Central and South America, Africa, and Asia. HSI's Asian, Australian, and European offices, as well as offices in Costa Rica and Canada, help carry out and support field activities and programs in over 35 countries. Our international efforts encompass relationships with the United Nations and work with various treaty and international agreements, including the World Trade Organization and the UN Food and Agriculture Organisation, affecting animals and their habitats. HSI works with national and jurisdictional governments, humane organizations, and individual animal protectionists to find practical, culturally sensitive, and long-term solutions to common animal

problems. The HSUS/HSI has approximately 10 million members. The Australian office was established in 1994 and with 40,000 supporters, concentrates on national and regional biodiversity conservation issues.

WWF and HSI believe it is fundamentally important for regional NRM programs to maintain existing local capacity and build further capacity to deliver integrated NRM beyond institutional reforms. It is also important that the regional NRM groups are fully aware of this community capacity, and have the mechanisms to monitor community contributions and their effectiveness. This community capacity and the social capital that is built within and between NRM groups is fundamental to the ability to adapt to ongoing challenges such as climate change.

We acknowledge the need and challenges related to engaging with smaller regional rural and urban community groups, NGOs, and individuals with expertise in the policy and delivery of NRM. Much of the motivation for these groups and individuals comes from working at a very localised scale. The challenge of developing, communicating and implementing national, state, regional and local plans and targets, and allocating appropriate ongoing funding to retain and develop expertise, will require significant investment of time and capacity in the development of regional natural resource management plans that are aligned with and informed by comprehensive bioregional assessment data and resource condition reports.

Earlier in 2008, WWF, HSI and the Australian Conservation Foundation jointly prepared a policy paper to inform the design of short and long-term objectives and targets for the new Caring for Our Country Program (CFOC). As well, as providing a submission on the terms of reference, as below, and an example of previous NRM work through the NHT program (Attachment 1), we have attached our CFOC policy paper (Attachment II) as a summary of our joint priorities and aspirations for the program.

Australia's natural assets require a streamlined, efficient and coordinated approach to governance and direction setting. This is becoming even more important given the likely major impacts of climate change on our biodiversity. The challenge for current governments is to develop a network of inspired and well-informed managers whose long-term targets and objectives are clearly identified and well-funded and achievable.

Yours sincerely

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Submission to the Senate Rural and Regional Affairs Committee Inquiry into Natural Resource Management and Conservation Challenges

WWF-Australia and Humane Society International

August 2008

Towards Cohesive Natural Resource Management

Summary of Recommendations

Recommendation 1: That COAG revisit the 1992 Intergovernmental Agreement on the Environment, the 1997 Heads of agreement on Commonwealth and State roles and responsibilities for the Environment, and the National Strategy for the Conservation of Australia's Biological Diversity in order to establish a coherent long-term national policy framework that links national, state, regional and local priorities, plans and programs.

Recommendation 2: That bilateral agreements, under a newly negotiated IGAE, more closely stipulate responsibilities relating to regional management, and require joint long-term government funding commitments for the ongoing implementation of regional natural resource management plans.

Recommendation 3: That more funding is allocated to national driver programs that sit outside the regional delivery system in order to provide a more effective and more efficient way to adequately fund key national conservation initiatives.

Recommendation 4: That the Commonwealth assist state and regional governments in completing bioregional assessments for all natural resources in order to provide baseline data to inform planning and prioritise management interventions by natural resource managers.

Recommendation 5: That Commonwealth and state governments cooperatively establish publicly accessible annual Resource Condition Reports that identify terrestrial, aquatic and marine biodiversity indicators and record their current status to feed into biannual national State of the Environment reports, and that all funding for programs seeks to generate scientific data that will to contribute the national body of environmental knowledge.

Recommendation 6: That a comprehensive and nationally-consistent regional monitoring and evaluation system for NRM programs is established to record changes in baseline bioregional assessment findings and to inform Resource Condition Reports.

Recommendation 7: That governments encourage the strengthening of cross-regional integration between regional NRM bodies with obvious bioregional and ecoregional linkages (perhaps through the identification of ROGs – Regional Organisation of Groups), and that further efforts be made towards encouraging the development and funding of genuine, significant cross-regional projects.

We support the regional delivery of national NRM programs however we believe there are significant opportunities to improve the overall governance and funding mechanisms, to minimise transaction costs and to improve monitoring and evaluation of outcomes.

The Natural Heritage Trust contributed funds to many excellent projects around the country and has increased community understanding of, engagement in, and implementation of improved land management practices and biodiversity conservation outcomes. WWF is directly involved in some of these success stories. We take this opportunity to remind you of the huge amount of social capital that has been invested in the regional NRM programs, including an extraordinary amount of voluntary community input. Every effort should be made to ensure that this social capital is maintained in the ongoing implementation of the Commonwealth's new Caring for Our Country program, and in efforts to refine, refocus and optimise the new program.

It is useful to note:

- **Australia's biodiversity continues to decline**. Comprehensive and science based evidence presented in the NLWRA Terrestrial Biodiversity Assessment 2002 and the State of the Environment Report 2001 highlight that Australia's natural systems are in decline. Significant new and additional effort is required to stabilise this downward trend. More recent State of the Environment reports at national and state levels do not suggest significant recovery or improvement in the condition of our natural assets has occurred, and climate predictions suggest threat levels are escalating exponentially.
- **Australia lacks regional Resource Condition Reports and comprehensive Bioregional Assessments.** These basic data sets would allow all levels of government to strategically identify land, water and biodiversity management needs, as well as set baselines for improved condition, and robust and creditable monitoring of the success of management interventions. Bioregional data sets relating to biodiversity, in terrestrial, freshwater, coastal and marine environments, will be directly relevant in the development of national and state climate adaptation strategies such as through the National Biodiversity and Climate Change Action Plan. Only a comprehensive understanding of the location and condition of key refugia and existing landscape corridors (such as traveling stock routes) will give managers the knowledge base needed to implement adaptation strategies.
- **Regional delivery of NRM has failed to contribute to national biodiversity priorities and targets.** The majority of resources under NHT2 were being delivered through regional NRM plans, which led to:

  ‹ Conservation of national biodiversity assets being traded off against other more immediate localised management needs, which meant compromising the achievement of national objectives at the regional level, and difficulty in translating national priorities into regional actions

  ‹ Many regional initiatives focusing on symptoms rather than underlying causes

  ‹ High degree of variability of biodiversity expertise between regions

leading to varied emphasis on biodiversity objectives

- **Insufficient funding has been available to national biodiversity programs**

- **Previous NRM programs tended to be reactive with a focus on repairing damaged landscapes**. Very real opportunities exist to move to a system of cooperative funding (from national and state coffers) in order to ensure core, ongoing funding and expertise is available for regional managers of ongoing threats, such as invasive species, as well as competitive grants available to regions whose work contributes to national priorities.
- **Biodiversity conservation is poorly integrated into NRM planning**. The NLWRA Terrestrial Biodiversity Assessment found that that effective integration had occurred in only 1.5% of biodiversity sub-regions. Such low levels of effective integration into natural resource management cannot sustain Australia's immense biodiversity nor underpin the protection of essential ecosystem services. Improved governance arrangements for NRM financial investments must be tied to effective, overarching and well-coordinated national and state biodiversity strategies and targets. Given the incomplete and out-dated state of these overarching policies, it is difficult for regional managers to understand state priorities, or make the most of longer-term opportunities to contribute to national goals.

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Management of natural resources, particularly those that form part of a working ecosystem delivering vital services, are complex and require long-term investments in knowledge, capacity and onground works. Cost-effective natural resource management requires negotiation between stakeholders over the content, direction and implementation of target-based regional planning guided by coherent and complementary national, state, regional and local plans and policies.

Consistent and coordinated regional plans, aligned as closely as possible with bioregional boundaries, should require COAG accreditation in order to facilitate negotiation between governments on targets, funding requirements, responsibilities and priorities, and be subject to uniform statutory review.

Recommendation 1: That COAG revisit the 1992 Intergovernmental Agreement on the Environment, the 1997 Heads of agreement on Commonwealth and State roles and responsibilities for the Environment, and the National Strategy for the Conservation of Australia's Biological Diversity in order to establish a more coherent long-term national policy framework that links national, state, regional and local priorities, plans and programs.

Planning and funding cycles should be at least five or ten year commitments. The current one-, two-and three-year funding cycles and commitments provide too-short a time-frame for many

initiatives that require sustainable long-term funding assurance to adequately plan and implement initiatives that can deliver lasting solutions.

Planning and implementation timeframes available under the current systems are grossly inadequate to achieve conservation outcomes. We need to be realistic about what can be achieved and in what timescales, given the level of resources and effort currently put into NRM and conservation work in Australia. A lot of the objectives we have set ourselves will take decades to achieve and the commitment to ongoing funding needs to be commensurate with such timescales. It is important that the effort to develop and refine clear and appropriate objectives for NRM Regional Strategies continues.

One of the issues that has arisen due to the short timeframes has been a lack of opportunity for feedback to be provided and incorporated into the NRM process. There is a need to develop an appropriate structure for the provision of high level NRM policy and strategic feedback and advice from the community to government -an inclusive two-way dialogue process between the NRM regions and governments. The NHT provided too few opportunities for adequate dialogue to flow directly from the regions to Commonwealth government agencies, with the NRM strategy development and implementation process being locked into Commonwealth driven timeframes that are frequently inappropriate for local communities and under-resourced regions.

Recommendation 2: That bilateral agreements, under a newly negotiated IGAE, more closely stipulate stipulate responsibilities relating to regional management, and require joint long-term government funding commitments for the ongoing implementation of regional natural resource management plans.

The current delivery model does not ensure that Commonwealth investment secures Commonwealth responsibilities and interests (particularly those in the 1997 Heads of Agreement on Commonwealth/State Roles and Responsibilities for the Environment). In the first instance, this is due to the significant decrease in funds for 'national driver programs', such as funding for maintaining World Heritage properties and the establishment of the National Reserve System (NRS). There is an urgent need for the reinvigoration, further development and, in some cases, reinstatement of national programs such as the NRS, threatened species programs (eg. Threatened species recovery plans).

By funneling funding for national priorities through the regional delivery system, the Commonwealth has reduced its capacity to ensure these national conservation outcomes are achieved and increased transaction costs.

An example of a problem created by the current system is that in the past, funding for key threatened species work went directly to species recovery teams. This is not always the case under the regional delivery model under which such funds go first to the regional NRM group. This has created some difficulties, for example, in situations where species extend over multiple regions (or even over states), where it has been difficult to coordinate funding.

A significant number of recovery teams are finding it difficult to access funds via the regional NRM system. Groups are consistently being told that because there is not enough money for existing recovery plans, it would be difficult for new recovery plans to receive funding. Recovery plans have been developed for many threatened species, but some regions are only directing small amounts of funds towards actions contained in the plans.

Recommendation 3: That more funding is allocated to national driver programs that sit outside the regional delivery system in order to provide a more effective and more efficient way to adequately fund key national conservation initiatives.

WWF also sees potential in the further use of targeted PES/stewardship/incentives schemes for the delivery of environmental outcomes and natural resource management. These can provide funding and policy support for specific suitable interventions, implemented in consultation with regional bodies and consideration of regional priorities.

Case Study - Incentives

We include for your information, as well as our policy submission, our recent report Native Vegetation Regional Pilot Projects Initiative: Balancing Agricultural Production and Conservation of Wetlands of the Gin Gin Shire, Western Australia and urge you to consider in particular the recommendation relating to incentives on page 42 of the report. It notes:

"Incentives were found to be a very effective means of engaging landholders in this process, ensuring a sense of equity in responsibility for management of wetland areas, as well as providing a timely intervention to halt threatening agricultural processes. Without the use of incentives, much of the work achieved in the project many not have occurred, or would have taken many years to complete."

For more information on this Case Study, please see Appendix I

Biodiversity conservation priorities developed through the regional delivery process have in many cases been based on limited scientific knowledge/input and have frequently been largely determined by stakeholder influence and bias. There is a need for scientifically robust regional biodiversity assessments to determine the biodiversity values/assets to be protected.

Recommendation 4: That the Commonwealth assist state and regional governments in completing bioregional assessments for all natural resources in order to provide baseline data to inform planning and prioritise management interventions by natural resource managers.

Scientific and technical capacity – particularly to guide project development and assessment -is still limited within many NRM regions, and mechanisms are needed for further enhancement of this capacity. This can be done by supporting existing, frequently state, capacity, or through building capacity within communities.

The failure of many regional NRM groups to adequately and comprehensively address biodiversity issues is a cause of considerable concern. Many of the groups in these situations are simply not equipped to deal with complex biodiversity conservation problems. In many cases existing state government agencies, which employ numerous experienced conservation scientists and managers, are in a much better position to do this. Mechanisms for better communication and relationship-building between these conservation scientists and regional managers will go a long way to ensuring that plans and targets have local relevance and are effectively

implemented.

Recommendation 5: That Commonwealth and state governments cooperatively establish publicly accessible annual Resource Condition Reports that identify terrestrial, aquatic and marine biodiversity indicators and record their current status to feed into biannual national State of the Environment reports, and that all funding for programs seeks to generate scientific data that will to contribute the national body of environmental knowledge.

A significant shortfall identified under the previous system, is the failure of data generated under NHT1 and NHT2 to be useable and made available to national data systems. Monitoring and reporting is an essential feedback mechanism to ensure cost-effective investment. Regional plans and activities must include monitoring and evaluation programs that contribute to Resource Condition Reports, as well as identify thresholds of change for key bioregional indicators, such as extent of wetlands, in order to allow for targeted management within a changing climate.

Monitoring programs were poorly implemented under the first phases of NHT, as they are often seen as a cost and not an investment. The importance of monitoring and evaluation to science, and program planning and evaluation, cannot be overstated.

Recommendation 6: That a comprehensive and nationally-consistent regional monitoring and evaluation system for NRM programs is established to record changes in baseline bioregional assessment findings and to inform Resource Condition Reports.

Under the current cross-regional component funding, it is necessary for one regional NRM group to be the proponent and other adjacent/relevant regions to endorse it. This demands a degree of knowledge (and willingness to consider/engage) of cross-regional issues that may not be present, or may be present to varying degrees, among the regions. Cross-regional issues need to be given greater emphasis than they are currently, and mechanisms put in place to support more cross-regional initiatives.

For the purposes of biodiversity conservation, regional/catchment-based geographical areas frequently prove to be spatially inadequate to fully address broad-ranging threats and issues that extend over large areas. For many priorities, biodiversity conservation planning and implementation is more effectively undertaken at bioregional or ecoregional scales – across the boundaries of multiple relatively smaller NRM regions.

A number of regional bodies have indicated that they want, and need, a more strategic framework for their investment in biodiversity so that it can be of maximum effectiveness. This requires a concerted effort to integrate regional NRM delivery (currently being conducted by 56 regional NRM bodies) into ecoregional and bioregional assessment across Australia's 85 bioregions to determine the status of biodiversity and principal broad-scale threats, and to assemble the suite of practical and cost-effective interventions that are tailored for each bioregion.

In some areas this may be even better conducted at an ecoregional scale – such as the Southwest Australia Ecoregion (Global Biodiversity Hotspot / Floristic Province) which encompasses five NRM regions and ten bioregions – a bioregional complex. The Southwest Australia Ecoregion

Initiative, comprising a consortium of organisations in the ecoregion, is currently developing an ecoregional (cross-NRM-regional) biodiversity conservation strategy.

Recommendation 7: That governments encourage the strengthening of cross-regional integration between regional NRM bodies with obvious bioregional and ecoregional linkages (perhaps through the identification of ROGs – Regional Organisation of Groups), and that further efforts be made towards encouraging the development and funding of genuine, significant cross-regional projects.

For more information on this submission please contact:

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Native Vegetation Regional Pilot Projects Initiative

BAPC: Balancing Agricultural Production and Conservation in Wetlands of the Gingin Shire, Western Australia

Final Project Report
June 2008

Australian Government

Our Land. **Our Plan. Our Future.**

Funding

This project was funded through the Native Vegetation Regional Pilot Projects, by the Australian Government Department of Agriculture, Fisheries & Forestry and the Natural Heritage Trust.

Acknowledgements

Special thanks to all the landholders and steering committee members involved in the project. Thanks to the staff of the Chittering Landcare Centre and WWF-Australia who have helped out in one way or another. Thanks also to the various DAFF staff who provided important input into the project at various stages, including: Cynthia Maher, Yvonne Francis, Vicki Hodges, Brad Lockley, Jo Andrews and Jean Chesson.

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First published: July 2008

The opinions expressed in this publication are those of the author and do not necessarily reflect the views of WWF.

Cover image: Paperbark wetland in Gingin (Photo: Michael Roache)

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List of Acronyms Used in this Report

ALR	Auction for Landscape Recovery
BAPC	Balancing Agricultural Production and Conservation
DAFF	Australian Government Department of Agriculture, Fisheries and Forestry
DEC	Western Australian Department of Environment and Conservation
EMS	Environmental Management Strategy
EPA	Environmental Protection Agency
EPP	Environmental Protection Policy
GIS	Geographic Information System
LCDC	Land Conservation District Committee
MBI	Market-Based Incentive
NACC	Northern Agricultural Catchments Council
NAIA	Natural Area Initial Assessment
NAP	National Action Plan for Salinity and Water Quality
NHT	Natural Heritage Trust
NRM	Natural Resource Management
NVIS	National Vegetation Information System
NVRPP	Native Vegetation Regional Pilot Projects Initiative
PBP	Perth Biodiversity Project
PGA	Pastoralists and Graziers Association of Western Australia
TIP	Targeted Investment Program
VMA	Voluntary Management Agreement
WAFF	Western Australian Farmers Federation
WAPRA	Western Australian Property Rights Association
WWF-Australia	World Wide Fund for Nature, Australia

"We have the opportunity to reverse trends of wetland ecosystem degradation and loss by embracing management guidelines based on the best available science, engaging stakeholders in conservation decisions, and conducting research to inform conservation practices."

Calhoun, 2007

1. Executive Summary

Balancing Agricultural Production and Conservation in Wetlands of the Gingin Shire (BAPC Wetlands) was one of six pilot projects conducted across Australia from 2006-2008 to improve sustainable native vegetation management on farms. The pilot was initiated and funded under the Department of Agriculture, Fisheries and Forestry (DAFF) Native Vegetation Regional Pilot Program. The funding of these projects by the Australian Government within a first round pilot program highlights the interest in seeking new approaches to the conservation of native vegetation throughout Australia.

BAPC Wetlands was a field-based project which explored innovative ways to engage agricultural landholders in conserving the high-value remnant wetlands on their properties. The project was set in a highly modified agricultural landscape in the Shire of Gingin, 80 km north of Perth in Western Australia. The wetlands in the area are threatened by further land clearing, intensive livestock grazing, altered water regimes, chemical and nutrient runoff, invasive weeds and feral animals.

- The project was devised as a simple fixed price conservation incentive scheme, with $120,000 available to private landholders for on-ground works focusing on wetland conservation measures, combined with farm production improvements to offset possible production losses from wetland conservation.
- One local project manager, employed full-time for the project, was responsible for communications with landholders, site assessments, data entry and management plan development with landholders.
- The BAPC Wetlands project successfully engaged landholders in an agricultural region known for its antagonistic attitudes towards government regulation of wetlands.
- A total of seven landholders on nine properties were engaged, resulting in a total of 9 separate Voluntary Management Agreements (VMAs) for a period of five years each.
- Management actions focused on the fencing of high-value wetlands and associated native vegetation; livestock watering points including tanks, troughs and pumps; property planning; and perennial pastures.
- Surveys of landholders in the project area indicated the importance of flexibility in what incentives were available, the focus on production as well as conservation, and the retention of land management decisions, particularly in times of emergency.
- BAPC Wetlands successfully secured 367 hectares of high-value wetlands in management agreements, at an average cost of $332/hectare. It is possible that a market-based incentive project could have reduced this cost per hectare. However, given the prevailing attitudes in the Gingin area, such a project may not have achieved sufficient landholder interest to be successful.
- The administrative efficiency of the project was low, but the high costs were linked to the timeframe and scope of the project. As a pilot scheme, funds for on-ground works were low relative to total project funds. Over a longer period and given a larger project

area with a higher initial funding level, it is anticipated that the ratio of administrative to on-ground costs would be significantly reduced.

- Wetlands for potential inclusion in the project were defined as being on private production land, and having high biodiversity values. An existing wetland database was used, listing ecological value (according to standardised categories), extent, type, and location across the project area. This was an invaluable resource in determining which wetlands to target for the project.
- Landholders were engaged through a project mail-out to all landholders with suitable wetlands on their property. This method had limited success, as most landholders that ended up participating in the project became involved through existing contact networks, rather than the mail-out. The property planning workshop held in Gingin was also useful in engaging landholders.
- Many of the landholders engaged by the project had already undertaken some form of conservation work on their property, either through Envirofunds or private means. Accordingly, it may be concluded that much of the difficult process of reaching less receptive landholders in the area is yet to come.
- To be eligible for inclusion in the project, a comprehensive site assessment was undertaken to determine whether the wetlands in question were of sufficiently high value and had sufficient means of self-regeneration to be worthy of project investment.
- Personal contact with landholders was crucial to the process of engendering trust, and to the development of a mutually agreeable plan for conservation of wetland systems and surrounding native vegetation whilst ensuring production benefits.
- While a broad suite of incentives to fence wetlands was offered to landholders, those of principal interest were fencing materials and off-wetland watering points.
- The accurate and reliable prediction of response to proposed management actions is an area requiring a dedicated research program to provide workable and meaningful methodologies.
- The public benefits of having a healthy and well-connected mosaic of native vegetation across the landscape are difficult to quantify, particularly within a pilot project of this scale. However, the costs of restoring these areas from a completely degraded state, compared to the costs of early management intervention, would be very high indeed.
- The high levels of diversity, endemism and species turnover on the Swan Coastal Plain of Western Australia are a challenge to any scheme attempting to conserve a comprehensive suite of wetland types at the regional scale.
- The project successfully engaged a number of stakeholders including landholders, a regional NRM body, government and non-government agencies, local government, and a landholder organisation in a multi-disciplinary project. It was also successfully managed by a non-government organisation.

2. Introduction

Government responses to conflict arising from private land management and the public benefits this may produce have often involved the use of legislation to change the private decision-making framework (Whitten and Bennett, 2005). However, some lobby groups representing landholders have argued that such legislative responses adversely impact on their own welfare and that of their local community (Whitten and Bennett, 2005). This is certainly the case with the Western Australia Property Rights Association (WAPRA), a group of citizens concerned about government regulation of private land. Their arguments are generally based on expectations of welfare reductions caused by restrictions to property rights. Conversely, environmental lobby groups, including the Western Australian Environmental Protection Agency (EPA), have argued that the legislative response is inadequate to protect and enhance environmental assets and society's welfare. Thus the appropriateness of alternative policy frameworks to influence the management of privately owned natural resources becomes the key point of leverage.

In the context of exploring these alternative policy frameworks, the Department of Agriculture, Fisheries and Forestry (DAFF) initiated the Native Vegetation Regional Pilot Projects Initiative (NVRPP).

The aim of the NVRPP was to investigate and pilot improved arrangements for native vegetation management such as:

- more flexible and practical regulatory implementation approaches;
- least cost regulatory compliance mechanisms; and
- complementary non-regulatory approaches, including government, industry and regional initiatives.

The arrangements of the NVRPP targeted the development of sustainable, profitable businesses that manage native vegetation for both public and private benefit, providing important lessons for the development of native vegetation policy that:

- allows farmers to demonstrate their sustainable land use and environmental credentials;
- recognises the contribution farm management makes to regional priorities and targets; and
- shares the costs of managing native vegetation for public benefit between landholders and the Australian community.

Projects involved a close partnership between the Australian Government, landholders, regional organisations, non-government organisations and the States. Projects were established in regions where improving native vegetation management is a priority issue for farmers.

The Western Australian pilot project is called 'Balancing Agricultural Production and Conservation in Wetlands of Gingin Shire' (BAPC Wetlands). It developed a complementary non-regulatory approach with direct links to native vegetation decision-making by farmers in wetland areas that remain part of farm productions systems. The project worked with landholders, industry organisations, and local community organisations to develop and trial incentives and extension services to landholders for

activities that improve wetland conservation outcomes, while maintaining grazing opportunities. The project contributed to improved native vegetation management on farms that in turn contributes to regional and national objectives. The project further aimed to improve resource security for landholders and demonstrate to the community that landholders are good environmental managers.

The principle innovation of the BAPC Wetlands project was in providing agricultural landholders with the funds for farm improvement as a direct offset for excluding their livestock from high-value wetlands. Moreover, provision for emergency grazing of wetland areas in times of drought has ensured that landholders are more likely to accept government funding for capital works on their properties. Flexibility in management options, both in terms of grazing livestock and wetland conservation, is a crucial element of this incentive scheme. Finally, a focus on whole farm management and long-term planning was encouraged as a means of setting conservation and production targets to ensure farm viability into the future.

The project has:

- developed and trialled an incentive and advice approach to engage landholders in improving conservation outcomes in wetland areas that remain part of production systems;
- developed a wetlands management framework for landholders that provides the flexibility needed to effectively balance production and conservation outcomes, and that can be applied more widely by other regional groups;
- invested in management activities beyond landholders' regulatory requirements; and
- investigated the economic and social value of maintaining and improving wetland native vegetation on farms (including public and private benefits).

Expected productive and environmental outcomes for landholders from the project include:

- enhanced environmental benefits from wetlands and improved resource security for landholders;
- improved integrated production and environment management activities for wetlands on farms;
- lower impediments to uptake of practices by farmers that provide greater environmental benefits to the community, consistent with regional NRM plans;
- increased protection of high value wetland native vegetation; and
- demonstration to the community that landholders are good environmental managers.

Project partners (including membership of the Project Steering Committee) incorporated landholders, industry groups, local government authorities, state government authorities and DAFF. The project was delivered by the environmental non-government organisation (NGO) WWF-Australia.

2.1. Wetland values

Wetlands as ecosystems provide a range of important benefits to society, and they face pressures from a diverse array of alternative uses. Disturbances, such as fire, livestock

grazing and introduced weeds, all have profound effects on vegetation structure and the composition of remnant vegetation (Driscoll, 2007). Changes in vegetation structure can alter animal abundance through loss of shelter, altered foraging behaviour or loss of food resources. Changes in plant species composition are also influential, as specialist animal species are dependent on particular plants.

Grazing by livestock is a widespread management practice that alters vegetation structure and composition (Driscoll, 2007). The implications for native biota are frequently negative, but not always. In a study of Australian arid regions by James *et al.* (1999), highest species richness usually occurred at low or medium grazing levels, while at high grazing intensity only a few resistant species remained. A diversity of responses to grazing in woodlands, wetlands and grasslands implies that biodiversity conservation is likely to involve a diversity of grazing regimes, but the avoidance of high grazing intensities is imperative for the maintenance of resilient natural ecosystems (Driscoll, 2007). In a study of grassy woodlands (Maron and Lill, 2005), grazing-related changes to the understorey altered bird foraging modes, reducing foraging efficiency. Jansen and Healey (2003) found there were clear relationships between frog communities and wetland condition, with communities, species richness, and some individual species of frogs declining with increased grazing intensity. Grazing intensity appeared to influence frog communities through changes in wetland habitat quality, particularly the vegetation. The implication is that reduced stocking rates may result in improved wetland condition and more diverse frog communities.

In a highly modified and fragmented landscape such as Gingin Shire, 'isolated wetlands' have an important role in conserving aquatic integrity at the landscape scale (Leibowitz, 2003). 'Isolated' wetland functions – specifically the transfer of energy, matter (water, sediment), nutrients and organisms between isolated wetlands and other aquatic and terrestrial systems, often mediated by intermittent hydrological connections – argue against the label 'isolated' (Calhoun, 2007). In a study of loss of isolated and fragmented wetlands habitat, Gibbs (1993) revealed that local populations of turtles, small birds, and small mammals, stable under conditions of no wetland loss, faced a significant risk of extinction after loss of small wetlands. These results suggest that small wetlands play a greater role in the population dynamics of certain taxa of wetland animals than the modest area comprised by small wetlands might imply. Thus even small remnant wetlands in highly modified agricultural landscapes can provide a range of habitat values and ecosystem services to the local area, and perhaps the region.

Table 1 shows a series of wetland outputs and their potential benefits and harms to landholders and the general public.

Table 1: Wetland outputs and their potential benefits and harms

Wetland output	Wetland Benefit
Waterfowl	Waterfowl hunted
Avifauna	Birds seen and identified
Avifauna	Pest control
Aquatic fauna	Fish and crustacean food sources
Flora – trees	Timber
Wetland ecosystem	Scenic vista
Wetland ecosystem	Recreation

Wetland output	Wetland Benefit
Flood-storm mitigation	Erosion control
Flood storm mitigation	Flood mitigation
Flora production	Grazing input
Non-combustible flora	Fire break
Aquifer recharge	Water supply
Water storage	Water supply
Pollution reduction	Improved water quality
Biodiversity maintenance	Unknown future benefits
Wetland ecosystem	Existence of natural areas
Wetland Output	**Wetland Harm**
Insects	Nuisance and disease vectors
Flora pest breeding	Weeds
Fauna pest breeding	Feral and pest animals
High water table	Reduced productivity
Combustible flora	Fire danger
Wet soils	Bogged livestock
Decomposing flora or fauna	Foul odours
Wet soil and water	Access difficulty
Wetland ecosystem	Impact of regulation on landowner

*After Whitten & Bennett (2005)

2.2. Project context

2.2.1. Southwest Australia Ecoregion

The project area falls within the Southwest Australia Ecoregion (Figure 1). It is globally recognised as one of the planet's major biodiversity hotspots. This recognition of global significance is based on high levels of natural diversity, particularly for plants and amphibians, together with high levels of threat to that diversity. It is one of only five Mediterranean-type ecosystems to be listed as globally significant. It is also one of the few hotspots found in a developed country and is the only global hotspot in Australia. The importance of Southwest Australia's biodiversity is also recognised by the Government of Australia: five of the 15 national biodiversity hotspots are located within the Ecoregion (Gole, 2006).

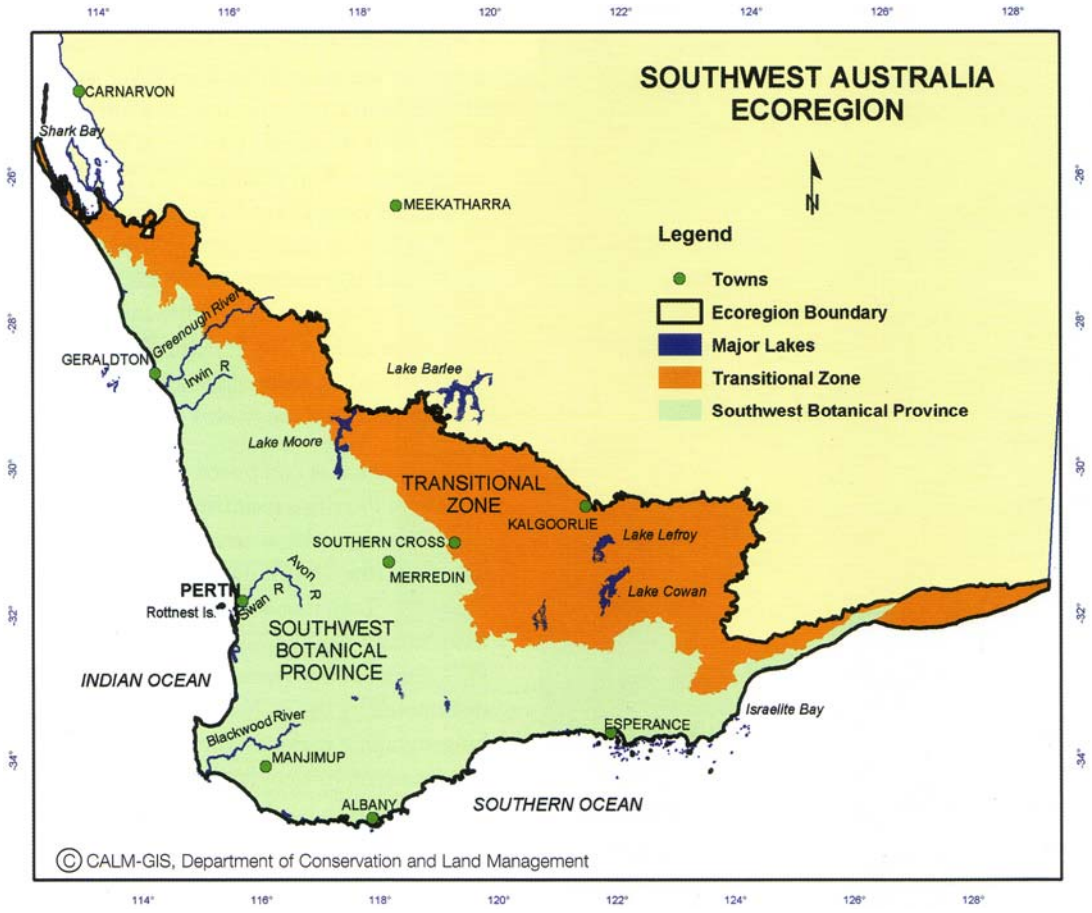

Figure 1: The Southwest Australia Ecoregion. The project area, Gingin Shire, lies 80 km north of Perth. (Gole, 2006)

2.2.2. Swan Coastal Plain

It has been estimated that since European settlement of the Perth area and the surrounding Swan Coastal Plain (Figure 2), approximately 80% of all wetlands in the region have been drained, filled or cleared of native vegetation (Hill et al., 1996). Agriculture has had an impact on the Swan coastal wetlands that remain, and recent urban expansion in the Swan Coastal Plain region has increased conservation pressure on wetlands in rural zones. Agriculture remains an active user of wetlands for stock water, summer grazing and irrigation on the Swan Coastal Plain, and can contribute to further degradation through:

- Drainage, infilling and clearing - Extensive clearing and draining of wetlands has taken place in the south-west of Western Australia to enable agricultural activities, such as cropping, grazing and market gardening. This has resulted in the loss of wetland habitat, increased erosion and sedimentation and transport of nutrients via surface drains.
- Over grazing (pastoral regions) - Unrestricted grazing in wetlands can considerably degrade native plant communities and wetland water quality. Livestock such as sheep, cattle and horses not only damage wetland vegetation through grazing and trampling but also destabilise wetland banks, leading to erosion. Other impacts may

include soil compaction, selective grazing (of more palatable species), weed invasion, degradation or loss of habitat, and elevated nutrient levels in the wetland itself (Calhoun, 2007).

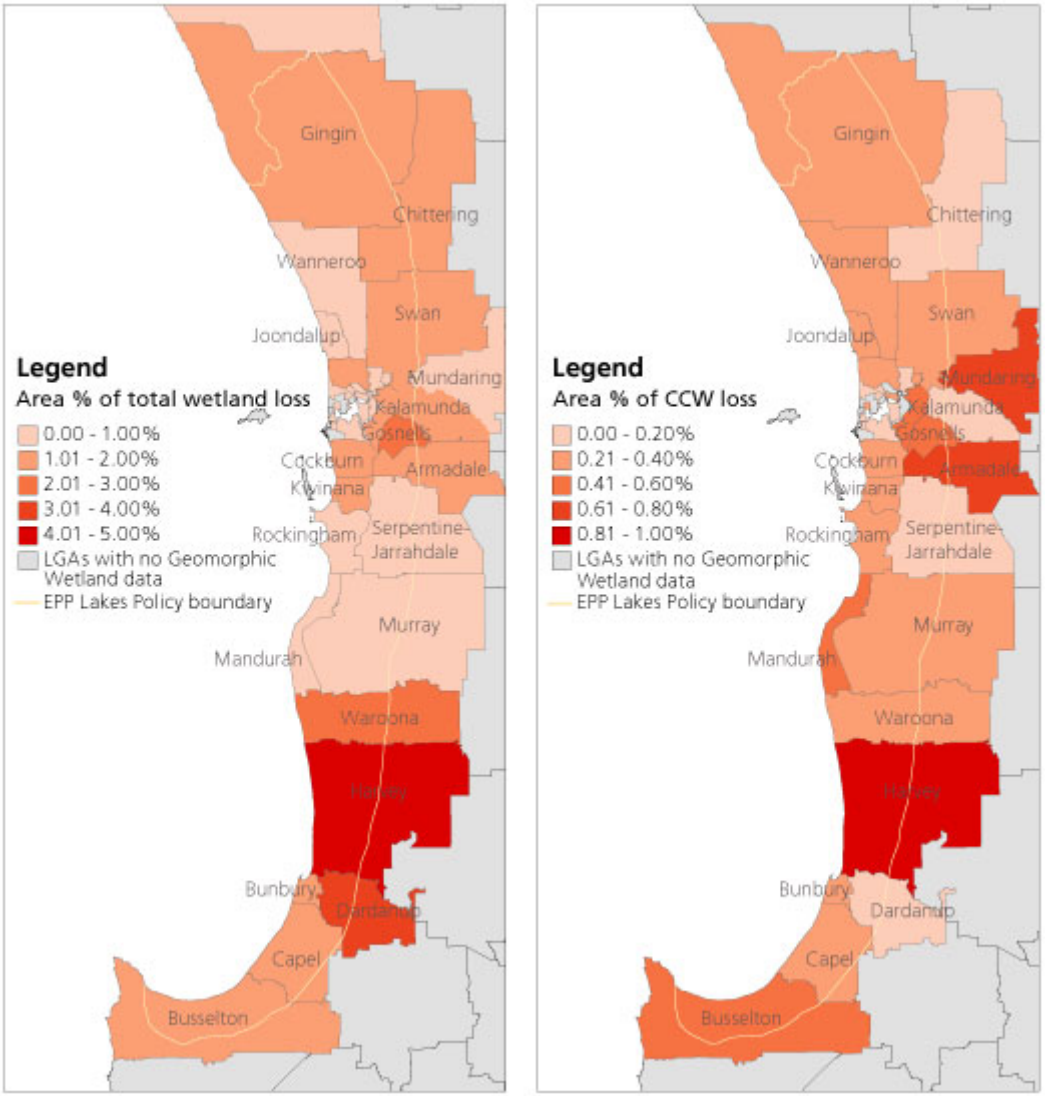

Figure 2: Map of the Swan Coastal Plain (showing percentage of wetland loss or degradation on the Swan Coastal Plain by local government area, 1996-2004. Percentage and loss is displayed for (a) all wetlands and (b) conservation category wetlands (CCW). Gingin Shire is the northern-most local government area on the plain.) (EPA, 2007)

The conversion of the landscape to pastoral production has been motivated by the private gains obtained through clearing and improvement. However, the private and social values generated by natural wetlands in the region have been significantly reduced by the subsequent resource degradation. These values include drought refuges for water birds, bird-breeding events, landscape appearance, recreation and fodder production. The management of many degraded and converted wetlands in the region could be changed to rehabilitate or re-create healthy wetlands in the region thus changing the mix of values generated.

Wetlands not only include lakes with open water but areas of seasonally, intermittently or permanently waterlogged soil. Approximately 20% of the Swan Coastal Plain between Moore River and Mandurah is classified as wetland (Water and Rivers Commission, 2001). Though extensive in area, not all wetlands retain significant ecological values due to the concentration of urban and agricultural development in the region. It is estimated that ~ 15% of remaining wetland area has retained high ecological values (Water and Rivers Commission, 2001).

In 2004, the WA Environment Protection Authority developed the 'Draft Environmental Protection (Swan Coastal Plain) Policy and Regulations 2004' to protect wetlands of high ecological value on the Swan Coastal Plain (EPA, 2004). This policy classified remaining wetlands according to their ecological values into a three-tier system (Table 2). For the purposes of the BAPC Wetlands project, high-value wetlands have included conservation and resource enhancement categories.

Table 2: WA State wetland management categories, descriptions and objectives

Management Category	General Description	Management Objectives
C – Conservation	Wetlands support a high level of ecological attributes and functions.	Highest priority wetlands. Objective is preservation of wetland attributes and functions through various mechanisms including: • reservation in national parks, crown reserves and State owned land, • protection under Environmental Protection Policies, and • wetland covenanting by landowners.
R - Resource enhancement	Wetlands which may have been partially modified but still support substantial ecological attributes and functions.	Priority wetlands. Ultimate objective is for management, restoration and protection towards improving their conservation value. These wetlands have the potential to be restored to conservation category. This can be achieved by restoring wetland structure, function and biodiversity.
M - Multiple use	Wetlands with few important ecological attributes and functions remaining.	Use, development and management should be considered in the context of ecologically sustainable development and best management practice catchment planning through landcare.

*After Hill *et al*. (1996).

The regulatory impact statement for this proposed regulation concluded that:

> "an EPP is a necessary component of a broader package including incentives, land purchase, and education/information."

There was strong community opposition to this proposed policy, as it required all conservation category wetlands to be fenced, with very restrictive guidelines regarding future use or development.

2.2.3. Gingin Shire

The Gingin Shire (Figure 3) contains a wide range of wetland types. The most important influences on wetland type are hydrology, land use practices (such as whether the land has been cleared, and grazing intensity) and soil type. Wetlands range from relatively permanent wetlands to highly ephemeral wetlands that may only be filled once in ten or more years. Other wetlands may be filled in most years but dry relatively quickly. Vegetation ranges from open water wetlands to densely forested paperbark wetlands. Despite the high degree of biophysical variation, the management influences of importance are relatively consistent. Similarly, the private values (mainly conversion to grazing or management for personal recreation and enjoyment) and public values (native animal and bird habitat, biodiversity, native flora, aesthetic values and potential recreation values) are relatively consistent across Gingin wetlands. Approximately 9000 hectares of wetlands are located on private land in the Gingin Shire (Figure 3).

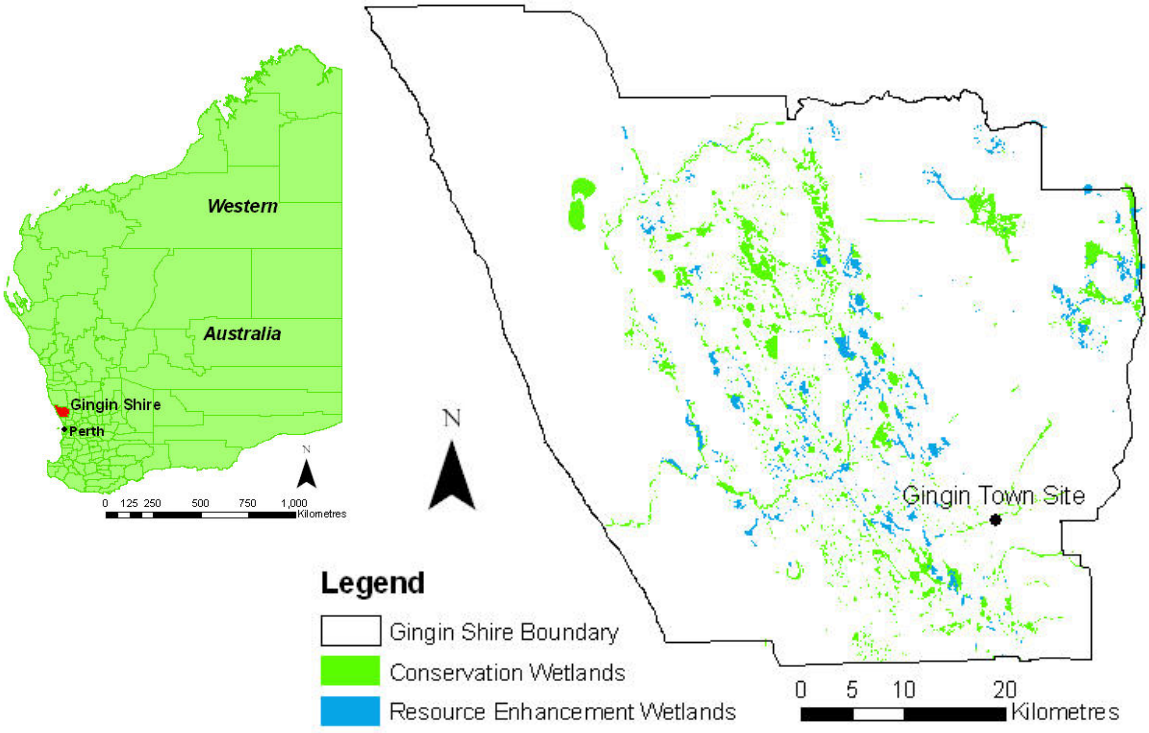

Figure 3: Map of the BAPC Wetlands project area (Gingin Shire). Extent of remaining high-value wetlands is shown.

Many of the wetland and remnant vegetation areas are degraded due to a combination of grazing by domestic livestock, alteration of hydrology, and mild impacts of rising salinity. Wetlands and buffer strips contain a large variety of vegetation types and habitats that are important for flora and fauna diversity. Typical Gingin wetland vegetation includes paperbark species, sedges, native aquatic herbs, reeds and rushes. Some wetland areas

are also naturally non-vegetated. The variety of wetland habitats in the Gingin area creates a mosaic of aesthetic appearances and increases the range of habitats available to fauna and flora species.

A gradient of native flora resource condition can be identified in the region. Initial grazing usage of land displaces native fauna with domesticated stock. As stocking intensity increases, the mix of flora species in wetlands changes and is gradually degraded. Management of native flora in wetlands and remnant vegetation is a key factor in maintaining biodiversity. An unimproved mixture of native and introduced species, usually dominated by annual grasses, dominates agricultural pastures in the Gingin Shire. Much of the pastures in the region have been 'improved' (by the addition of pasture species, fertiliser and weed control) to feed a greater number of livestock.

Wetlands in the Gingin area provide habitat for a wide range of water birds, other bird species, mammals, reptiles, and to a lesser extent, fish and crustaceans. The region is also rich in terrestrial and aquatic invertebrate species. Wetlands in the region provide habitat for both local and migratory water birds as well as being an important drought refuge in southwest Australia.

Domestic and feral species are also important agents in many of the biophysical relationships in wetlands. Feral species such as rabbits, foxes and cats are a particular threat to water bird populations via either predation or competition for food. Many wetlands that remain are subject to continuing pressures and threats posing barriers to natural ecological succession. The most important of the pressures and threats on wetlands are pest and weed invasion and domestic livestock grazing. These threats also impact on species dependent on multiple habitats, particularly if these habitats are separate 'islands'. Other pressures result from the reduced connectivity of both water and habitat between these wetlands and remnant vegetation islands. Finally, the historical reallocation of resources from wetlands to agricultural uses has unintentionally increased the influence of salt on the landscape due to increased allocation of water to groundwater systems, and large scale clearing of native vegetation higher in the catchment.

3. Methods

3.1. Project development and management

WWF-Australia is the nation's largest environmental non-government organisation, with clear systems of corporate governance in place and a well-established financial and operational management system. WWF-Australia is renowned for its ability to deliver complex projects, and has a long history of coordinating on-ground projects for Natural Resource Management (NRM) Groups, as well as State and Federal governments. The market-based instrument (MBI) pilot project 'Auction for Landscape Recovery' is one such project.

The Western Australian Farmers Federation (WAFF) initiated project discussion in Western Australia with reference to the Native Vegetation Regional Pilot Projects Initiative (NVRPP). WWF wetlands manager, Christina Mykytiuk, developed a project proposal focusing on wetlands on private agricultural properties in the Gingin area. Once funding was secured, a project manager, Michael Roache, was recruited to implement the project. The project manager was based at a landcare centre close to the project area to facilitate

project delivery and ensure personal contact with the local community and participating landholders. Support from the Chittering Landcare staff, including office space, materials, and existing contact networks, was invaluable in establishing and running the project. Regular contact with staff from the Perth WWF office and from DAFF staff in Canberra ensured that the project was implemented according to the project schedule, with delivery of all milestones on time and within budget.

3.2. Project scope and roll-out

3.2.1. Scope

The BAPC wetlands project operated in the state of Western Australia, and within the Southwest Australia Ecoregion (Figure 1), Australia's only terrestrial global biodiversity hotspot. The geographic scope of the project was limited by the boundary of the Shire of Gingin (Figure 3). Within the shire, the project was focused on agricultural properties with high conservation value wetlands on them. These are wetlands that have been listed by State agencies as 'Conservation' or 'Resource Enhancement' wetlands (Figure 3, Table 2).

The aim of the Western Australian pilot was to develop and trial an incentive and advice approach to engage landholders in improving conservation outcomes in wetland areas that remain part of production systems. The geographic scope for achieving this aim was defined by several factors:

- The Southwest Australia Ecoregion is Australia's only global biodiversity hotspot, and thus merits the attention of several WWF biodiversity conservation projects.
- The extent of wetlands on the Swan Coastal Plain (of which Gingin Shire is part) has been decimated since European settlement. Only 20% of original wetlands remain uncleared or unmodified.
- Many of the wetlands that remain are found on private land. In the Gingin Shire, this proportion is particularly high, with approximately 50% of all high-value wetlands occurring on private land.
- As a pilot project, limited funding meant having to restrict the number of landholders that could be engaged in the project. Calls for expressions of interest had to be limited accordingly.

For these reasons, the local government boundary of the Shire of Gingin was set, somewhat arbitrarily, as the geographic scope for the BAPC Wetlands project.

3.2.2. Steering Committee

A steering committee was established to guide decision making and implementation of the BAPC wetlands project. In undertaking this work, the committee gave due regard to:

- The project objectives;
- The key project milestones and their scheduled completion dates;
- The many stakeholder groups involved with or affected by the project;
- Balancing the needs of landholders with conservation outcomes;
- Sharing the costs of native vegetation management between landholders and the Australian Community;

- Improving integration of production and environmental management activities for wetlands on farms;
- Establishing a farm systems approach to natural resource management incentives which encourages best-practice land and conservation management beyond duty of care.

The steering committee consisted of:

- Incentives Coordinator - Northern Agricultural Catchments Council (NACC)
- Manager - Gingin Brook Conservation project
- Representative - WA Farmers Federation (WAFF), WA Property Rights Association (WAPRA), and Gingin Landholder
- Representative - Gingin Shire Council, Gingin Land Conservation District Committee (LCDC), and Gingin Landholder
- Project administrator - Australian Government Department of Agriculture, Fisheries & Forestry (DAFF)
- Wetlands Program Manager - WWF
- BAPC Wetlands Project Manager – WWF

3.2.3. Identification of Priority Wetlands

An existing database of wetlands on the Swan Coastal Plain (Water and Rivers Commission, 2006) was used to identify high-value wetlands in the project area. This database consists of wetland boundaries and associated attribute data. This dataset was invaluable in determining the target wetlands for the project. It is anticipated that such a project could not function efficiently without such a database. A state database of shire cadastre and street addresses was also obtained from the state agency 'Landgate'.

GIS analysis was undertaken to establish which high-value wetlands occurred on private land within the shire. A table of street addresses linked to these wetlands was used as a landholder mailing list.

Project brochures were sent out to street addresses, but the bulk of these were returned as invalid, either because there was no residence at the address, or the residents use a post office box in Gingin or Perth. Furthermore, there was a very low response rate from those brochures that were not returned. Thus we relied for the most part on existing networks and word of mouth. It is unclear how many landholders saw the project advertised in local newspapers, but none of the participating landholders mentioned this as the means by which they heard about the project.

3.3. Landholder engagement

In general, incentive programs will be effective only if landowners see how participation will serve their interests. The type of incentive programs we offered either rewarded choices that were consistent with balancing production and conservation, or removed barriers to adopting sustainable agricultural management that included conservation outcomes.

Objectives

- To engage landholders with wetlands on their property in best practice management
- To foster trust and communication between landholders and the delivery organisations

Guiding principles

- Be punctual
- Maximise direct face-to-face contact
- Consider the landholder's perspective
- Provide clear information
- Ensure continuity of contact
- Document all phone calls, site visits and communications

Landholder contact sequence

1. Media release in local newspapers
2. Mail-out of project information and incentive options to targeted landholders
3. Community information day
4. Respond to landholder enquiries
5. Site visits: discussion of project and options
6. Site assessments
7. Project progress media release
8. Management plans prepared and signed
9. Project progress media release
10. Contractors engaged and works implemented
11. Follow-up site assessment and landholder evaluation

3.4. Incentives and extension services

Objectives

- To foster and encourage long-term whole-property management changes (rewarding stewardship)
- To recognise landholder initiative, rather than dictate terms
- To provide 'seed' funding that acts as a trigger for landholders to implement work using significant quantities of their own time and/or money
- Incentives must be flexible, meet broad conservation needs, and be easy to understand, administer, and implement
- Increase skill or knowledge within the community for biodiversity conservation as part of sustainable land management

Guiding principles

- Incentives and extension services should be:
    - simple and cost-effective
    - efficient, equitable, transparent and accountable
- Costs and risks should be shared

3.4.1. Extension Services

The project focused on providing extension services to landholders with wetlands on their property. The development of a whole farm management plan (or enhancement of an existing plan) was to be the central focus of working with landholders. These plans were to assist the landholder to continue to manage their property sustainably, well beyond the life of the project.

Table 3 outlines extension services offered through the BAPC Wetlands project. Services were offered individually, or in combination, depending on the needs of the landholder and their property.

Table 3: List of extension services offered by BAPC project

Extension Service
Property Visits by Project Manager
Wetland assessment
Whole farm management planning (see below)
Discussion of wetland values
Training and Workshops
Community open day, including project introduction and presentations by agricultural consultants covering whole farm planning, benefits of wetlands, grazing management etc.
Project BBQ and site visit at one of the project properties
Property Assessment
Soil and water testing, pasture condition assessment, fauna and flora surveys
Whole Farm Management Plan
Agricultural consultant to work with project manager and landholder to develop comprehensive long-term plan
Professional advice to help develop an Environmental Management Strategy (EMS)
A0 (poster) size aerial photo of property
Agricultural Management Software
FarmMap – Stand-alone mapping software
FarmBook – Planning and management software

3.4.2. Financial Incentives

Financial incentives were used to augment the provision of extension services. The focus was on sustainable land management works that provide either direct or indirect tangible benefits for wetlands and agricultural land. Due to limited funding, emphasis was placed

on sharing costs to ensure equitable and fair public versus private expenditure. Subsidies were tied to the commitment of the landholder to a binding management agreement.

The project operated on an 'inputs' rather than an 'outcomes' basis. That is, contracts were phrased in terms of management actions with expected outcomes. Strict compliance with the contracts was in terms of on-ground activities rather than the expected gains themselves.

Table 4 outlines financial incentives offered through the BAPC Wetlands project. Incentives were offered individually, or in combination, depending on the needs of the landholder and their property.

Table 4: List of financial incentives offered by the BAPC wetlands project

Financial Incentive
Fencing
$3,000/km for fencing of sites <20ha
$3,500/km for fencing of sites between 20 & 50ha
$4,000/km for fencing of sites >50ha
Additional Watering Points (off-wetland)
Combination tank and trough, or similar - 70% subsidy
Pasture Improvement
$85/ha for establishment of perennial pastures

There were many incentives on offer that were not of interest to the participating landholders. These included property management plans, covenant payments and farm management software. Weed and pest control were also not seen to be useful incentives. For example, the cost of chemicals for weed control is negligible compared to the time a landholder would need to apply it. Furthermore, salinity is not a significant issue on the Swan Coastal Plain. Incentives to manage salt land may be useful in the Wheatbelt or other heavily cleared areas of Western Australia, but not in the current project area. However, one landholder opted for a financial contribution towards a shallow drain on part of his property as a production offset for fencing his wetlands. The drain was set in place to divert shallow groundwater that impacts on pasture production in a nearby paddock.

3.5. Funding

Guiding principles

- Keep assessment process and cost-sharing guidelines transparent
- Ensure access to funding is equitable
- Increasing support with increasing commitment from landholders
- Maximise environmental outcome for the funds invested
- Articulate the social and private benefits of each incentive

Management agreements and payment levels were negotiated with each individual landholder. Negotiation allowed for a mutually acceptable contract to be reached that reflected each landholder's opportunity costs. The upper limit of funding for each property

was notionally set at $25,000, allowing the participation of a minimum of five properties. This level of funding was only spent if the property met suitable wetland size and conservation value criteria.

If payments are only for a temporary period of time, there is a risk that the benefits gained will cease with the payments. One way of dealing with this problem is to arrange to have other forms of protection, such as a covenant, placed on the property to ensure on-going protection and management of the land. Alternatively, a whole property management plan can be set in place, fostering long-term landholder action.

If the project is expected to yield net benefits then the second step is to determine what proportion of the costs and benefits accrue to individual landholders as a basis for cost sharing. The maximum level of a payment to a landholder should reflect the gap between social and private benefits (Table 5).

Table 5: Array of wetland values in the Gingin area

Pure Private Values	Private and Social Values
Grazing production	Flora and fauna values
Firewood and timber production	Aesthetic values
Water supply	Existence values
Drainage storage/basin	Flood mitigation
Tourism	Water quality benefits
Recreation	Groundwater recharge
Hunting	Ecosystem values (e.g. carbon sequestration)

The full amount of the social benefit does not need to be paid. The aim should be to give the amount needed for the landholder to change their farming management regimes so that they can farm sustainably within the context of regional targets, priorities and State legislation. This is because limited public funding requires a commitment to maximise the environmental outcome for the money invested. As it is difficult to determine both the private and social benefits and costs of an action, “rules of thumb” have been used to guide cost-sharing. In many cases, funding levels have been set to match a complementary incentives program in the area coordinated by the Northern Agricultural Catchments Council (NACC). NACC’s Targeted Investment Program (TIP) is funded through the National Action Plan for Salinity and Water Quality (NAP), and has set funding rates for activities such as fencing and native revegetation. Where appropriate, these rates have been used for the BAPC Wetlands project to ensure funding consistency across the region.

An approximation of cost-sharing ratios for the BAPC Wetlands project is outlined in Table 6 showing the percentage of each activity to be funded by the project, and the expected in-kind contribution from landholders.

Table 6: Approximate cost-sharing ratios for management activities

Extension Service or Incentive	Funded/In-kind Ratio
Property Visits by Project Manager	100/0
Training and Workshops	100/0
Property Assessment	70/30
Whole Farm Management Plan	100/0
Agricultural Management Software	70/30
Native Revegetation	70/30
Fencing	70/30
Weed Control	40/60
Pest Control	40/60
Additional Watering Points (off-wetland)	70/30
Pasture Improvement	40/60
Saline Land Management	40/60

3.6. Trial area wetlands

Wetland evaluation is the process of assessing the level of significance of a wetland. An appropriate management category is assigned to the wetland based on the evaluation, which provides guidance on the nature of the management and protection the wetland should be afforded. Classification systems are based on a range of characteristics of individual wetlands including size, condition, physical, hydrological and biological functions, and human use attributes. The system in use in Western Australia is outlined in Table 2.

During discussion with the project steering committee, it was established that there are no Ramsar-listed wetlands in the Shire of Gingin. Thus it was agreed to target conservation category wetlands, these having the highest state priority for conservation. It was anticipated that despite their conservation category listing, many of these wetlands are currently subject to agricultural activities and will benefit from focused funding that aims to foster long-term sustainable management. Through the course of the project, it was discovered that many resource enhancement category wetlands on properties visited were also worthy of project inclusion. Thus “high-value” wetlands are taken to include both management categories.

Of more than 38,000 ha of mapped wetlands in the Gingin Shire, ~ 20,000 ha (2,170 wetlands) are listed as high-value (Table 7). Of these, ~ 9,000 ha (826 wetlands) are on or intersect private land. This represents nearly 25% of all wetlands in the Shire.

When high-value wetlands on private land in the Gingin shire are grouped into size classes, it is clear that large wetlands (> 10 ha) account for the bulk of this area (7,880 ha,

or ~ 83%), while wetlands between 1 and 10 ha account for 1338 ha (~ 16%), and those < 1 ha account for 112 ha (~ 1%) (Table 7).

Table 7: High-Value Wetlands in Gingin Shire

Feature	Number	Total Area (Ha)
Shire of Gingin		320,748
All High-Value* Wetlands	2,170	19,652
High-Value Wetlands on Private† Land	826	9,330
Private High-Value Wetlands by Size Class		
High-Value Wetlands > 10 Ha	187	7,880
High-Value Wetlands < 10 Ha & > 1 Ha	409	1,338
High-Value Wetlands < 1 Ha	230	112

* Conservation and Resource Enhancement wetlands. Areas, boundaries and classifications may not be accurate.
† Freehold or leasehold.

To categorise the high-value wetlands on private land in Gingin by type, sumplands account for ~ 31% of this area, palusplains ~ 21%, damplands ~ 19%, floodplains ~ 14%, and lakes ~ 8% (Table 8).

Table 8: High-value wetlands on private land in Gingin by wetland type

Wetland Type	Area (ha)	% Area	Number
Sumpland	2854	30.59	327
Palusplain	2004	21.48	161
Dampland	1739	18.64	231
Floodplain	1338	14.34	56
Lake	703	7.53	46
Other	692	7.42	5
TOTAL	**9330**	**100.00**	**826**

The wetlands incorporated in the BAPC Wetlands project are broadly representative of wetland type distribution in Gingin Shire (Table 9).

Table 9: Range of wetland types incorporated in BAPC Wetlands project

Landholder	Wetland Types
Ross Collard	Sumpland, Lake, Dampland
Sam Collard	Sumpland, Palusplain
Brad Alp	Palusplain, Sumpland, Dampland
Phil Barrett-Lennard	Sumpland, Lake
Wayne Fewster	Sumpland, Lake
David Hodby	Sumpland
Rob Harris	Floodplain

Priority was given to larger wetlands, in order to maximise the anticipated benefits of the project. However, properties with multiple smaller wetlands were also candidates for project inclusion, given their potential for consolidation through revegetation in the future. Furthermore, it was anticipated that wetlands that fall entirely within a single property were most suitable for funding, rather than wetlands that span property boundaries. This avoided the potential difficulties of liaising with multiple owners of a wetland who may not have formed a consensus regarding wetland management.

3.7. Development of management plans

The contracts for the BAPC wetlands project took the form of voluntary management agreements (VMAs). These agreements are essentially 'good will' documents between parties, and have limited legal weight. This suited all participating landholders, who were generally unwilling to enter into more binding contractual or covenant agreements. Incorporated into the VMAs was a suite of property information, serving as a summary assessment of the property, a property management plan, an outline of landholder actions and obligations, and a vision for the long-term sustainability of the property, both in terms of production and conservation.

The VMAs were produced by the project manager in consultation with each landholder, and consisted of the following sections:

- Vision
- Introduction
- Description of property
    - Including area, topography and soil, vegetation, rare and unusual flora, weeds, native fauna, feral animals, impacts from agriculture
- Current nature conservation value of the property
    - Including Vegetation condition of each of the wetland areas
- Water quality table
- Current management issues
    - Including fencing, nutrients, salinity, revegetation, water management and weed management
- Summary of aims, activities and costs relating to the agreement
- Management action timeline
- Monitoring plan
- Property map
- Site maps for proposed works
- 20-Year property vision
    - Including remnant vegetation in the area surrounding the property, and a map of potential revegetation areas on the property, with an emphasis on corridors and buffers to link and expand existing areas of native vegetation.
- Flora and fauna species lists
- Site photos
    - Including photo points established during the project
- Additional notes relating to management actions

    - Including grazing and stocking rates, wetland management, benefits of wetland management, windbreaks and shelterbelts, native vegetation management, and benefits of native vegetation management.
- Agreement between parties (WWF-Australia and the landholder).

3.7.1. Management Considerations

There were very clear agricultural impacts on most of the wetlands surveyed. Those that were already fenced showed signs of agricultural impact only at their fringes, while those that were unfenced suffered a range of impacts. Principally, by allowing their stock to graze within wetland areas, landholders prevent the regeneration of a whole range of native wetland vegetation, including trees, shrubs, sedges and herbs. This has a dramatic impact on the condition of an area, altering the structure of the native vegetation, promoting the spread of weeds, and degrading the natural habitat qualities of the wetland. Moreover, water quality is generally affected by stock entering a wetland, through sediment disturbance, removal of fringing vegetation, high nutrient inputs and resulting algal blooms and worm infestations. The clearing or grazing of vegetation in wetlands can also lead to rising salinity, either in the water body itself or as scalds on the ground.

Weed invasion into wetland areas is greatest when the native vegetation has been cleared, grazed, or otherwise disturbed, and occurs even in well-fenced areas due to wind- or animal-borne seed movement. Weed cover is usually greatest in the most disturbed sites, and is often comprised of pasture species that are encouraged elsewhere on the property.

Wetlands in the Shire of Gingin are often isolated remnants of vegetation in an otherwise cleared agricultural landscape. Such isolation serves to reduce the quantity and diversity of fauna that inhabit or visit these sites, resulting in a depauperate community. The smaller the fragment of habitat, and the greater its isolation, the greater is the impact of those factors on the flora and fauna communities.

Grazing productivity is reduced where improved or unimproved pasture is converted to wetlands or native vegetation. Similarly, grazing productivity is reduced in rehabilitated wetland and remnant vegetation areas because these areas are assumed not to be grazed except for very short periods during drought conditions. Where stock are excluded from wetlands they may also be excluded from their current water supply. Alternative water supplies are required in these cases. The cost of alternative watering supplies varies according to the additional infrastructure required (including pumps, pipes and tanks), the number of watering points to be installed and the distance from a water source.

It is apparent that many farmers recognise the benefits of native vegetation, and specifically wetlands, on their agricultural properties. The shelter that remnant vegetation provides stock, particularly newly-shorn sheep, is a valuable service. The benefits of diverse remnant vegetation as habitat for all manner of birds and insects beneficial to agricultural properties are well documented. Many native insects and birds prey on harmful agricultural pests, and healthy wetlands form valuable habitat for these beneficial animals. It is also clear that wetlands can act as filter systems for on-farm water. Native sedges, rushes and submerged plants remove nutrients from runoff and improve water quality, creating an important reserve water supply in times of severe drought. The presence of

remnant vegetation on agricultural land can also improve pasture productivity, by acting as wind breaks, and reducing evaporative water loss across fields, or preventing the build-up of salinity in the soil surface and subsurface.

It has also been noted by several landholders that there are recreation and aesthetic benefits to be gained from healthy wetlands on agricultural properties. Swimming holes, the presence of wildflowers, bird and frog activity, and an enhanced sense of place are just some of those benefits. Such areas of remnant vegetation may also improve the sale value of the property in the future. Healthy native vegetation is often viewed as an indicator of good property management and healthy soil, rather than lost production capacity.

Fencing plans that break the property into small (~ 20 ha) paddocks, accompanied by stock rotation management methods that reduce impact on any one part of the property, are the first steps in better grazing farm management. Paddocks can then be fenced according to soil type, and pasture planting and fertiliser programs planned accordingly. Often, the land around wetlands is good grazing land, thus fertiliser applications can be minimised in these areas, thereby reducing chemical impacts.

The simplicity of excluding stock from wetlands by fencing should result in great improvements to the condition of fenced areas, depending on the initial state of degradation, and the size of the area. Larger areas will tend to be more resilient, with a greater capacity for regeneration. In combination with the planting of deep-rooted perennial pastures, and a well-planned watering system that encourages stock away from sensitive areas, these management practices can go a long way to improving overall property condition.

Fencing will be seen to be the principal activity by which landholders demonstrate their good environmental management. It is by far the most obvious action, and will have ramifications that remain visible into the foreseeable future, in terms of retaining and enhancing remnant vegetation.

3.8. Predicting and monitoring native vegetation outcomes

Vegetation condition assessment was performed using the National Vegetation Information System (NVIS) (ESCAVI, 2003). This system incorporates a vegetation attribute framework that includes nationally consistent data attributes and standards. Data compiled into the NVIS dataset includes both native and exotic plants, as well as vegetation structure (height and cover), and floristic composition. The Perth Biodiversity Project's (PBP) Natural Area Initial Assessment (NAIA) template was also used to record site information at each wetland. In addition, a condition scale in use for all of Perth's conservation estate bushland (Keighery, 1994) was used to assign a condition rating to each wetland area (Table 10). These baseline data were recorded for each wetland included in the project. While the project timeframe did not allow for repeat measurements, it is anticipated that anyone returning to these sites in the future will be able to follow the same protocols in order to assess the changes to native vegetation condition that have occurred since the first collection of data.

Table 10: Standardised scale used to assign condition ratings to project wetlands

Condition Scale	Description
Pristine (1)	Pristine or nearly so, no obvious signs of disturbance.
Excellent (2)	Vegetation structure intact, disturbance affecting individual species and weeds are non-aggressive species.
Very Good (3)	Vegetation structure altered obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and grazing.
Good (4)	Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and grazing.
Degraded (5)	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by frequent fires, the presence of very aggressive weeds, partial clearing, dieback and grazing.
Completely Degraded (6)	The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. These areas are often described as “parkland cleared’ with the flora comprising weed or crop species with isolated native trees or shrubs.

*After Keighery (1994)

3.9. Landholder feedback

Once most of the on-ground works were complete, landholders were interviewed about their experience of the project. These interviews were recorded and subsequently transcribed, and are the source of all the landholder quotes used in this report. The interview process was based on the most significant change protocol developed by Dart and Davies (2003). This method is a participatory interpretation of stories about ‘change’ as a means of monitoring project success rather than using predetermined quantitative indicators. The interview questions focused on the landholder’s experience of the project, whether good or bad, and their thoughts and suggestions for the future of projects like BAPC Wetlands.

4. Results

4.1. Participation rate and the properties

In 2004, the Western Australian Environmental Protection Agency (EPA) drafted the *Environmental Protection (Swan Coastal Plain Wetlands) Policy*. Release of the draft policy caused considerable concern among landholders and residents of rural areas within the Swan coastal plain. There were criticisms and protests, and allegations that the policy was both inequitable and poorly conceived. There was considerable community concern that the methods of definition used were too coarse and were applied without sufficient rigour. Only conservation category wetlands were supposed to be included in the draft policy. Mapping of these wetlands was up to 16 years old at the time of draft policy release. Ground-truthing of some of the mapped sites by the West Midlands Natural Resource Group (Borger, 2005) showed that some of the sites did not satisfy the criteria necessary to classify a wetland as conservation category.

In response to the proposed policy, many landholders feared the erosion of property rights. The policy would have placed restrictions on the use of high-value wetlands on private property, requiring landholders to fence them and exclude livestock. Many landholders saw this as a "land-grab" by the State Government, and opposed the policy vehemently. Uncertainty regarding the Government's intentions remains an issue in Gingin today. As a result, many landholders are wary of any suggestion that they fence their wetlands in the interests of conservation. The prevailing attitude is that some loss of property rights is bound to accompany any such undertaking that uses government funding.

Many of the landholders participating in the BAPC Wetlands project do not share these concerns, having previously undertaken conservation work on their properties, either using Envirofunds money, or their own. These progressive landholders act as champions for the 'soft', or incentives-based, approach to land conservation on private property, setting an example for the rest of the community. The more landholders that become involved in the project, the greater the impact on nearby landholders who will see the benefits participating landholders receive without the feared repercussions.

"An eyeful's better than an earful."[1]

Of the seven landholders engaged in the project, all but one were engaged through existing networks in the project area. Some landholders heard about the project through more than one channel. This is reflected in the total number of landholders in Table 11.

[1] Quotes from participating landholders appear in green throughout the text of this report to reinforce certain arguments.

Table 11: Method of introduction to the BAPC Wetlands project

Project Introduction	Number of landholders
Workshop attendance	1
LCDC recommendation	1
Brochure in the mail	2
Talked to participating landholder	3
Talking to steering committee member	2
Referral from other project	1
TOTAL	**10**

The landholder referred from another project ended up not participating. He intended to fence two small areas of wetland, and did not have the time nor the inclination to follow through with the funding application or the voluntary management agreement processes.

Most of the participating landholders have been farming in the area for many years. In fact, many are second or third generation farmers in the Gingin area. There is also a strong support network amongst many of them, facilitating discussion about all matters agricultural. They are aware of the benefits of rotational grazing and perennial pastures. That said, there are matters in which they profess to need new knowledge, such as the ecology and management of wetlands, or farm hydrology. As the project manager was not an agricultural expert, his role fell to that of wetland conservation, providing advice on matters of ecology, and how they might be balanced with farm production.

Many of the project landholders have undertaken some kind of conservation work on their properties before the BAPC project. This includes fencing of wetland and creek areas, and planting of native vegetation. Envirofunds have been used by some landholders, another was assisted by the local Landcare Centre, while others paid for the work themselves. Most landholders stress the financial difficulties of undertaking conservation work, particularly in very dry years when resources and labour are at a premium.

Many of the properties involved in the project are hydrologically connected. This adds to the conservation significance of what would otherwise be a series of smaller, disconnected wetland projects. The fact that landholders can work together, feel a sense of community achievement, and that the hydrological flow is maintained along a significant stretch, are all excellent outcomes for the project, and for wetlands in Gingin. Two of these properties encompass large and regionally significant water bodies: Crane's Neck Lake and Beermullah Lake. Both of these sites are used as feeding sites by thousands of water birds each year, and their protection from livestock will ensure the long term viability of these sites.

> "…I think the other good thing around here is we've got probably three or four neighbouring farms that are all involved in this project or have done other things, so we're really starting to link it all up, too."

One of the project properties does not have wetlands with high conservation value. They are heavily grazed, with little understorey remaining, and one is infested with weeds. While there is some capacity for these to regenerate once livestock are excluded, the aim of engaging these landholders was to engender trust, and set a good precedent so that they

would consider changing their management activities on a nearby property. This second property is renowned for its large and valuable wetland, but the landholders were reluctant to take the project manager there because they value the grazing production it provides. Interestingly, the father of this family read one of the project media releases in the local newspaper, and this prompted him to reconsider his management of the second property.

Covenants are still very much feared in Gingin. Despite the offer of cash payments, not a single landholder was interested in placing a covenant on part of their property. Despite vowing never to run livestock in a particular wetland again, the argument of one landholder for not taking the cash payment was that it did not match potential production earnings. There is little logic to this argument, again highlighting the fear that placing restrictions on the property title may have some unforeseen consequence in the future.

> "….if people put covenants on their titles, I think that gets people pretty scared. So I think having funding rounds and funding schemes that just commit to an agreement about this is how we'll manage the land over the next 10 years or so is a really good way to go."

4.1.1. Participating Properties

Several of the project properties are hydrologically connected, and form part of the Beermullah Lake system (Figure 4). The other properties are scattered elsewhere in the Shire (Figure 5). The extent of project fencing in the Shire is shown in Figure 6.

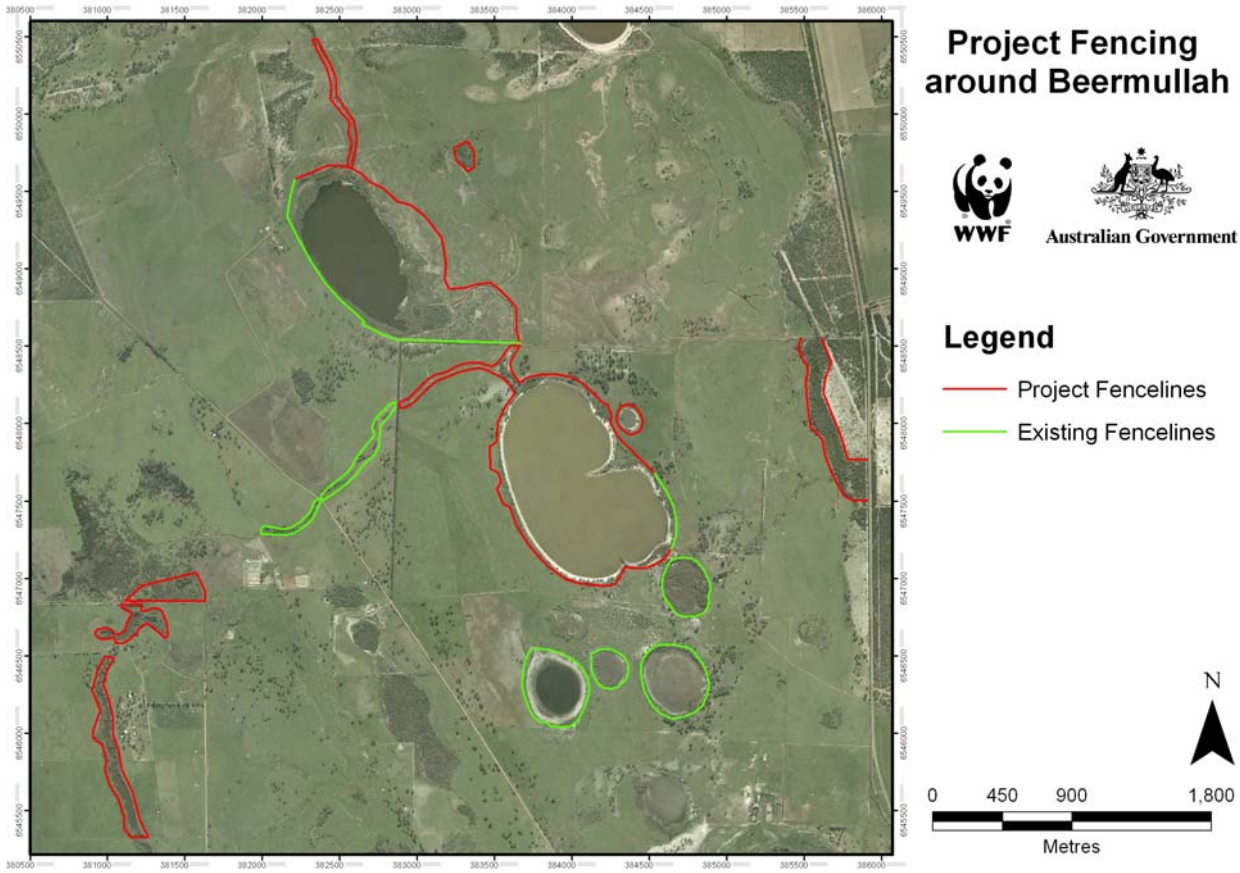

Figure 4: Fencing on properties around Beermullah Lake

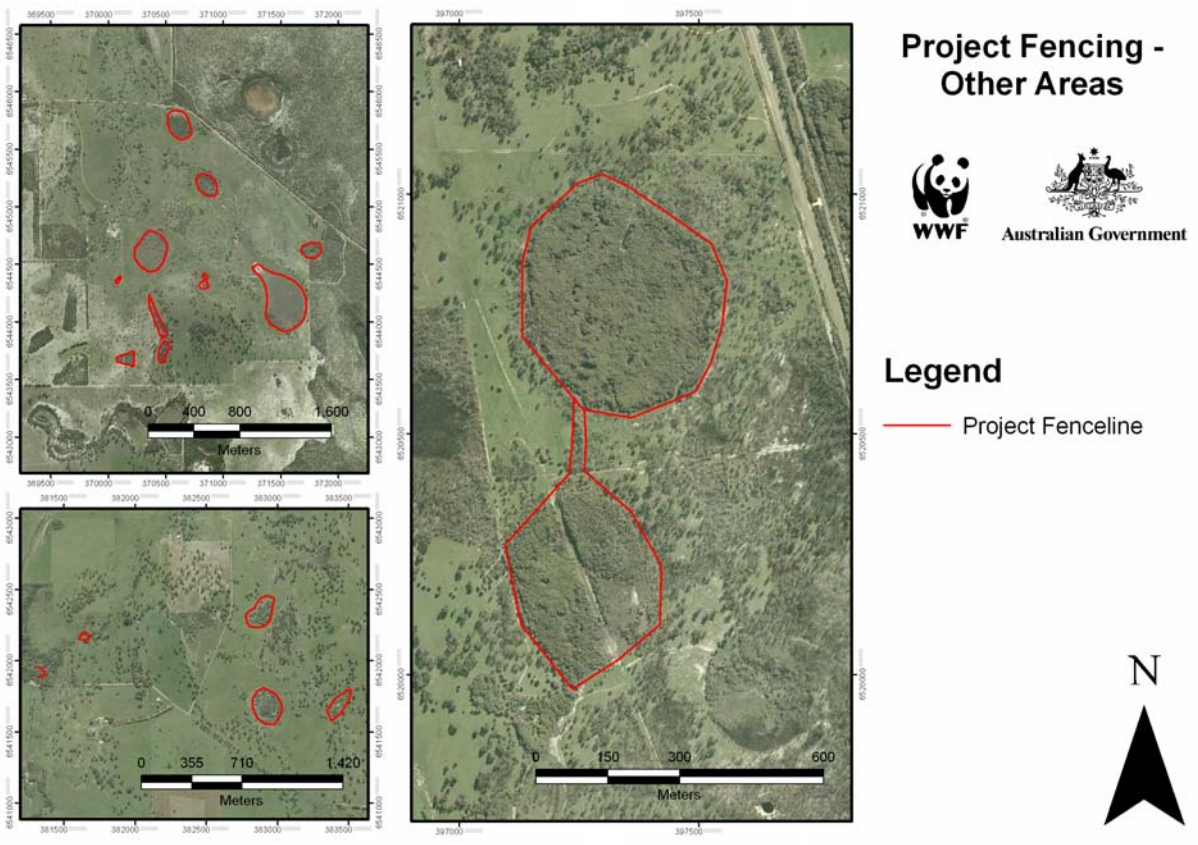

Figure 5: Fencing on properties elsewhere in Gingin Shire

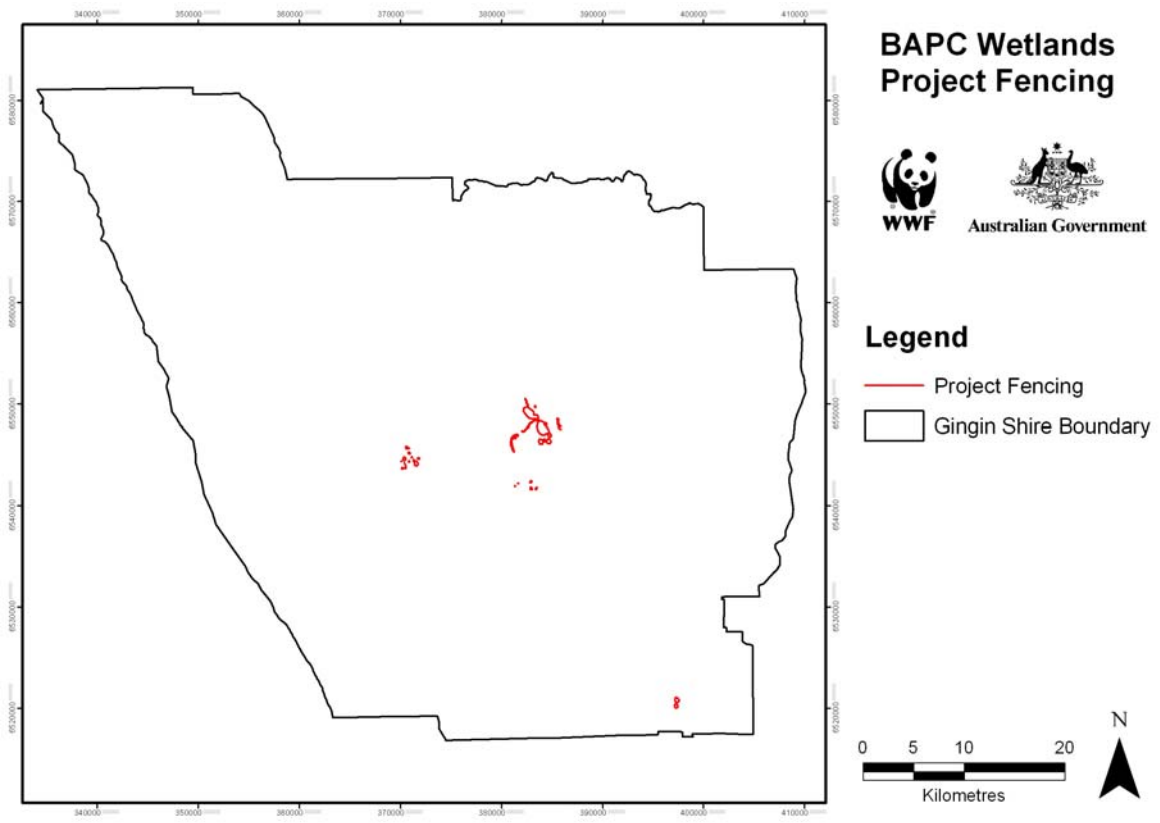

Figure 6: Project fencing in the context of Gingin Shire

Figure 7: A sumpland on the Alp property

Figure 8: Beermullah Lake on the Barrett-Lennard property

Figure 9: A dampland on Ross Collard's property

Figure 10: A palusplain wetland on Sam Collard's property

Figure 11: Crane's Neck Lake on the Fewster property

Figure 12: A floodplain wetland on the Harris property in Summer

Figure 13: A sumpland on the Hodby property (Photo by Christina Mykytiuk)

4.2. Expected native vegetation outcomes

By fencing wetlands to exclude livestock, it was anticipated that significant changes to native vegetation condition would follow, particularly in those wetlands that are currently degraded. Reduction of soil compaction, reduced nutrient loads and grazing pressures, and reduced transport of exotic plants into wetland areas, will all contribute to improved wetland and native vegetation condition.

While fencing wetlands and providing livestock with off-wetland watering points are important steps in managing native vegetation condition in wetlands, these areas require ongoing action to control feral animals and weeds, manage fire risks and maintain additional fences. Although there will be some natural capacity in these wetlands to self-regenerate, ongoing management intervention will be required.

4.3. Landholder feedback about the process

The feedback from participating landholders regarding the project was generally very positive. Many landholders felt that the project fast-tracked work that otherwise may not have been completed due to time or funding restrictions.

> "….it's probably encouraged us to actually fence off more land. Certainly it's been great for us because we've a lot of it to do and

> we've been able to just come in and say yeah, let's do the vast majority of it which might have been five to 10 years work, maybe more without this project. So yeah, I mean we're blessed that this project came along for our wetlands. And that's the exciting bit, that we just know that bang, we've really just accelerated the whole thing and I know even in two years it will be looking completely different. Whereas without it, it would just be continuing degradation."

The project also encouraged landholders to undertake work on a greater scale, and with greater conservation benefits, than if they had had no planning or management input from the project manager.

> "…(the project) has given me a huge incentive to get out there and do a lot more. And with the funding like the tank and the troughs and the mapping and whatnot, has definitely given me more incentive to carry on and do more too."

Participating landholders were generally reluctant to take a 'handout': project payment without some form of contribution from the landholder themselves. In some cases this may have been a matter of pride, but in others it reflected a genuine willingness to contribute to improved land management, recognising that while wetlands can provide some public benefit, there were obvious private benefits from the funding this project provided.

> "…I think that incentive to pay for the materials and then the farmer to do the in-kind work with the labour, I think works well."

Many landholders commented that the BAPC Wetlands project filled a gap in landcare activity in the region, and provided the impetus for action as well as raising awareness of important conservation issues.

> "It's also important in Gingin is we haven't had a strong Landcare movement in the past, not like a lot of areas in the wheat belt. So having a project like this has been really good. There's been a few Envirofunds in the last five years and probably prior to that there's been very little work, there's been the odd little project and the LCDC has existed but not done a lot. So yeah, it's been good for the district, I think, to have a project like this."

Perhaps the most common criticism of the project was its limited scope, both in terms of time and money. Landholders recognised that the nature of project outcomes may be unclear for several years, and they do not necessarily have the time or the skills to monitor these changes over time. Ideally, a project manager should be based in the area over a longer period.

4.4. Transaction costs

The BAPC Wetlands project allocated approximately $120,000 for delivery of on-ground works. This constituted approximately 50% of all project funds, or a ratio of 1:1 funding for project administration and implementation. These transaction costs are relatively high, in

part due to the pilot nature of the project, and also due to its limited budget and geographical scope. It is anticipated that with a well-established project structure in place, and with a larger source of funding, the BAPC Wetlands model could operate more efficiently, aiming for an administration to implementation ratio of at least 1:3 or 1:4. A single project manager could feasibly cover a much larger geographic area, and engage many more landholders, now that engagement methods, incentive rates and monitoring protocols have been established.

The relatively high transaction costs are also due in part to the irregular shapes of wetlands. Farmers are usually intent on installing fences very close to the existing vegetation line around wetlands, in order that their livestock may benefit from the shelter it provides. This poses a problem in terms of the fencing materials required. Strainer posts are usually the most expensive component of fence installation and while straight fences generally require few strainer posts, complex shapes or circles require strainers that are more closely spaced, thus increasing the cost of installation. In some instances, fences have been designed with this in mind, resulting in longer straight lengths, the use of fewer strainers, and a larger area of land fenced off relative to the area outlined in the VMAs.

> "These wetlands … some of ours are quite small and they take a lot of fencing per unit area of wetland to fence off. So they're not efficient, none of the fences are in straight lines, they've got a turn every 100 metres and require strainer posts and so they're quite expensive ... even though we use fairly cheap electric fencing... they are more expensive than you think to fence off. So the funding is really helpful and gets us started."

It is clear from Table 12 that project costs per hectare of wetland are much lower for large areas of wetlands compared to small areas of wetlands. This is in large part a result of fencing costs, which accounted for the majority of project payments for each property. The larger the wetland, the fewer strainer posts are required, and the more efficient the labour and other associated costs become. This is not a linear relationship, and reflects varying costs depending on the property in question. Future projects would minimise transaction costs, and maximise funding efficiency and return, by focusing on conserving larger wetlands. Furthermore, there are clear ecological benefits to conserving larger wetlands, in that they are likely to retain high conservation values, and be more resilient to threats and impacts over time.

Table 12: Wetland areas by property, and associated project costs

Area of Wetland (ha)	Fence Length (km)	$/ha of Wetland	Ratio of Wetland to Fence
5.3	1.4	$699.89	3.79
6.2	1.2	$443.33	5.17
10.0	2.3	$781.00	4.35
11.5	2.7	$730.43	4.26
16.0	2.2	$712.50	7.27
26.2	2.9	$625.95	9.03
72.3	6.6	$247.01	10.95
101.0	4.6	$244.37	21.96
119.0	6.1	$213.28	19.51

A summary of total project implementation costs is outlined in Table 13. While the average payment per property was approximately $13,000, this amount varied widely according to the individual property characteristics and requirements. This is also true of wetland area. While the average area was 40.8 hectares, actual areas varied widely (Table 12). The average project payment per hectare of wetland conserved was $332. While this amount does not incorporate landholder labour or future maintenance, it is a small price to pay for the native vegetation outcomes anticipated from the BAPC Wetlands project.

Table 13: Summary of project costs and outputs

Project Details	
Total project payments*	$122,000
Average payment per property	$13,555
Total area of wetlands (ha)	367.5
Average area of wetlands (ha) per property	40.8
Total length of fence installed (km)	30.0
Average length of fence (km) per property	3.33
Average payment per hectare of wetland	$332

*Includes on-ground works such as fencing and water points, as well as property planning and some labour.

Approximately 9,000 ha of high-value wetlands in Gingin occur on or intersect private land. At $332/ha, it would cost approximately $3,000,000 of government investment to protect all of the high-value wetlands on private land in Gingin Shire. When project costs are broken down into costs for capital (70%) and labour (30%) (Table 14), we estimate that the total value of money and labour required to secure all high-value wetlands on private land in Gingin would be $4,300,000. While labour costs may have been undervalued in these calculations, efficiencies of scale would likely reduce the capital costs involved in such a large project.

Table 14: Estimate of project costs for capital works and labour

Cost Description	Cost
Capital costs	
Fencing existing wetlands	$85,000
Watering point infrastructure	$34,000
Other costs	$3,000
Labour costs*	
Fencing	$36,000
Installation of watering points	$14,500
Other costs	$1,300
TOTAL	**$173,800**

*Labour costs have been estimated using a 70/30 split for materials/labour.

5. Discussion

5.1. Assessment of project approach

The BAPC Wetlands project developed a broad range of incentives to offer participating landholders. However, there was little interest from landholders in taking up most of these incentives. Stewardship payments, control of pests and weeds, property planning and implementation of Environmental Management Systems, pasture improvement, and subsidised training or education were not popular. Interest has been very much focused on financial assistance for fencing materials and additional watering points. These incentives appealed to all landholders, who otherwise may not have made the financial investments themselves.

> "I doubt whether I would have done it on my own, I think it's a better scheme than being forced by government to do it, I think this is a good way to go."

In this sense, the development of potentially innovative approaches to native vegetation management has been limited by landholder demand for a basic incentives package. The true success of the project then relied very much on the ability of the project manager to engage with the landholders and the community. The extension service provided by the project manager was highly influential in establishing trust in the project, assisting landholders in their management decisions, providing technical information regarding water quality, vegetation condition, and a host of other information. This extension was also an influential factor in some landholders fencing larger areas of wetland and associated vegetation than the landholder would have fenced without this influence. The flexible approach with which the project manager engaged with landholders was seen to be responsible for the favourable response from participating landholders.

> "…the approach you came onto the farm with wasn't to try and tell us what to do, wasn't to try and demand what you wanted done, but was to work with us and point out the benefits and work with us."

> "…having yourself as a coordinator to bring it all together and give us a little bit of a push, and push comes to shove and that's when things get done."

The flexible approach relied on the project manager taking the time to understand the landholders' points of view, and in allowing for compromise in project decision-making. For instance, no set criteria were applied to the materials or types of fences to be installed, as long as they were durable and stock proof. Some landholders have installed single or double 'hotwire' (electrified) fences, while others have used 7-line Griplock (a 'grid' of horizontal and vertical wires) with a top hotwire. Preferences often relate to the stock present on the property (a single hotwire only works for cattle and not sheep), or the type of fence a landholder is familiar with. Allowing flexibility in this regard means that landholders are more likely to install a structurally sound fence that will require minimum maintenance over time. Furthermore, the landholder maintains control and decision-making power over the management of their farm.

Another strength of the flexible approach is revealed by comments from landholders that were initially reluctant to make changes to their properties, particularly with regard to protecting wetlands. Given the fears prevalent in the area regarding the erosion of property rights, many landholders are unwilling to rush into long-term agreements about the management of their properties. Given time, however, and seeing the examples of neighbouring landholders participating in the project without adverse effects, many landholders will gain confidence in the process, and become more willing to participate themselves.

> "…You can't rush people, you can't push 'em, you've just got to slowly whisper in their ear and the people that are doing it, they get out there and do it and keep talking to them and just slowly, slowly. The more you try and flog it and push it hard, people will just think, you know, what are they up to, why are they doing this, why are they … well one person said to me you don't get nothing for nothing. What are they after? And well I just think they're after for us to protect the environment a lot better."

Since the demise of Commonwealth Envirofunds, and given the lack of landcare funding available in the Gingin area, there are no alternate systems in place that facilitate the conservation of native vegetation and wetlands on farms in the area, apart from private investment. In this regard, the incentives provided by the BAPC Wetlands project achieve far greater environmental outcomes than if the project was not implemented. It is anticipated that with the exclusion of livestock from high-value wetlands and control of pests and weeds in those areas, that native vegetation will begin to regenerate naturally, thus providing a suite of benefits, if somewhat intangible, to the surrounding property. These may include: reduced wind shear and an associated reduction in erosion leading to improved pasture production; better shelter and dedicated clean water sources for livestock, ensuring improved herd health; improved habitat for a variety of native species of birds and insects that may prey on agricultural pests.

> "…like my father and myself earlier, we've done a lot of damage and now we keep reading about Greening Australia and Ribbons of Green and it all starts to make sense and you see the better farms, they've all got alley ways of trees and if you hear the production they get, it just makes sense, cutting down the wind and more birds live there, getting rid of the bugs."

As outlined earlier, it was vitally important to have an existing database of wetlands in the region as a means of identifying priority intervention points. Without a resource like this, a project team would spend a lot of time on scoping data, maps, and other information sources. Likewise, the ability to tap into existing landholder networks will be crucial to any similar project in the future. Land Conservation District Committees, other conservation projects, landholder focus groups, local councils, agricultural field days and other groups and events may all prove to be useful.

5.2. Native vegetation outcomes

Without the actions undertaken in this project, many of the wetlands involved would have undergone a steady decline in condition, to the point of degradation irreversible without

extensive ecosystem reconstruction. Over time, under heavy grazing pressure, wetlands begin to lose their resilience, or their ability to self-regenerate. Native understorey species are lost entirely, to be replaced by a suite of highly competitive introduced species. Seed banks of native species become depleted, and any regeneration or recruitment of native plants is prevented by grazing. With this level of landscape modification, the only means of restoring the ecosystem is extensive replanting and intensive management. The cost of such a strategy is many times greater, and the likelihood of successfully reinstating a functioning ecosystem far lower, than allowing a resilient ecosystem to self-regenerate.

Having been fenced to exclude livestock, the project wetlands are now far more likely to improve in condition over time, building their resistance and their resilience to threats. Ongoing monitoring and management of these areas will be essential to ensure this outcome, and any future incentives programs should allow for long term planning, investment, and extension. Without these, any immediate environmental and production benefits will be eroded over time.

> "(When livestock are excluded) the water clears up straight away and you can actually see what's in there and the little bugs and things and it gets you quite excited."

The long-term impact on native vegetation as a result of project activities is uncertain, given that no professional monitoring can be scheduled within the project timeframe. Landholders will continue to monitor their wetlands by using established photo points and collecting anecdotal information, but the collection of meaningful and quantitative vegetation condition data requires professional attention. We suggest that the project properties are revisited in 2-5 years' time in order to compare wetland vegetation condition with baseline data collected during the project.

> "I guess that's a real limitation, this project's only been a one year project and it's very hard to demonstrate any success and to do any monitoring. You know it would be great to do some monitoring on some of these sites."

While it is difficult to quantify the environmental benefits that wetlands on private land provide for the broader community, there are factors that operate on a scale larger than that of the individual property that are worth noting. Most obvious is the provision of hydrological services such as ground water recharge and nutrient filtering. Secondly, the conservation of native vegetation and habitat across the landscape contributes to landscape connectivity and the maintenance of biodiversity in the region.

It is unlikely that the scale of changes to wetland management on private land in this project will be large enough to generate economic benefits for the broader community, particularly because non-marketed values are difficult to estimate. However, it is estimated that although wetlands only account for 6% of the earth's surface, they provide 40% of the Earth's renewable services (i.e. hydrological, water quality, biogeochemical cycling) (Zedler, 2003). If wetlands and their associated vegetation are conserved and enhanced on a regional scale, thereby reducing fragmentation, contributing to hydrological and vegetation connectivity, restoring lost habitat for native flora and fauna, and improving the landscape aesthetic, a larger proportion of society will benefit.

It is clear from this project that some landholders already appreciate this fact, and are willing to manage the native vegetation on their own land with this in mind.

> "…you can't afford to lose assets within the community or in the district. I know, we own this freehold….but it's still an asset for the district."

> "…if the water's fresh coming down into (the lake) and the water's fresh going out the other end of it, you know, there's a benefit. Whereas if it comes in fresh and goes out the other end salty, then we're not doing the right thing."

Raising landholder awareness of this principle at the regional scale will contribute to increased public benefits from native vegetation management on private land. While regulations may fail to address wetland functions at multiple scales (Calhoun, 2007), approaches to management beyond the regulatory process, such as this pilot, have clear potential in this regard.

5.3. Cost effectiveness and risk in the BAPC Wetlands project

5.3.1. Cost Effectiveness

The use of financial incentives is a very persuasive means of encouraging farmers to take up or continue practices that provide environmental benefits from wetlands. Most of the participating landholders are aware that conservation on their property is an important factor contributing to productivity, but financial capability is often a limiting factor. While it may be difficult to measure the direct economic benefits of wetland conservation to farm productivity, there are several less tangible benefits to be gained.

It is certainly true, however, that early intervention to manage native vegetation is far cheaper than replacing it. The true ecological and economic values of ecosystem services are sometimes only recognised when attempts are made to restore degraded ecosystems and landscapes. In this sense, 'the best kind of restoration is to maintain what you already have' (Lindenmayer and Hobbs, 2007).

Certainly without the provision of incentives, much of the work achieved in this project would not have occurred, or would have taken many years to complete. As Miller *et al.* have shown (2004), a certain level of wealth in any particular community is necessary but not sufficient for the evolution of nature-based planning. Thus without incentives, even in a wealthy nation such as Australia, environmental conservation and planning are not guaranteed. There may be ways to reduce the overall incentives cost to the public in future schemes, such as the used of a competitive tender process, or a reduction in the publicly-funded proportion of incentives for production offsets, but these alterations require a greater momentum towards change from the community.

Homogeneous instruments are likely to be more appropriate where wetland owners' net costs and wetland protection outputs are homogeneous, while instruments that facilitate site specific arrangements are more appropriate where wetland owners' costs or wetland protection outputs are heterogeneous (Whitten and Bennett, 2005). The BAPC Wetlands

project includes many wetlands that fall along a condition or value gradient, dictating a heterogeneous approach. The ability of a project manager to effectively assess this heterogeneity is paramount to the fairness (perceived or otherwise) of distributed incentives payments. This gradient may also be used to generate a sliding incentive payment scale, where greatest funds are directed towards the most valuable wetlands. This will provide another mechanism by which to ensure the greatest outcome for the least funds.

5.3.2. Risk

Landholders have signed voluntary management agreements for a period of 5 years. With no project manager to continue project extension, it will be difficult, if not impossible, to ensure landholders are following their obligations according to those agreements. The risk here is that substantial investment in infrastructure will result in limited or no net benefit to native vegetation on participating properties, either because landholders disregard the commitment they made, or the property is sold to another owner who reverses any management intervention taken by project landholders. However, the likelihood of these risks is low, given the efforts put into awareness and education, and the proactive nature of project landholders.

Conservation covenants are the best way to secure the ongoing management and protection of native vegetation on private land, and their use in future projects is recommended, but there was almost no interest in this mechanism. Incentives for landholders to place a covenant on their land are minimal. Some councils, such as the Shire of Busselton, have instituted a 50% reduction in rates for those landholders who place covenants on their wetlands. It may be that other Shires might consider such a scheme as part of a broader strategy to conserve native vegetation in their district.

5.4. Transaction costs

Conclusions made by Whitten and Bennett (2005) from bio-economic modelling of wetland management indicated that changing wetland benefits could yield a net benefit to the community. However, they clarified that such benefits would require a policy mechanism that would deliver the required change in wetland outputs, emphasising that wetland policy mechanisms are not cost-free. Hence, many policy options may not deliver a net benefit to the community once transaction costs are taken into account. This may be the case for the BAPC wetlands pilot. For the reasons outlined in section 4.4, the transaction costs for the BAPC Wetlands project were relatively high. Due to the short timeframe and the limited funding supply, administration costs were necessarily skewed upwards. In a broader-scale project, engaging more landholders, it is anticipated that transactions costs could be significantly reduced. The need for scoping studies would be reduced. Methodologies established in this pilot could be utilised immediately, making the most of pre-defined templates and methods. Having a project manager responsible for a larger number of properties in a broader project would certainly be feasible, and would result in a more efficient administration to on-ground funding ratio. In this case, the amount of public funding required would be reduced, the amount of native vegetation better conserved would be increased, and the overall benefit to the public would be greater.

A further clarification is required here. Policy is directed towards influencing the behaviour of wetland managers (public, private or both) through altering their wetland management incentives. Ongoing readjustment of policies may be necessary due to uncertainty about future preferences and incomplete information about the transaction costs of wetland owners and government (Whitten and Bennett, 2005). The importance of a flexible approach has been confirmed by all of the BAPC project landholders and steering committee members. Efforts should be made to consult landholders regarding preferred incentives. This should ensure that unnecessary or unhelpful payments are avoided, whilst strategically targeting investment at those points where conservation and production outcomes are optimally balanced. In the case of this project, funding for fencing materials and off-wetland water points have been the principle incentives of interest to landholders.

5.5. Participant satisfaction

Wetland owner perceptions provide important guidance as to the transaction costs they bear in engaging with alternative policy options (Whitten and Bennett, 2005). The generally very positive feedback received from all participating landholders indicates that the BAPC Wetlands project filled an important gap in conservation planning and funding. It is tempting to conclude that the landholders were too pleased with the outcome of the project, and in fact should have been paid less public funds for the same outcome. However, it is necessary to consider the ongoing costs that these landholders may face in managing the native vegetation on their land that will ultimately provide some public benefits. Landholders that feel they have benefited from public investment in their property are more likely to manage that land in the future with the public benefit in mind.

In terms of funding arrangements, landholders were open to the VMA process because the agreements allowed for emergency grazing, and ultimate autonomy over management practices on their own land. This flexibility was one of the key aspects of their willingness to enter into a funding agreement. While most landholders will never run livestock in their fenced wetlands again, retaining the power of land management decisions in these areas, particularly in times of dire need, is crucial. While conservation covenants do not remove this autonomy from landholders, the process by which the agreement is made is more complex, time-consuming, and still carries a stigma of erosion of property rights. Raising landholder awareness of these issues will be an important step in establishing more covenants.

The percolation of conservation ideals into the agricultural community is evident amongst all the landholders who participated in the BAPC Wetlands project. Whereas historically some of them cleared extensively and managed their properties to ensure that production land was maximised, there is now a growing recognition of the importance of finding a balance between production land and remnant natural areas on their properties, and even replanting native vegetation.

> "…it's more about having a conservation mindset and being happy to fence out areas and know that those areas will really improve and not be continually thinking oh, I'm fencing off a bit of pasture here."

> "…things have changed a bit, people's ideas on farming are not the same now as what they were when dad first started. It's not go in, clean every tree off the place. I think over the years we've come to realise that you've got to have a bit of a balance…"

It is important to realise that landholders may be cautious about accepting new ideas before they have had time to assimilate them. This issue is one of the key considerations of extension work in agricultural areas. Patience and flexibility on the part of the extension staff are crucial to a successful project.

> "…we might not agree at the time when you first tell us, but we go away and we think about it and we're thinking oh well maybe that is the right way to go about it."

> "…I guess the more people that do it as well, so there's examples around, then it becomes a bit more of a mainstream activity rather than just something that our lunatic friends do. So yeah, it's just a bit about evolution in farming systems and management."

Even when landholders are prepared to undertake conservation work on their own initiative, available resources, usually a combination of time and money, are the greatest limiting factor.

> "…I certainly get the impression that a lot of farmers are quite interested. They know it's the right thing to do, it's just they haven't had the resources to do it or they think it's too much hard work or you know they've got other priorities going on."

> "…the biggest thing is the money issue to be able to do things. You might be able to see what needs doing, but you sort of talk your way out of doing it because of the money factor. That's where this … the system you've come in with is bloody brilliant. It should fast-track a lot of people."

5.6. Other project issues

5.6.1. Fence placement

All of the landholders are aware that their stock need shelter from sun, rain, wind and storms. In several paddocks, the vegetation surrounding wetlands is the only shelter available for livestock. In these cases, landholders were keen to install the fence very close to existing vegetation, to ensure their stock continued to receive shelter. In one case, the landholder cleared a line through a section of fringing vegetation to exclude it from the fenced area. Livestock will be able to shelter directly underneath the excluded vegetation. This landholder uses shelter sheds, open sided structures under which livestock can shelter. This kind of shelter could be provided as a production offset in the future to encourage landholders to fence off all fringing wetland vegetation around their wetlands.

5.6.2. Neighbourhood management

One of the project properties is adjacent to a Western Australian Department of Environment and Conservation (DEC) reserve. While the reserve incorporates a threatened ecological community, it is in a neglected state, particularly with regard to invasive weeds. Without adequate and ongoing management, these weeds pose a problem to nearby properties. Fig trees and Arum lilies have spread into the neighbouring property, and pose a significant threat to the conservation category wetland there. While some of the burden of weed control should lie with the landholder, any effort will be meaningless without the control of weeds in the DEC reserve.

5.6.3. Production records

It was anticipated that production records for all participating landholders would be collected as a means of generating baseline production data. This could have been used to monitor future changes in production. Unfortunately, none of the landholders involved in the project keep detailed records of this nature. Accordingly, no accurate quantification of production benefits resulting from this project can be produced.

6. Conclusions and Recommendations

The BAPC Wetlands project successfully engaged landholders in an agricultural region known for its antagonistic attitudes towards government regulation of wetlands. While a broad suite of incentives to fence wetlands was offered to landholders, those of principal interest were fencing materials and off-wetland watering points. Many of the landholders engaged by the project had already undertaken some form of conservation work on their property, either through Envirofunds or private means. Accordingly, it may be concluded that much of the difficult process of reaching less receptive landholders in the area is yet to come.

Personal contact with landholders is crucial to the process of engendering trust, and to the development of a mutually agreeable plan for conservation of wetland systems and surrounding native vegetation whilst ensuring production benefits. In this sense, effective wetland conservation begins locally. Local efforts should strive to fill gaps left by governmental regulations through working with regional stakeholders to conserve wetland resources. If public funds can continue to be used to facilitate this local process, the process of developing a regional and multiple-scale wetland conservation approach will be well served.

Incentives were found to be a very effective means of engaging landholders in this process, ensuring a sense of equity in responsibility for management of wetland areas, as well as providing a timely intervention to halt threatening agricultural processes. Without the use of incentives, much of the work achieved in the project may not have occurred, or would have taken many years to complete. The public benefits of having a healthy and well-connected mosaic of native vegetation across the landscape are difficult to quantify, particularly within a pilot project of this scale. However, the costs of restoring these areas from a completely degraded state, compared to the costs of early management intervention, would be very high indeed.

Wetland regulations and other non-regulatory mechanisms should be designed to conserve an array of wetland functions, not limited to those attributes that can be given a marketable value such as water quality, waterfowl habitat and recreation. They should address cumulative impacts, and connectivity of wetland, aquatic and terrestrial resources, and be comprehensive enough to protect both individual wetlands and the overall integrity of landscapes in which wetlands occur. Implementing management in the form of designed experiments will be an important part of this solution, whilst engaging landholders with direct management responsibility for those areas will be crucial.

Wetlands in this case study are located in an agricultural landscape. The primary threats to wetland protection arise from competition for wetland resources for production of food and fibre products. These findings can be extrapolated with a high level of confidence to wetland systems that have similar biophysical characteristics, in which wetland protection outputs are threatened by a similar array of processes and in which the costs of restoration and management are similar. Access to wetland databases, landholder mailing lists and existing landholder networks in those areas will be essential to the success of any such project in the future. However, the most important consideration will be the on-ground and long-term presence of a project manager or team, and their ability to liaise with landholders to establish trusting and mutually beneficial relationships in pursuit of well-balanced conservation and production objectives.

"While the case of wetlands is complex it is not unique and the lessons to be learnt from developing a better understanding of wetlands can be readily applied to many other natural resources that provide both private and social benefits" (Whitten and Bennett, 2005).

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WWF, ACF and HSI proposals on Caring for Our Country

Introduction

WWW, ACF and HSI are most supportive of the CFOC proposals and welcomed the Government's announcement of this policy, earlier this year. CFOC marks a new approach to the integration of environment and natural resource management policies and programs at the national, state/territory and regional levels.

CFOC, in conjunction with the Government's climate change, water and related agricultural policies is the principal program of the Federal Government for conservation of Australia's globally significant biodiversity and for the sustainable management of its natural resources.

For WWF, ACF and HSI we therefore have a major interest in ensuring the success of the program. ACF, WWF and HSI were especially pleased to see in the CFOC package announcement the integration of a number of previous programs; the clear identification of priority areas; and, the increased focus on national led action and on outcomes.

The three organisations were invited to attend, on a confidential basis, a meeting on 20 May along with other organisations, governmental and non-governmental, to discuss draft CFOC outcome statements prepared by the joint DEWHA/DAFF NRM team.

We greatly appreciated the opportunity of providing input at the meeting, however we did leave the meeting with a number of major concerns.

Apart from the Government's climate change and water policies, CFOC is the Commonwealth Government's principal environment and natural resource management program. The 13 May letter of invitation to the 20 May meeting stated (second paragraph): "This [CFOC] initiative will remove the over emphasis on process, and address the lack of clearly defined outcomes, that characterised previous natural resource programs. The design and implementation of Caring for our Country reflects the need for Commonwealth investments to clearly focus in national priorities and deliver measurable outcomes against these priorities."

ACF, WWF and HSI came away from the meeting with the view (which did seemed to be shared by a number of other organisations at the meeting) that the above objective would not be met.

Our concerns include the following:

. CFOC 'outcomes' and 'targets' may be weak, generalised and non-measurable;

. Likely lack of reference to policy and institutional matters in regard to how CFOC will be implemented on an overall basis or in relation to the outcomes and targets nor any recognition of the need to improve Commonwealth –State/Territory arrangements to ensure a coordinated and effective focus on priority biodiversity issues;

. Process for implementation of CFOC is unclear, including an effective process for consulting with interest groups and a transparent process for preparing CFOC report cards;

. No guarantee, at this stage, that significant proportions of remaining uncommitted CFOC funds

will be allocated to priority areas that appear to have little funding e.g.. 'biodiversity and natural icons';

. Lack of clarity on how CFOC will be delivered through NRM groups.

. Not clear how CFOC implementation will relate to implementation of other related Government policy areas e.g. climate change, water and drought policy.

In relation to the last point we suggest that CFOC Outcomes and Targets explicitly identify how their achievement will be supported by other related policies and programs.

Our proposal for a biodiversity planning program as a joint technical undertaking between both levels of government, under the Biodiversity priority area, is fundamental to the achieving CFOC's biodiversity outcomes. It is considered essential that the biodiversity planning initiative is introduced if we are to avoid the mistakes of the former Natural Heritage Trust. The biodiversity planning proposal is not just another monitoring project, but will provide a key planning, tool at all levels of government, for CFOC and other programs.

We also propose that the Government to expedite the review the National Biodiversity Strategy with a view to securing agreement between all government agencies across all jurisdiction and major stakeholders on roles and responsibilities to reverse the devastating decline in Australian biodiversity, with CFOC providing the first five year funding package..

While CFOC addresses one marine issue i.e. the Great Barrier Reef Rescue package CFOC is silent on marine environment issues generally, including lack of clarity on how programs of work on the protection of marine biodiversity and the sustainable use of renewable marine resources will be delivered. CFOC as the Government's central biodiversity and natural resource management program could encompass Australia's marine resources. Important areas of work in this regard include the National Representative System of Marine Protected Areas, Marine Bioregional Planning, National Plan of Action on Sharks, and work to curb threats to marine wildlife, marine ecosystems and communities. In this submission we have suggested a number of targets for marine biodiversity conservation and management.

Because of the above concerns and because of the importance of CFOC as the main delivery vehicle for the Commonwealths conservation and NRM programs, ACF, WWF and HSI are keen to contribute to the development of the CFOC structure and its implementation and have prepared these written proposals on CFOC for DEWHA for its consideration and for the consideration of the Minister for Environment, Heritage and the Arts.

Current Government CFOC documentation contains little on the need for new policy or institutional arrangements required to achieve the most effective implementation of the program. CFOC and its funding could provide the basis for development of critical new policies and institutional arrangements. We appreciate that new policy proposals will need consideration by Ministers and we would appreciate the opportunity to work with the Government on the development of these proposals.

According to the CFOC Question & Answer document of March, the Prime Minister is to be asked by 30 June to approve the five year outcomes for CFOC. Because of our concerns over the adequacy of the draft outcomes, we appreciate the opportunity to meet with the Secretary of DEWHA to discuss how best we might assist the Department in finalising the CFOC package for Prime Ministerial approval, as well as how we might best work with the Department on an on-going

basis in the further development of CFOC and its implementation.

Institutional issues

As noted above, the CFOC, in conjunction with the Government's climate change, water and related agricultural policies is the principal policy instrument of the Federal Government for conservation of Australia's precious biodiversity and the sustainable management of our natural resources. The added major impacts of climate change make the challenges all the more difficult. (Indeed the critical strains on our biodiversity and natural resources from climate change suggest that the Government should be giving urgent consideration to increasing the amount of funding allocated to CFOC.) For example, increased funding from the introduction of the Emission Trading Scheme would help address the climate change challenge and meet key biodiversity objectives.

There are institutional and policy issues both in relation to the overall implementation of CFOC as well as in relation to its individual outcomes and targets and to how these will be achieved.

We consider that CFOC offers the opportunity to put in place new and innovative institutional arrangements for the conservation and sustainable management of our natural resources. In regard to many of our policy suggestions we appreciate that these proposals will require some time for consideration by Ministers.

There are number of policy and institutional issues in relation to the overall implementation of CFOC. These include:

. National Governance of CFOC eg role of the relevant Ministerial Councils. Given the critical pressure on our natural environment from climate change we propose that COAG, with the support of the Natural Resource Minister's Council be directly involved in the development and implementation of CFOC Given the critical importance of protecting and sustainably managing the nation's natural resources the CFOC policy area should be seen as just as important as climate change policy and should receive the close attention of the Prime Minister (as was the case with Prime Minister Hawke with his national environment statements and his involvement with the national strategy on ecologically sustainable development).

. Jurisdictional roles and responsibilities. It is important that in implementing the CFOC that the Commonwealth, States and Territories and Local Government are all 'working from the same page' i.e. are all working in concert in the same endeavour with mutually supportive policies and programs. In line with the Prime Minister's commitment on improving delivery at all levels, Commonwealth, State/Territory and Local Government, through bilateral agreements and other means, the Commonwealth should clearly define the roles and responsibilities of each level of government required to cost effectively implement integrated environmental and resource management programs.

. Most importantly there is a need to address dysfunction Commonwealth-State arrangements that have developed over the past years, particularly with the setting up of regional bodies, for the efficient delivery of biodiversity conservation measures.

. Consultation – CFOC will potentially have a major impact on our environment – there needs to be robust arrangements for stakeholder input and consultation in developing and implementing the program. This submission suggests that the Australian Landcare Council be re-constituted as the Australian Landcare and Environment Council to advise Ministers on CFOC

Monitoring – the Government has stated that CFOC, in contrast to the programs of the previous government, will be more rigorously monitored. Independent outside monitoring of CFOC achievements and outcomes might be warranted. Either new institutional arrangements could be considered or a body such as the Land and Water Resources Audit be given the task.

In conclusion WWF, ACF and HSI consider that a number of new policy and institutional initiatives need to be taken. These will require consideration by the Government and we look forward to discussing how this might be best achieved

Funding allocation

We understand that in terms of election commitments, approximately $1.5 billion has been allocated to CFOC programs over the 5 years, leaving about $.75 billion un-committed.

Virtually no funds have been allocated to the biodiversity, remote and northern Australia and aquatic habitat priority areas.

WWF, ACF and HSI request that a significant proportion of the uncommitted funds are allocated to these areas.

Cross linkages between CFOC and other policies/programs

To maximise the CFOC outcomes, leverage with other related Government program and policy areas will be essential, particularly, climate change; water and the Living Murray initiative; and, various agricultural policy areas including developments in the drought relief area.

For example, funding from the climate change adaptation area could be critical to assist in the establishment of long term stewardship programs, the protection of key biodiversity assets and to build resilience such as protecting climate change refugia. Protection of aquatic habitats in the Murray Darling Basin will be almost entirely dependent on the success of the Murray Darling initiative.

The CFOC should be the strategic framework for the Government's biodiversity and sustainable natural resource actions. It should therefore be the prime mechanism for coordinating all of the Government's related programs in so far as they contribute to the CFOC outcomes and targets.

The CFOC outcomes, targets and actions must make explicit the links with other policy areas in regard to how they will contribute to meeting the CFOC goals.

Similarly there are DEWHA programs that are directly related to CFOC and must be recognised. For example the Australian National Biodiversity Strategy (or its revision) should be providing a key element of the CFOC biodiversity priority outcomes and targets.

As previously noted, that apart from the GBR,, the CFOC does not include marine biodiversity protection and marine sustainable use and management. This is an anomaly that must be rectified.

Outcomes, 1 year and 3 year targets

Draft outcomes presented by the NRM Task Force at the meeting on 20 May, were considered to be too generalised and lacking in quantitative specification.

WWF, ACF and HSI suggest the following draft outcomes, 1 year and 3 year targets for consideration.

National Reserve System National Priority Area

Outcomes – 5 years

1. A Comprehensive, Adequate and Representative reserve system (NRS) is established in perpetuity in each bioregion, particularly through increased representation of regional ecosystems in each of the 35 under-represented bioregions across Australia.

2. Revised Directions Statement targets (see 1 year target below) are met.

3. Management of 75% of protected areas across all bioregions is demonstrably of a very good standard (ref 'Building Nature's Safety Net',WWF, 2006 pg 20)

4. Conservation and sympathetic management on other land is planned to complement the NRS to ensure adequate landscape-wide conservation of biodiversity and to incorporate climate resilience and long term viability of ecological processes . Priorities for regeneration through other programs is established in those regions where there is insufficient vegetation for CAR reserve system, eg the Avon Wheat Belt, with cross program incentives such as through the emission trading scheme.

Targets- 1 year

1

1. Revision of Directions Statement

Target 1. The targets within the 'Directions for the National Reserve System- A Partnership Approach (2005)'statement are revised and agreed between the Australian Government and State and Territory governments within 12 months to achieve the five year outcomes and include the following minimum targets for the NRS. Revision of the Directions to include a biennial report by the Australian Government on progress made toward these targets in conjunction with the periodic release of the 'Collaborative Australian Protected Areas Database' (CAPAD).

[Not withstanding this review of the Directions Statement, the following key targets, drawing upon the existing Directions Statement, are considered to be a minimum set to be achieved. Achieving many of these key targets will require alignment of other C4OC funded programs to deliver NRS outcomes as part of integrated biodiversity strategies across bioregions, see below].

Progressing Comprehensiveness

Target 2. At least 70% of the extant regional ecosystems in each bioregion are adequately represented in the NRS in perpetuity within IUCN management categories I-IV protected areas within 5 years.

Target 3. At least 90% of the extant regional ecosystems across Australia's bioregions are adequately represented in the NRS across all protected area types, including non government

protected areas and IUCN categories V-VI, within 5 years.

Progressing Adequacy

Target 4. Protected areas are selected and managed within a bioregional planning context for the long term survival of all native species and ecosystems in all bioregions within 5 years (refer also biodiversity planning target within Biodiversity Outcome.)

Target 5 Implement mechanism for assessing management standards for protected areas across tenures.

Progressing Representativeness

Target 6. At least 60% of the extant regional ecosystems in each IBRA subregion, particularly where significant diversity in biota occurs within regional ecosystems, are adequately represented in the NRS within 5 years across all protected area management and governance types.

Protecting Threatened Species and Ecosystems

Target 7. Listed endangered species critical habitats and endangered ecosystems in each bioregion are adequately represented in the NRS within 5 years.

Freshwater ecosystems

Target 8. 70% of freshwater regional ecosystems in each bioregion are adequately represented within the NRS within 5 years.

Climate refugia

Target 9. Key climatic refugia are identified in each bioregion within 3 years and adequately protected within the NRS within 5 years (funding for this activity could in part be sourced from the Australian Government's climate change adaptation fund).

Northern Australia

Target 10.The under-represented bioregions of northern Australia, the world's largest intact tropical savanna, is addressed in meeting CAR targets and is being effectively managed within the National Reserve System.

Indigenous Protected Areas

Target 10. Long term security for conservation and provision for cooperative management arrangements for IPAs are in place in all jurisdictions within 12 months.

Target 11. Expansion of IPAs is prioritised and reported according to contribution to CAR to ensure that they contribute to the conservation of all extant regional ecosystems being included in the protected area estate (Target 3) and

Target 12: That additional Indigenous rangers are employed to achieve adequate conservation of biota within all IPAs.

In addition to the targets above, derived from the revised Directions Statement, the following 1 year targets are also proposed:

Target 13: To support private contributions to the NRS, that the Commonwealth initiate a multi-jurisdictional review of perverse taxation and management arrangements affecting conservation initiatives, for example the continuing obligation to graze leasehold lands acquired for conservation purposes.

Reporting

Target 14. Australian Government will arrange for a biennial audit of progress made toward NRS targets and an assessment of the contribution of protected areas to regional economic development in conjunction with the periodic release of CAPAD beginning 2010.

Value of protected areas

Target 15An assessment of the contribution of protected areas to regional economic development commences.

3. Establishment of an NRS Advisory Committee

Target 16 Commonwealth and state/territories establishes a national NRS advisory committee to advise governments on the development of the CAR NRS across all bioregions, and on the assessment of management standards.

4. NRS procedures

Target 17 The Commonwealth and the states/territories re-publish the procedures for enhancing the CAR NRS.

Biodiversity and Natural Icons National Priority Area

Outcomes- 5 years

1. Biodiversity Planning (this is an over-arching outcome for CFOC)

The foundations for achieving landscape scale biodiversity conservation have been systematically identified through biodiversity strategies for all of Australia's 85 bioregions.

Specifically, $30 million has been effectively invested in systematic biodiversity strategies developed for all Australia's 85 bioregions as a joint technical undertaking between the Australian and State/Territory conservation jurisdictions, and drawing upon other expertise, with at least 15 bioregions completed per year commencing with the priority threatened bioregions. These strategies for each bioregion and component subregions will include:

- assessment of biodiversity values, condition and trend, threatening processes and identification of conservation measures and opportunities
- assessment of the cost effectiveness of conservation measures to ensure each package of measures is tailored to regional needs

- identification of conservation measures needed to adapt to climate change
- assessment of financial needs and responsibilities of all relevant parties to implement each strategy
- effective long-term monitoring

(Also see Marine section for more detail)

2. Use of EPBC Act

A) By 2013 that Australia will have an effective, fully-resourced legislative regime for protection of matters of national environmental significance that provides for recovery of threatened species and ecological communities, and requires response to key threatening processes. A reformed EPBC Act would ensure effective on-ground implementation, cognizant of other legislative mechanisms at Commonwealth and state levels, and with provision for third party standing.

B).The 2010 Review of EPBC provides for the participation of all stakeholders.

C). The use of the EPBC Act is maximised by:

- Identification of critical habitat and their listing on the Register of Critical Habitat of all EPBC listed species and communities, by 2010;
- Review the National Land and Water Resources Audit Biodiversity Assessment lists of threatened ecological communities including the 2002 list, and all other relevant submissions, for listing under the EPBC Act by 2010;
- List all identified key climatic refugia in the EPBC Register of Critical Habitat, by 2010;
- List all areas of nationally-significant environmental value on the National Heritage List
- List all key wild and unregulated rivers on the National Heritage List;
- Add nationally significant wetlands as a trigger under EPBC Act, by 2010;
- Recognition of altered fire regimes as a key threatening process as part of EPBC regulations.

3. Asia – Pacific Regional Biodiversity Hotspots program

Australia through joint funding initiatives between CFOC and AusAID, implement a $20m program to conserve and protect biodiversity hotspots in the Asia –Pacific Region,

4. Monitoring

A national network of long-term (i.e. multi-decadal) ecological monitoring stations is established across the continent, including in the marine and freshwater environments. . Organisations skilled in the collection and collation of ecological monitoring data to be resourced.

Such monitoring should be developed and agreed between partners, including the resource managers, be focussed on key natural assets and key indicators, and provide for data to be collated and returned to partners in order to inform adaptive management.

Appropriate monitoring and adaptive management measures are now demonstrable in all federally-funded conservation and NRM endeavours – large and small. Smaller organisations are suitably equipped and resourced to undertake scientifically sound ecological monitoring with data uniformity and sharing is embedded in recording systems.

5. Land clearing

All states and territories demonstrate that they have in place effective legal protection from broadscale clearing of remnant and important regrowth native vegetation.

Further federal CFOC type funding to states and territories is made contingent upon their performance in this regard, and is directed according to the priorities and timeframes set out under the CF0C.

6. Local government planning

All local governments in critical/priority areas have in place biodiversity action plans in line with state and regional catchment planning and national targets. They make best use of their statutory planning and other powers to improve conservation giving priority to regional biodiversity needs. Local government natural resource managers receive federal assistance on the basis of performance and preparedness in employing environmental instruments at their disposal to address priority regional needs.

All jurisdictions have in place statutory planning mechanisms that permanently protect and require management of key natural assets from the direct and cumulative impacts associated with development intensification and/or land-use change, including the prevention of ribbon strip development along the coast.

7 Weeds and invasive pest animals

Australia's national, state and territory governments have a streamlined process in place for the identification of high risk invasive species, and for the control of their trade.

A high leverage ratio with industry and across other government programs to ensure proactive management of existing invasive species,, including in limiting the spread of present but non-naturalised species, and preventing any future importation of exotic species

The existing Weed Spread Prevention Plan and the Australian Pest Animals Strategy are fully-funded and implemented.

All trade agreements are subject an assessment of the risk of exacerbating problems associated with invasive species.

No new exotic species are deliberately introduced into Australia unless assessed as a low environmental risk.

Management of existing invasive species is undertaken with priority given to islands, Ramsar wetlands, World Heritage Areas and other protected areas.

8.Tasmanian Devils program

Through the provision of $10m by the Commonwealth, and other funding, a solution to the elimination of Devil Facial Disease has been identified

9. Cane toads

Through the Commonwealth's $2m and other funding movement of western and southern migration of cane toads has been slowed

Targets- 1 year

Within 12 months, establish a strategic plan for the overall development and implementation of recovery plans for all listed threatened species and ecological communities;

- to be developed jointly with the Commonwealth and other departments including state, territory and local governments, regional bodies and existing community networks

-to be an integral part of all planning by public agencies

Provide resources for existing networks, such as the Threatened Species Network, in order to implement recovery actions in conjunction with community partners

Targets- 3 years

Recovery plans for critically endangered, endangered species and ecological communities and resourced and implemented within three years

A framework for achieving Competitive Neutrality in all aspects of Australian forestry is established, and national growth targets for the industry are reviewed.

Strategic phase-out of identified perverse policies and subsidies that impact on biodiversity assets is underway. A substantial portion of the revenue so freed up should be re-directed to the *Caring for Our Country* programme.

Coastal Environments and Critical Aquatic Habitats National Priority Area

Outcomes – 5 years

Marine

A) National Representative System Marine Protected Areas (NRSMPA)

1. A Comprehensive, Adequate and Representative marine protected area system (NRSMPA) consisting of IUCN category I and II highly protected marine protected areas is established in perpetuity in each marine shelf bioregion, and off-shelf provincial bioregion across Australia's marine .

2. Through complementary instruments such as bioregional planning, fisheries assessments and species recovery plans, management of ocean use, extraction and exploitation, in areas outside the NRSMPA is conducted in a manner consistent and complementary with the NRSMPA to ensure adequate conservation of marine biodiversity and incorporate climate resilience and long term viability of ecological processes

B) Migratory Marine Species, Threatened Endangered and Protected Marine Species, Fisheries and International Management Arrangements

1. Effective explicit management measures in place, including through international instruments, to secure the health or recovery of populations of migratory marine species, and threatened, endangered and protected (TEP) marine species, that occur in Australian waters.

2. International instruments and agreements, of particular relevance to Australian migratory marine species and marine ecosystems, such as CCAMLR, WCPFC, and IOTC, have effective conservation measures in place that results in responsible management on the water, responsible trade and effective enforcement, and that Australia has played a significant leadership role in ensuring the responsible approach of these instruments.

3. Fish populations are healthy or recovering and fishing is carried out in a sustainable manner based on precautionary, science-based, species specific data, with no significant impact on associated ecosystems or species.

4. Coordinated investments by the Australian Government in sustainable marine natural resource management, capacity building, science and technology transfer in Pacific and Coral Triangle countries, significantly reduces the incidences of illegal fishing in Australian waters, improves the status of shared stocks and the health of migratory marine species, and results in more responsible management by competent management bodies.

5. All seafood imported into Australia is subject to the same stringent environmental and management requirements, and that assessment and compliance information is publicly available for each seafood product and type.

C) Great Barrier Reef

The Government's $200m Great Barrier Reef Rescue Program has demonstrably led to water inflows into the Reef area that are of a quality that does not adversely impact on Reef health.

Coasts

The Commonwealth and state/territories have developed an agreed national coastal policy and strategy under which funding is being provided to prepare and implement coastal plans and development controls that protect high value biodiversity, restrict development of areas likely to be affected by sea level rise and storm surge etc.

The Commonwealth's $100m Community Coast Care program has led to a demonstrable improvement in coastal ecosystem health

As a result of the Government's commitment to provide $20m the Tuggerah Lakes Estuary

Management Plan has been implemented and there is a demonstrable improvement in water quality and biodiversity health.

Inland waters

A system of technical healthy waterways report cards have been established for reporting every three year for key coastal estuaries in conjunction with state and regional bodies which demonstrates that coastal habitat fragmentation and decline is in reverse (with estuary and salt marsh environments showing the greatest progress) and threats to coastal and near-shore species of high conservation significance, have been reduce , for example the Moreton Bay Waterways and Catchment Partnership

Management plans are in place for all internationally significant wetlands, and water to meet their requirements is available.

Funding for freshwater initiatives are consistent with National Water Initiative timeframes and policy requirements, and are complementary with other Commonwealth water initiatives.

To conserve freshwater biodiversity there needs to be leveraged action from Commonwealth water programs in order to ensure at least 60% of natural 1 in 20-year flooded areas are reconnected to the river for 15 priority floodplains.

Nationwide, environmental water is formally guaranteed across river systems such that it can be used to deliver multiple environmental benefits throughout the system.

Theft of environmental water attracts high penalties.

Jurisdictions have identified all high conservation value rivers, wetlands and estuaries (including groundwater dependent ecosystems), consistent with the provisions of the National Water Initiative, and established effective legal and management regimes for over 50% of these, and their level of future risk from climate change, particularly as it relates to environmental flow

For all freshwater ecosystems, remnant populations are identified, with protection of at least 50% of these populations and their habitat, including migratory species, in-stream/aquatic species, etc.

Climate change/drought refugia within MDB are identified, with protection of at least 10% of these areas, and delivery of at least 70% of the water that underpins their survival.

At least 30% of all known freshwater invertebrates that occur in regulated river systems are assessed against EPBC listing criteria, and where appropriate are listed.

Targets- I year

Marine

A) . Revision of the *Guidelines for Establishing the National Representative System of Marine Protected Areas*

Target 1. The targets within the '*Guidelines for Establishing the National Representative System of Marine Protected Areas* (2007)'statement are revised and agreed between the Australian

Government and State and Territory governments within 12 months to achieve the five year outcomes and include the following minimum targets for the NRSMPA. Revision of the Guidelines to include a biennial report by the Australian Government on progress made toward these targets in conjunction with the periodic release of CAPAD.

Progressing A Bioregional Framework

Target 2. Bioregions (shelf) and provincial bioregions (non-shelf) will provide the planning framework for the establishment of the NRSMPA, and a network of marine protected areas will be created for each bioregion (shelf) and provincial bioregion (non-shelf)

Progressing Comprehensiveness

Target 3. The highly protected area network for each bioregion (shelf) and provincial bioregion (non-shelf) will include the full range of biological diversity (i.e. ecosystems, habitats, communities, populations, species and genetic diversity) identified for that bioregion.

Progressing Adequacy

Target 4. Enough of each conservation feature needs to be included in the NRSMPA such that ecological viability and integrity is provided to ecosystems, habitats, populations, communities and species. Targets for protection will be set according to a features vulnerability, rareness, heterogeneity, sensitivity, resilience, naturalness, diversity, level of threat, historical extent and global or regional significance. In general targets should be between 10 and 50%.

Progressing Representativeness

Target 5. The MPA network should include samples of the full range of environmental variation typical of a feature. Ecosystems and habitats should be represented in proportion to the levels at which they occur in the bioregion. Unique or special areas, like known spawning, nursery, or breeding grounds, or where unique physical or oceanographic features occur, will be included within the MPA network..

Protecting Threatened Species and Ecosystems

Target 6. Listed threatened, endangered and protected marine species and endangered ecosystems in each bioregion are adequately represented in the MPA network within 5 years.

2. Establishment of an NRSMPA Scientific Advisory Committee

Commonwealth and state/territories establishes a national NRSMPA advisory committee to advise governments on the development of CAR NRSMPA across all bioregions, and on the assessment of management standards.

The Commonwealth and the states/territories establishes and makes public the procedures for enhancing the NRSMPA.

B) Great Barrier Reef Rescue program

1. Establish overall program target and time-frame of 50% cut in pollution in 5 years including

- 80% adoption rate of Best Management Practices (BMPs)within cropping sector
- 40% BMP adoption rate in grazing sector.
- adoption rate is adequate proxy for actual water quality improvement

2. Prioritise cash funding on reef risk, and non-cash initiatives in low risk areas

- Prioritise Wet Tropics, Burdekin and Mackay Whitsunday NRM regions for greater than 90% of on-ground funding
- Other areas have access to monitoring and prioritising tools like water Quality Improvement Plans

3. Strengthen Reef Governance and reporting

- Establish one Ministerial Council level stakeholder committee
- Fund reef taskforce secretariat and reef "commissioners" as with MDB reporting to Ministerial Council
- Annual reef water quality report card (similar to SE Qld. Healthy Waterways program)

4. Negotiate stronger State contribution to the Commonwealth GBR rescue program

- Re-establish expectation of traditional Commonwealth /State "2 for 1" funding basis ie $100m contribution from the Queensland Government to the
- Coordinate Federal and State research and extension budgets into a "Reef Extension and Research Taskforce"

Inland waters

A key component of a national policy framework on High Conservation Value aquatic ecosystems is to identify free-flowing (i.e., undammed) rivers, assess their values and the effectiveness of existing regulatory and planning frameworks for their conservation.

Targets – 3 years

Demonstrable improvements in the water quality of the Gippsland Lakes as a result of the Commonwealth's $5.3m funding support.

Other Targets (timelines to be further developed)

Migratory Marine Species, Threatened Endangered and Protected Marine Species, Fisheries and International Management Arrangements

Target 1. National Recovery Plans for TEP species updated, consulted and signed off by all relevant Governments and departments.

Target 2. Rapid Assessment of Migratory species

Target 3. A program is established for all fish species exposed to fishing as targeted, by catch or by-product species, to have baseline data and an estimate of change over time,

Target 4. DEWHA and AusAid produce a joint issues paper outlines their agreed strategy for marine sustainable resource investments in Coral Triangle and Pacific

Target 5. Shark species inventory, risk assessment, management evaluation and supply chain analysis carried out for all sharks species in Australian waters.

Target 6. Review of all WTO accreditations and assessment of progress towards meeting recommendations, with a view to issuing investment warnings to fisheries with a poor track record of compliance and/or insufficient investment in monitoring control and surveillance.

Target 7. Inventory of all seafood product and seafood derived product entering Australia, the nature of the source fishery and possible sustainability concerns.

Target 8. Australian Government produces a whole of Government strategy for ensuring effective conservation measures are adopted in key international instruments.

Sustainable Farm Practices Priority Area

Outcomes- 5 years

Rural adjustment to achieve sustainable land use and management, and the protection of biodiversity, is being implemented, particularly in the context of climate change and the impact on marginal rangelands and the intensively used semi-arid pastoral and agricultural regions.

That the Emission Trading Scheme is actively supporting environmental stewardship and the restoration of biodiversity and ecosystem services as part of carbon sequestration.

The decline in the extent and condition of native vegetation (including scattered paddock trees) on at least 60% of farms and pastoral properties is demonstrably in reverse, with proactive conservation management for critical issues (such as fire, invasive species, climate change mitigation and adaptation, etc.) underway on 75% of properties in key ecological communities.

Deep-rooted perennial vegetation is re-established on at least 10% of priority (e.g. recharge, sensitive, etc.) catchments and sub-catchments. In rangelands, landscape function and understorey vegetation is re-established over large blocks representing at least 10% of each sub-catchment.

At least 50% of Australian agricultural and pastoral enterprises, and at least 75% of those in priority areas, meet or exceed requirements for environmental best practice based on independent third-party assessments, with enterprise management plans linked to regional and national priorities, including effective monitoring of biodiversity values.

An Environmental Enterprise Scheme is established to leverage large-scale private sector investment in sustainable agriculture and new industries with lasting environmental benefits via tax and assorted other incentives and institutional arrangements.

The Emission Trading Scheme contributes significant financial support as a cross portfolio program to underpin environmental stewardship for the permanent protection and management of biodiversity values on private lands.

Restoration programs, including the protection of important regrowth, is effectively incorporated into the Emission Trading Scheme and targeted on bioregional conservation priorities

At least 60% of Australia's agricultural industries - in particular the meat, livestock and dairy industries – are on track to reduce their whole-of-life-cycle emissions by at least 25% by 2020 via accredited climate change mitigation & adaptation strategies. At least $100M pa in private finance is actively mobilised for investment in a range of different new profitable enterprises (sustainable farming systems, new land-uses, etc.) that have passed a national environmental benefits test.

At least $100M pa in private finance is actively mobilised for investment in a range of different new profitable enterprises (sustainable farming systems, new land-uses, etc.) that have passed a national environmental benefits test.

A permanent reduction in non-renewable inputs of 20% is achieved across agriculture and the food industry.

Nationwide monitoring of agrochemicals in priority areas shows significant improvement in water quality and monitoring points are established to assess pesticide and herbicide run-off into local water courses in all regulated river systems

Total grazing pressure in priority areas is reduced to ensure the persistence of a groundcover of native perennials and to prevent the run-off of soil and nutrients, with planning in place in conjunction with state and territory governments to ensure sustainable management of all rangelands and other areas.

Use of any potentially invasive grasses as fodder and pasture crops is actively discouraged.

Targets- 1 year

National criteria for an Environmental Stewardship Programme (ESP) is agreed between Commonwealth and State jurisdictions to enable the programme to be targeted on priority areas to complement the NRS and the protection of key bioregional conservation issues, and to be monitored to ensure effective environmental return on investment

Targets- 3 years

By 2012 an independent assessment of the conservation performance of Australian agriculture and pastoralism shows a substantial improvement in effective integration of biodiversity conservation into production systems across all parts of Australia.

That effective state-of-resource monitoring for key natural resources is established in conjunction with state and territory natural resource management agencies and key commodity groups.

Rural adjustment mechanisms be developed to achieve sustainable land and water management and the protection of biodiversity particularly in the context of climate change and especially with the increasing impacts on marginal rangelands and the intensively used semi-arid pastoral and agricultural regions.

A national sustainability strategy for food and farming is signed by COAG. It builds on progress to-date and includes targets and timelines for climate change mitigation, reductions in oil and other

non-renewable inputs, proactive conservation, sustainable consumption, etc. and related policy and institutional reforms, across the supply chain.

Priorities for strategic revegetation including the management of key areas of regrowth to maximise multiple outcomes including carbon capture, biodiversity and salinity mitigation are identified in agricultural and pastoral areas. Revegetation business plans are drawn up, management partnerships are established and revegetation commences.

Travelling stock routes in all states and territories remain in public hands are managed so as to contribute to landscape connectivity.

A pool of funds for carbon plantings with multiple environmental benefits and good risk management is established. The fund is drawn from revenue generated by ETS auctions. By June 2010 establish a national Carbon Stewardship Program to support landholders manage native vegetation and soils for carbon storage

All landscape restoration projects to be assessed to ensure their cost effectiveness for achieving net environmental benefits.

An independent review of drought assistance schemes has adequately assessed a) the long-term sustainability of Australia's production landscapes under climate change scenarios, b) the extent to which current rural assistance and land laws are helping or hindering sustainable environmental management, and c) the potential to advance cross-compliance, as well as introduce conservation 'agistment', land retirement and other environmental measures.

A national environmental-agrochemical monitoring network including CSIRO, and Universities is established to track agrochemicals in the environment and their impacts

All landcare grants and related industry assistance are now contingent on the development of whole-of-enterprise environmental (including biodiversity conservation) plans, including targets for the achievement of best practice, low-input agriculture, and alignment with regional/national environmental priorities.

Natural Resource Management in Remote & Northern Australia Priority Area

Outcomes- 5 years

Northern Australia's globally significant tropical savannas, rivers and marine ecosystems are protected and restored and 40% of pastoralists are implementing BMP grazing practices.

Through the Commonwealth's $90m Indigenous Rangers program, 300 Indigenous rangers are employed on Indigenous lands and waters in environmental service maintenance tasks

Carbon and land stewardship

Carbon and land stewardship practices are being implemented to enhance biodiversity and financially reward land managers across 10 million hectares of tropical savannas.

As part of a broader approach to NRM and biodiversity conservation and utilising the Commonwealth's $10m funding program , a majority of Indigenous landholders are delivering

effective climate change mitigation activities and are taking up opportunities afforded by emissions trading.

An independent three-year assessment of the Cape York NRM board shows its investments are delivering on the full range of regional and national priorities.

Targets- 1 year

Develop a single integrated NRM plan for Northern Australia's tropical savannas region. This should build upon and improve existing NRM plans.

A community-based NRM board for Cape York is established to coordinate appropriate economic development, conservation and NRM.

3 year targets

Fire regimes
The frequency and extent of late dry season wildfires across Northern Australia's savannas region has fallen by 20% through implementation of cross-tenure regional fire planning.

Indigenous Caring for Country work in Northern Australia

2000 Indigenous rangers are working on land and sea country across Northern Australia, supported by a network of Indigenous Knowledge centres and, real jobs and effective training.

Free-flowing river conservation

Management plans have been developed and are being implemented addressing the management of land and water and other key threats to protect and restore natural and cultural values in 30 major free-flowing river basins across Northern Australia

Climate change resilience planning

The risk and vulnerability to climate change of at least 20 ecosystems of national or global conservation significance in Northern Australia has been assessed and strategies to strengthen climate resilience identified and incorporated into NRM and land use planning.

Strategic weed eradication and control

The distribution of all high and very high risk environmental weeds in Northern Australia are mapped and plans are being implemented for strategic eradication and control through cooperative transboundary efforts, where appropriate.

Conservation agreements

A network of conservation agreements is being effectively managed by pastoralists and farmers over 1 million hectares of Northern Australia's tropical savannas under effective legislative and administrative arrangements to complement the CAR NRS.

Community skills, knowledge & engagement

5 year outcomes

Australians' ecological literacy is shown to be rising rapidly, based on a survey using agreed indicators. Higher literacy is translating into markedly higher participation in environmental works, policy-making and behaviour at all levels and in all sectors.

A clear link between higher rates of participation and improved community wellbeing is established.

An active constituency of support for conservation and environmental investment shows continued growth and is now well-established in mainstream society.

A review of the cost-effectiveness of community outreach and social marketing programmes shows significant success in measuring and reducing Australia's per capita ecological footprint.

All regional NRM groups now routinely undertake best-practice landscape conservation planning based on systematic bioregional assessments.

90% of land managers have excellent access to the best environmental & agro ecological advice and financial assistance to enable the move to best-practice and beyond.

Long-term monitoring programs are technically rigorous and relevant to management and conservation, and effectively collate and deliver publicly available data sets and information.

Regional NRM groups are assessed against nationally-agreed performance criteria for internationally best-practice ecosystem management. The majority are found to be performing well. Where groups are found to be under-performing, the Commonwealth and relevant state/territory take effective remedial action.

Targets – 1 year

All regional NRM groups have the capacity to engage in competitive bids for federal funding, as well as continue with their core work. Many are engaged in partnerships with NGOs, industry groups and local/state governments to deliver against national targets.

Decision-support tools are developed and deployed to enable best-practice landscape conservation planning.

Across Northern Australia especially, Indigenous Land & Sea Management Centres are supported by at least $16.5M in core recurrent funding. The Commonwealth is working in partnership with Indigenous communities to identify and achieve cultural land and water needs and priorities around the country.

Targets – 3 years

The Council of Australian Governments and the NRM Ministers Council annually considers progress on Caring for Our Country programme, in the context of the annual CFOC report cards and ensures the effective joint delivery of programmes across the nation.

A national environmental education strategy is established; the strategy seeks to build ecological literacy across all sectors of society, including by encouraging community-based conservation action and ecological monitoring.

The Australia Landcare Council is reconstituted as the Australian Landcare and Environment Council with recurrent funding to commission relevant policy research. It represents a broader cross-section of the environmental and NRM community, including conservation NGOs, and coastal and rangeland communities. Its chief task is to provide Commonwealth Ministers with independent advice on the implementation, review and directions of the *Caring for Our Country* programme and related policy.

The National Land & Water Resources Audit now takes lead responsibility for ensuring effective monitoring of ecological condition, environmental performance and preparation of annual Caring for Our Country reporting, as an independent entity reporting to the Auditor-General's office.

A pool of general purpose grants is established to enable community groups to promote awareness and ecological literacy, and develop innovative practical and policy solutions to environmental problems.

Funding of community conservation, landcare facilitation, etc. has moved to five year (at least) cycles as part of broader strategy to improve certainty and continuity in community conservation, particularly in rural and regional areas.

R&D investment in agro ecology, low-input agriculture, on-farm conservation and sustainable land-use is at least trebled. A co-operative national approach to research, development and knowledge brokering is established with Land & Water Australia as the lead agency.

A national network of community, industry and government is established to rapidly respond to new infestations of invasive species, and provides adequate resources and training for landcare and community conservation groups.