NATURE CONSERVATION OUTPUT

REGIONAL PLANS

DELIVERING NATURE CONSERVATION SERVICE OUTCOMES THROUGH THREE YEAR TARGETS AND CANDIDATE ACTIONS

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REPORT TO THE
DIRECTORS OF NATURE CONSERVATION AND
REGIONAL SERVICES

JUNE 2006

SYNOPSIS

1. BACKGROUND

The delivery of the Nature Conservation Service (formally known as the Nature Conservation Output) has progressively moved towards an outcome-based management approach over the past few years, where actions are linked to expected biodiversity conservation-related outcomes. This has also been tied with work to better define priorities for the Service, and adoption of an experimental adaptive management framework. The main service providers for the Service are the Divisions of Regional Services, Science and Nature Conservation.

Between July to November 2005, three day workshops were held at Department of Conservation and Land Management (CALM) regional centres to prepare 2006-2009 Nature Conservation Service regional scale plans. This was the first time a statewide process had been undertaken, with a view to:

- Gain a common understanding of the biodiversity conservation priorities and targets for the Service at the landscape, protected area system, ecosystem, method and taxa scales;
- Integrate effort to address major opportunities and biophysical and social threats to biodiversity conservation across all Divisions; and
- Identify knowledge-creation, capacity requirements and gaps in administration processes and planning frameworks to enable effective delivery at a best practice standard.

Over 75 senior staff, principally from the divisions of Regional Services, Science and Nature Conservation, were involved in the process of plan development.

2. METHODOLOGY

Within the above context, the Nature Conservation Service regional plans followed an agreed hierarchical structure of describing three year condition targets for biodiversity assets at various scales (landscapes, protected area, ecosystem, method and taxa). The objective is to assist in achieving the 25 year aspirational goal of reducing the rate of human-induced extinction of local populations of species to near zero, and reversing deterioration in the condition of ecosystems.

Candidate actions were identified and prioritized for each three year target, which quantifiably described the what, where, why and who parameters for activities.

Analysis of regional issues formed the basis for selection of targets and actions. This was undertaken using a variety of tools and reference material including the WA Biodiversity Audit, statutory plans, threat-asset matrices and opportunity analysis. Costs of proposed candidate activities were estimated against costs of existing Service activities, and proportion of existing activities that did not meet the Service's outcome was estimated. Candidate activities were prioritized for investment, and lead Divisional contacts stated.

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[1]

[2] *Landscapes* include relatively intact and biodiversity rich areas

[3] *Condition* relates to species richness, species composition and abundance, and vegetation/habitat structure.

Collectively, the regional Nature Conservation Service three year plans are intended to provide six primary outcomes:

1. More effective management that will slow the decline in the extent and condition of natural populations and ecosystems, while at the same time maintaining biodiversity by better targeting effort to ecological intact landscapes and ecosystems;
2. Reduction in the impact of invasive species on biodiversity through strategic and targeted effort;
3. Improved decision making for the Nature Conservation Service, and integration of Divisional activities and functions;
4. More explicit (i.e. better refined and quantitatively described) Nature Conservation Service regional priorities and targets, and strengthened business case for biodiversity conservation;
5. Ability to measure and report on effectiveness of biodiversity management at a regional scale, and an enhanced audit function; and
6. A cultural shift in management approach from one that is input and activity output driven to one that is institutional learning, cyclical and outcome driven.

3. DELIVERY OF THE SERVICE AT THE REGIONAL LEVEL: CURRENT STATUS

The Nature Conservation Service comprises c. 46% ($72m) of the Department of Conservation and Land Management's 2005/06 budget, and is principally aimed at achieving the goal of conserving Western Australia's biodiversity with around XX% and XX% of Service funding being given to Regional Services and Science Division respectively. The planning and analysis process found that while there are discrete biodiversity conservation and research activities being delivered in all CALM regions, there is often a disfunction between delivery of activities and/or services and clearly defined outcomes at the regional and/or Corporate level.

Currently, the management paradigm generally favours a 'linear management style', which is increasingly tied to discrete funding proposals and sanctuaries with special audit requirements. Examples included funding associated with the Gascoyne-Murchsion Strategy, State Salinity Strategy, fire management, and marine conservation reserves program. This approach, due to current organisational and project management arrangements, has the tendency to separate decision making on key programs across divisions, limits involvement between workgroups, lacks a feedback or evaluation loop, and relies heavily on professional intuition to make judgments and gauge success or failure. At the same time, this approach also reduces flexibility of managers to deal with emerging priorities as funding is tied to specific problems or services, often irrespective of scale or boundary requirements. Another feature of this style of approach is an absence (or weak) cross-boundary management arrangements and central co-ordination – fundamentally caused by resources being allocated to work groups (cost centres) rather than to encourage integration and delivery by multidisciplinary groups to achieve multiple outcomes. It often lacks clear, quantitative goals and/or objectives or that there is a lack of understanding across management scales of expected outcomes.

This results inconsistencies in approaches between regions in the general management of conservation reserves and ecosystem/landscapes, often as a result of nebulous management goals and idiosyncratic treatment of threatening processes. This has led to fragmentation of effort, inefficiencies and an inability to address system-wide threats or threats that need to need to be approached with consistently across regional boundaries. Restricted and limited funding has also contributed to some uncoordination across regions for some programs, such as turtle management,

Western Shield, and introduced animal control, which is compounding inconsistencies. In addition, a management framework for salinity management has been slow to be put in place.

Another symptom of this approach is a poorly developed strategic framework for determining research and information needs to address management problems or policy requirements. Hence, most biological inventories and assessment work is generally *ad hoc*, and lacks structure and standards, and of more concern fails to deliver secondary analysis to assist management. General biological surveys of biota and identification of threatened ecological communities are of particular concern. Resource condition information to determine management targets (especially at an ecosystem and landscape level) and demonstrate success in achieving desirable outcomes is generally lacking. The information gathered is not usually held corporately and can be difficult to access.

Although CALM acknowledges the value of an adaptive management philosophy, few operations have an explicit active (experimental) adaptive management approach that clearly drives a cycle that describes management goals, proposed actions, and processes to determine success of implementation or an inclusive evaluation phase that informs future directions after prescribed actions. There is also a lack of State-level adaptive management framework.

The success of aspects of the Western Shield program, recovery of threatened taxa, and some projects, such as those being undertaken at Lorna Glen in the Goldfields to recovery native fauna (control of introduced animals, fire management and reintroductions) has demonstrated the potential value of the adaptive management approach; albeit they are of limited scope and haven't fully established completion of cycles.

There is a large disparity in effort between tasks associated with sociopolitical requirements, often with no obvious direct biodiversity conservation outcomes, and requirements for strategic research and management to achieve measurable on-ground outcomes. Consequently, scale and intensity of effort needed to address system-wide threats (estimated for some regions to be ten fold from current investment projections) suffers at the expense of immediate socio-political requirements and the diversion of skilled staff and limited available resources. This situation various between regions and in general terms the higher the people population size within a region and development pressures the greater the division. More than often, the costs and services associated with these tasks are insufficiently recognised and inadequately described in service-provision agreements.

In general terms, the Swan and South West regions, and South Coast Region to a lesser degree, are largely in a reactionary paradigm with a high level of sociopolitical demand on Nature Conservation Service resources from the general public, neighbours, Government support and interdepartmental involvement often through land use planning processes. Nevertheless, these regions are equally in an implementation phase, compared to the more remote regions where information and technical capacity is limited, for the recovery of threatened taxa and ecological communities, fire management, and forest management in particular. However, there is a high level of benign neglect of management for many conservation reserves.

In contrast, the Kimberley, Pilbara (except for some aspects of marine conservation), Goldfields and Midwest regions remain in an information and data gathering phase with limited demonstrable on-ground activities (often linked to discrete State funding) to achieve biodiversity conservation. In general, there are limited, systematic, investigation being undertaken to resolve the status of

threatened taxa and ecological communities, and hence what has occurred in the past has been largely *ad hoc* or unsystematic. In addition, there is limited basic quantitative population data for exotic pests and related impact data on biodiversity conservation values, as well as a poorly developed framework to identify priorities for biological benchmarking and to determine trends in assets and threats. Consequently, planning and implementation of activities are restricted in extent and limited by technical capacity and available resources. Notwithstanding this situation, there has been limited success in control of weeds, and some initial encouraging work in preparation for fauna introductions as noted above.

Considerable effort goes into projects with tied to funding such as the Gascoyne-Murchison Strategy, and more recently to fire management, with many activities unaligned to a set of clear biodiversity conservation outcomes. In some of the rangeland regions, two thirds to three quarters of conservation reserves are managed by benign neglect due to the focus of tied expenditure and lack of resources.

On the other hand, the Wheatbelt and Warren, in comparison are data rich with ???????

No region has an effective comprehensive monitoring system in place to demonstrate success in meeting biodiversity condition targets, other than some threatened taxa recovery work, or a comprehensive information management system that provides a sound decision-making platform for managers/leaders, where storage and collection of data/information can be consistent between regions. Nor are there a State level frameworks and guidelines to assist in these arrangements. Due to lack of biodiversity condition measures and data, landscape and ecosystem targets for biodiversity, in particular, are absent and hence detailed three year outcome targets were unable to be developed or identified for the Nature Conservation Service regional plans at this stage.

The planning and analysis process found that opportunities exist to:

- Invest in multidisciplinary teams to achieve multiple outcomes and address problems at appropriate scales – including biological and sociopolitical.

- Better connect biodiversity conservation and research activities between the divisions of Regional Services, Nature Conservation and Science;

- Clearly define biodiversity outcomes at the regional level and link with conservation targets and actions for a range of scales and assets;

- Remove detrimental inconsistencies in approaches between Regions in the management of conservation[PV1] reserves, often as a result of unclear management goals, and differences in the treatment of threatening processes, which is leading to fragmentation of effort and inefficiencies;

- Implement a more fully explicit active (experimental) adaptive management approach at a regional scale, which clearly outlines a cycle of inclusive decision-making where goals that describes management goals, proposed actions, and processes to demonstrate success of implementation and an inclusive evaluation phase that will inform future directions;

- Develop a complementary State level adaptive management framework aimed at integrating decision making on key programs across Divisions, and increase involvement between

workgroups, facilitate learning and feedback, and reduce the reliance on professional intuition to make judgments and gauge success or failure, and provide a reporting framework to demonstrate outcomes and outputs;

- Showcase and build on the success of programs such as Western Shield, the recovery of threatened taxa and landscape restoration trials such as those being undertaken at Lorna Glen in the Goldfields to recovery native fauna (control of introduced animals, fire management and reintroductions);

- Establish processes and priorities to systematically collect (survey) and store biological condition data and information, and utilize it to determine biodiversity targets (especially at an ecosystem and landscape level), conservation status of taxa and ecological communities, and demonstrate success in achieving desirable outcomes;

- Better manage the largely reactionary paradigm that exists in the south western regions where there is a high level of sociopolitical demand, and reduce disparity in effort between tasks associated with sociopolitical demands, many with no obvious direct biodiversity conservation outcomes, and requirements for strategic research and management to achieve measurable on-ground biodiversity outcomes;

- Ensure discrete funding, such as the Gascoyne-Murchison Strategy, State Salinity Strategy and more recently fire management, are aligned to a set of clear biodiversity conservation outcomes and goals, rather than output-driven actions; and adequate funding for central coordination to achieve standards and allow reporting; and

- Provide an effective and comprehensive information management system to demonstrate success in meeting biodiversity targets, and provide a sound decision-making platform for managers/leaders, where storage and collection of data/information can be consistent between region and easily accessible.

4. SUMMARY OF PLANNING OUTCOMES

4.1 Nature Conservation Service regional plans

Nature Conservation Service regional plans provide the basis for an integrated Department wide response to biodiversity decline, and provides an effective action framework and basis for a communication plan. The planning process has better empowered staff by building confidence to implement biodiversity management and research, and reinforcing some priorities while at the same time identifying emerging priorities for the Service for all Divisions.

The regional plans also provide detailed activities for the development of service-provision agreements between the purchase-providers and the Director of Nature Conservation, which can be measured and linked to outcome-based management. It will also assist in the development of a broader business case for biodiversity conservation, and will assist in identifying priorities for a State biodiversity strategy.

4.2 State level priorities

A fundamental change in delivery of the Nature Conservation Output is required to achieve the Nature Conservation Service's aspirational goal, and three year outcome targets. This will require a new approach to the way business is conducted in regions, supporting Divisions and better relationships between respective working groups, including planning and managing according to bioregions and grouping of bioregions and utilizing the WA Biodiversity Audit.

The key policy directions and institutional changes proposed at a State level to achieve outcomes and improve overall effort to address biodiversity decline at a regional scale are:

1. Refine the active adaptive management framework for major programs/projects that identifies management and science goals at a regional scale and integrates research, planning, management and monitoring activities so it can be adapted as a .....?;
2. Improve coordination and management of system-wide threats to biodiversity by the establishment of multi-divisional (disciplinary) teams for regional delivery of management responses to abate system-wide threats of introduced species (feral camels, equines, feral pigs, *Phytophthora* species, introduced plants), inappropriate fire regimes and climate change, including the development of a risk assessment that will provide regional priorities for investment;
3. Identify key research priorities and development of systematic, strategic investigative programs for knowledge creation, especially for the Kimberley, Pilbara, Goldfields and Midwest regions, in order to provide adequate and relevant ecological information base for informed on-ground management decision making, determination of conservation status of taxa and threatened ecological communities and to develop biodiversity outcome targets;
4. Establish a marine management steering group to bring about improved marine conservation outcomes, consistency in regional approaches and maintaining standards, and better allocation of funding and integration with other aspects of the Nature Conservation Service;
5. Establish an internal audit function to gauge effectiveness of management, develop and refine monitoring and evaluation systems, and coordinate reporting;
6. Undertake a gap analysis and establish a formal conservation system and biodiversity planning function to identify priority landscapes for *in situ* biodiversity management and recovery, maximize the opportunity for biodiversity to adapt to climate change, and identify reserve acquisition priorities;
7. Improve processes for listing of threatened taxa and ecological communities listing, including development of a systematic approach to identification of threatened ecological communities, listing of priority taxa and ecological communities, and improved monitoring systems for measuring recovery outcomes;
8. Develop a consistent information management system for storage and retrieval of data, and reporting, and which will provide a framework and standards for collection of data; and
9. Development and implement a coordinated communication plan to build a constituency for biodiversity conservation within the Department and with external key stakeholders and decision-makers.

4.3 Regional investment priorities

The Nature Conservation regional plans have been developed with the narrow focus of identifying biodiversity values that are in decline (threatened); the minimum response required and timeframes for them to be stabilised and/or recovered, and for biodiversity assets in relatively good condition to

maintain biodiversity values. Particular attention has been given in the planning process to ensure that:

- Landscape and seascape, protected area system and ecosystem scale actions were identified that if implemented will slow their rate of decline and the attendant escalating cost of providing palliative care for an increasing number of threatened ecological communities and species; and
- The actions proposed will impact directly upon the desired outcome, constitute clear and measurable deliverables and do not include wish lists of nice to do and feel good outputs.

Each Nature Conservation Service regional plan has a synopsis that provides a summary of key priorities, timeframes and budget information. The Plans also detail candidate actions that should be completed to meet three year outcome targets.

The Plans were analysed to identify actions characterized as:

- Being of a higher order i.e. will contribute to the required management paradigm shift; contribute to a landscape; protected area system or ecosystem scale response and will have an impact on achieving desired outcomes rather than producing outputs;
- Cited in five or more of the Regional plans;
- Little or no action is being taken to date due to a lack of knowledge and/or funds;
- During implementation will both require and benefit from central coordination by the Nature Conservation Division and input and collaboration with Science Division;
- Have the potential to contribute to Regional and Departmental capacity building i.e. to be successfully implemented some people with requisite technical skills and knowledge will need to be recruited; and
- Require the development of integrated widely accessible central information systems and data bases.

4.3.1 Priority cross bio-regional actions

The highest priority cross-regional candidate actions are listed below together with their clear short term, measurable deliverables:

[Delete the highlighted sections and insert a "Themes" based table of proposed actions]

1. Undertake a gap analysis and refinement of conservation the Region's reserve system and priority ecosystems and further development of instruments for, and expand engagement in, off-reserve biodiversity conservation programs.

   Deliverables: A concise scientifically designed and described reserve system that forms the basis of effective and efficient land acquisitions and biodiversity protection

2. Complete targeted biodiversity inventories and develop protocols for, and measure biological and ecosystem (includes wetland) condition benchmarks and trends.

   Deliverables: Clear scientific and economic measurement (based upon accurate descriptions of the biodiversity assets, their value and threats to them) of the effectiveness

of the State's investment in biodiversity conservation and protection and of CALM's adaptive management processes.

3. Complete a range of targeted risk assessments (exotic pests, weeds and diseases) and develop management responses, including targeted collection of quantitative population data on exotic pests (especially large herbivores), weeds and diseases (inc. benchmarks, distribution, density and impact) and the preparation and implement of response plans.

   Deliverables: Effective and efficient eradication and control programs that demonstrably improve the protection and conservation of biodiversity.

4. Establish past fire regimes and management practices and determine, apply and monitor appropriate fire regimes, including limiting the frequency and extent of wildfires.

   Deliverables: Effective and efficient fire management and wildfire suppression programs that demonstrably improve the protection and conservation of biodiversity.

5. Investigate and resolve the status of threatened ecological communities and threatened taxa and develop and implement recovery plans for given Threatened species.

   Deliverables: Effective and efficient allocation of funding to high priority recovery plans for species that are widely acknowledged as being threatened with extinction.

4.3.2 Current and Proposed Investment

The Nature Conservation Service regional plans clearly describe where the Department should be within three years and includes an estimate of the investment required. A fundamental requirement will be to build the capacity within the Department to effectively and efficiently deliver the actions described.

Each Nature Conservation Service regional plan has a resources section and summary spreadsheet that describes the candidate actions in the following terms:

- One-off (including the period over which it will extend) or ongoing (over the three year life of the plans);
- Action status - nil action, part action or fully actioned;
- Existing budget (including source of funds);
- Total budget required to implement each candidate action; and
- The gap in funds between current and proposed levels.

The Regional Nature Conservation service plans clearly demonstrate that the terrestrial biodiversity assets are in the greatest need of urgent investment whilst the majority of the marine systems are in relatively good condition with the current management focus being on, developing and promoting parks, and monitoring condition as the basis for determining any future decline and the subsequent development of appropriate responses.

Table 1 – Investment Summary (see also figure 1) is a summary by CALM administrative region and for the whole of Western Australia of the current funding, the required annual investment and the

funding gap by five biodiversity asset classes (land and seascapes, protected area system, wetlands, ecosystems at risk, and species at risk)[4].

Figure 2 shows the scale and nature of increased investment proposed in the plans by region and for the State, the level of investment by biodiversity asset class by region and for the State, and the varying level and impact on capacity to perform direct nature conservation actions of the current socio-political effort required across of the regions.

An increase in annual investment in the order of $100m (taking total annual investment on direct nature conservation actions to $125m pa) will enable 642 targeted actions to be implemented that will initially slow the decline in Western Australia's biodiversity and ultimately lead to its recovery. It is important to recognise that the initial investment will fall once one-off actions are completed and the rate of decline slows. On a proportional basis:

- The smallest increase in investment ($2.5m) is needed in the Warren and South West ($5.1m) regions which are relatively small in area and where a high proportion of the landscape contains native vegetation that is intact and in good condition. The South West region also has a high and increasing number of important remnants, that are under pressure from urban development. The emphasis these two regions is on maintaining currently intact and healthy landscapes and ecosystems and in so doing minimise the need to engage in future high cost taxa specific recovery actions;
- Mid-range investments are needed in Goldfields ($8.2m), Pilbara ($11.8m) and Kimberley ($7.9m) regions. These regions contain vast areas of biodiversity that require management where early investment in maintaining landscape and protect area system function will address the current trends in the increasing numbers of threatened taxa requiring attention; and
- The greatest investment is needed in the Midwest ($16.4m), Swan (16.3m), South Coast ($13.3m), and Wheatbelt ($13.7m) regions. The Pilbara and Mid West regions are impacted by past agricultural land use policies and a range of invasive species all impacting on landscape, protected area and ecosystem function. The Mid West, Swan and South Coast regions have very high and increasing numbers of threatened taxa many of which require individual response plans. Landscape function has been destroyed across ~85% of the Wheatbelt region leaving many threatened remnants and individual threatened taxa to be protected until such time as landscape reconstruction programs prove effective.

23.8% ($29.9m) of the required candidate actions ($126.0m) are currently funded or partly funded from within existing allocations. The 2005-2006 allocation to the nature conservation actions is derived from more than thirteen Purchasers[5]. The Nature Conservation Output providing $XXm. [The Nature Conservation Service budget for 2005-06 is ~$73m and the allocation to the Regional Services Directorate is $XXm].

[4] Naure Conservation Division and Science Division current expenditure on implementing direct nature conservation actions is not included.

[5] Funding sources:
NC – Nature Conservation; SFM- Sustainable Forest Management, NRM - Natural Resource Management, PVS-Parks & Visitor Services, UCL - Unallocated Crown Land funds, MRWA – Mains Roads WA, GMS - Gascoyne Murchison Strategy funds, Portman - Portman Mining (Ministerial conditions), Fire – additional allocation ,SS - Salinity Strategy, IE – Indigenous employee, WS – Western Shield, CR – Crown Reserves Management, SCRIPT, Cane Toad

Approximately or 21.1% ($7.2m) of the currently available funding for Nature Conservation outcomes is deployed on implementing indirect nature conservation actions. On a proportional basis the highest commitment is in the Goldfields (44.6%) and South West (40.6%) regions. In the Goldfields this reflects the overall small budget and low staff levels available to manage vast areas where there is a significant involvement in environmental impact assessment associated with mining operations. In the South West region there is a strong commitment to using fire to protect neighbours and to engage in environmental impact assessments associated with urban development.

Appendix XX

LIST OF STAFF CONTRIBUTING TO THE NATURE CONSERVATION SERVICE REGIONAL PLANS

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Ian Abbott
Ian Kealley
Ian Radford
Ian Walker
Ian Wilson
Jeff Richardson
Jennie Cary
John Carter
John Gillard
John Watson
Julie Patten
Karlene Bain
Keith Hockey
Keith Morris
Kelly Gillen
Kevin Vear
Kevin White
Kim Kershaw
Kim Williams
Klaus Teidemann
Lachie McCaw
Lyndon Mutter
Mal Grant
Margaret Byrne
Mark Barley
Mark Cowan
Mark Garkaklis
Martin Rayner
Max Haste
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