Terrestrial and Marine Management System Project

Review of Regional Nature Conservation Strategies

Prepared for the

Department of Environment and Conservation

by

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1. Overview

Ecosystem Solutions Pty Ltd was contracted by the Department of Environment and Conservation (DEC) to undertake the following tasks:

1. Review DEC's nine Nature Conservation Service Regional Plans and consolidate:
    a. Nature Conservation themes;
    b. Parameters for each theme;
    c. Indicators to be measured; and
    d. Attributes to be assembled.
2. Match the Regional Adaptive Experimental Management projects and the draft 100-year Biodiversity Strategy with the output of Task 1.
3. Develop a Strategic Nature Conservation Service Plan; and
4. Develop a planning cycle and a reporting and accountability protocol for DEC's Nature Conservation Service.

This report focuses on the first and second tasks and provides details of the approach used, the results and recommendations to progress this project.

2. Process

The process involved reviewing all of the nine strategies and determining a method for grouping similar styled outcome targets and candidate actions. From this grouping it was anticipated that consistent parameters and attributes would become evident and from these elements, a suite of appropriate indicators could be developed. Various analyses would then result in the development of identified gaps, alignment with the adaptive management projects, links to the draft 100-year strategy and the clarification of a reporting cycle.

a) Asset Hierarchy

In order to group similar style targets, a rule set was developed to ensure consistency in ensuring similar assets are grouped together in the first instance. This rule set (Table 1 and Figure 1) enabled specific assets to be classified together and allow consistent analysis and groupings. An asset could only be allocated to one category. If the target was a species or ecosystem at risk, they were categorised accordingly, regardless of tenure or location. Similarly

wetlands were classified as such, regardless of tenure. All of the targets were re-classified utilising the organisation rules outlined in Table 1.

Table 1: Asset Hierarchy Descriptions.

Organisational Level	Definition
Species at Risk	Species at risk regardless of tenure.
Ecosystem at Risk	Ecosystems at risk regardless of tenure.
Wetland & Significant Riparian Habitat	Recognised Wetland area regardless of tenure or location. Area readily identified as riparian habitat for taxa of significance. Note that the wetland or riparian habitat needs to be the focus of management, not a species or TEC found within it. If this is the case, then the target is moved to its appropriate category.
Protected Area	The conservation asset is the reserve or area within a current recognised WA or Federal protected area. If the focus is a species, TEC or wetland, it is not placed in this category.
Landscape/Seascape	The focus of the target is an attribute of a biodiversity asset that can be reasonably targeted at a landscape or seascape scale of management. Area of conservation significance at a larger scale that is not within a recognised protected area.

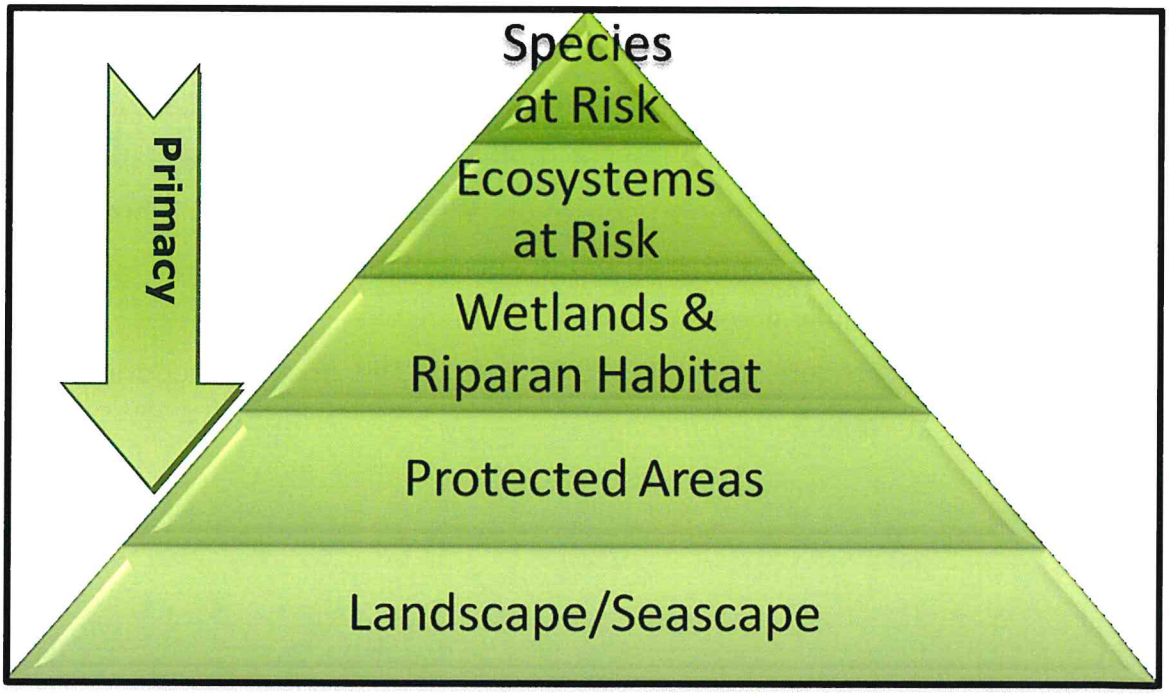

Figure 1: Asset Hierarchy

b) Outcome Targets

A number of models were considered for grouping the Outcome Targets. It was decided that the most effective approach was to bring together targets based on their anticipated outcome, i.e. what the target is intending to achieve. Analysis of the types of targets revealed that five categories could be defined.

- Condition targets: Those targets that refer to an anticipated future condition of an asset or group of assets.
- Conservation Status targets: Those that refer to an expected change in the conservation status of an asset or a group of assets.
- Abundance targets: Targets that aim to maintain or increase the numbers of individuals or populations of taxa or communities or and increase or maintenance in area or extent of populations or asset group (for example, native vegetation type or association).
- Threat reduction targets: Targets that refer to a specific threatening process that impacts upon taxa, community or asset group. Ideally this type of target should focus upon the anticipated outcome on the asset, but this is not always the case.
- Process targets: These are targets that require some process be followed for the outcome to occur, such as the change of tenure (the development or establishment of protected areas) or the designation of an area as a specific biodiversity asset (e.g. natural diversity recovery catchments). These targets also include those outcomes where investigations or surveys to determine the presence or absence of rare or threatened taxa/communities or the instigation of processes to have taxa or communities formally listed.

Each target was re-categorised to fit within one of the above categories. The results are shown in Table 2.

Table 2: Outcome Targets by Type

Outcome Targets	Condition	Conservation Status	Abundance	Threat Reduction	Process	TOTALS	Percentages
Landscape and Seascapes	29	0	3	0	1	**33**	**17 %**
Protected Areas	31	0	3	1	1	**36**	**19 %**
Wetlands and Significant Riparian Habitat	19	0	2	1	0	**22**	**12 %**
Ecosystems at Risk	21	0	1	0	3	**25**	**13 %**
Species at Risk	6	9	49	3	7	**74**	**39 %**
TOTALS	**106**	**9**	**58**	**5**	**12**	**190**	
Percentages	**56%**	**5%**	**31 %**	**3%**	**6%**		

A checklist of questions was developed to ensure consistency during the review of outcome targets (Table 3).

Table 3: Outcome Target Checklist

Target Checklist
• **Does the target reflect specific desired accomplishments?** • **Can the progress towards the target's completion be measured?** • **Is the target realistic and achievable with the 3 year period and within available or realistically available resources[1]?**

[1]The assumptions made during the development of the strategies are not clear. Some are pragmatic and appear based on current resource levels, while others are clearly aspirational in focus. For consistency, current levels of resources were used for the review.

- **Does the target represent a high biodiversity priority asset or area?**
- **Does the target specify a result rather that an activity?**
- **Will the achievement of the target contribute to the aspirational goal of the division?**

c) Candidate Actions

It was decided to "group" candidate actions based on the focus of the action. Twelve groupings were used as the initial filter for actions.

- Conservation Direct Actions: Direct physical actions required for conservation management, for example, translocation, captive breeding and direct actions recommended in appropriate recovery plans.
- Threat Abatement Direct Action: Those direct actions that target known but broad threats to assets.
- Pest animals and Environmental Weeds: Actions related to pest animals and environmental weeds.
- Phytophthora Dieback: Actions involved in the planning, implementation, or monitoring of issues related to *Phytophthora cinnamomi* and related species.
- Fire: Actions related to the planning, research, monitoring and implementation of fire related issues.
- Hydrological Issues: Actions related to salinity or issues such as mine de-watering and other impacts on ground water levels.
- Planning: Actions related to the development of management plans, recovery plans or the updating of existing plans.
- Data Collection & Survey: Those actions that focus on surveys for new populations of taxa or communities, surveys to confirm the abundance or distribution of taxa or communities and actions involved in the compilation and analysis of existing data.
- Monitoring management actions: Monitoring to obtain data on the results of management actions.
- Research: Actions that aim to obtain new information that can assist in best conservation management.
- Process: Those actions related to:

- The refinement of existing processes within Nature Conservation Service;
- Integrated Land Management, e.g. approvals – development, mining, etc;
- Land acquisitions, covenants, etc; and
- Public Participation processes.

- Developing new processes or protocols: Those actions that refer to the need to develop new products, frameworks or protocols within Nature Conservation Service.

All the nine strategies candidate actions were grouped into these categories. Table 4 shows the breakdown of candidate actions.

Table 4: Candidate Actions by Action Type

Candidate Actions	Conservation Direct Action	Threat Abatement Direct Action	Feral Animal/Weed Control	PC	Fire	Hydrological issues	Planning	Data Collection/Survey	Monitoring management actions	Research	Process	Defining New Processes protocols	TOTALS	Percentages
Landscape and Seascapes	5	10	33	4	23	11	12	43	10	1	39	24	**215**	**25%**
Protected Areas	14	7	44	6	30	5	15	17	9	6	49	8	**210**	**25%**
Wetlands and Significant Riparian Habitat	6	1	6	0	1	6	12	13	5	0	7	0	**57**	**7%**
Ecosystems at Risk	9	10	10	2	1	8	13	21	10	2	10	1	**97**	**11%**
Species at Risk	44	13	26	2	5	1	36	81	14	5	37	2	**266**	**31%**
TOTALS	**78**	**41**	**119**	**14**	**60**	**31**	**88**	**175**	**48**	**14**	**142**	**35**	**845**	
Percentages	**9%**	**5%**	**14%**	**2%**	**7%**	**4%**	**10%**	**21%**	**6%**	**2%**	**17%**	**4%**		

This initial grouping indicated that further separation of some of the actions were required. This was because there was still not sufficient similarity or consistency in the scope and style of many of the actions to enable a thorough analysis and determination of parameters or attributes.

This further breakdown of actions is listed in Appendix A.

A checklist was used to ensure consistency in the review process (Table 5).

Table 5: Candidate Actions Checklist

Actions Checklist
• **Are the Actions clearly linked to Outcomes?** • **Can the Action's progress be measured?** • **Can Action's milestones be tracked?** • **Is the action clear and specific?** • **Can the Action be realistically achieved within the 3-5 year time-frame, based on current resources (Time, Staff, Expertise, Funding)?**

d) Regional Adaptive Experimental Management Projects

An initial review of the regional adaptive experimental management projects was conducted. Most are not complete and are at stages where linking them to the regional nature conservation strategies is not possible.

Two of the region's projects were not available at the time of the review and all, but one, did not have sufficient information in their project design section to fully understand the projects and their intended outcomes in detail and consequently determine how they link to the nature conservation strategies.

After discussion with the DEC project managers, it was agreed to defer the review of the projects until they are updated.

e) Biodiversity Conservation Strategy for WA: Draft

The draft Biodiversity Conservation Strategy for WA was reviewed to determine where the regional nature conservation strategies nest within it. During the review, the Assistant Director of Nature Conservation advised that amendments of the state document were to be undertaken. These changes would affect the Key Strategic Directions (KSDs), therefore only a preliminary review was conducted, based on the KSDs in the initially published draft document. The

main result of this review was to highlight some areas of the WA strategy that do not appear to be considered within the regional strategies.

3. Discussion

After the initial reading of the nine regional strategies, a number of issues were highlighted:

- Even though each strategy had the same format of breaking down assets into rudimentary levels of biological organisation or management area (i.e. Landscape/seascape, Protected Area, Wetland and significant riparian habitat, Ecosystems at risk and Species at risk), there was no consistency between regions on where specific assets were categorised. For example, if a species or ecosystem at risk occurred within a national park it was not always clear whether the 'asset' was included in the protected area category or into the ecosystem or species at risk category.
- Both targets and actions vary in their scope, ranging from very broad "catch-alls" to very specific actions within an individual taxa recovery plan and all possibilities in between.
- Links between the 3-year outcome target and the candidate action were not always clear or logical.

a) Outcome Targets

Departmental papers provided for this project defined Outcome Targets as the preferred three-year Resource Condition Target for identified biodiversity values. This was the assumption used throughout the review process.

A number of issues were identified.

- A significant number of the targets are not specific; they refer to multiple assets and involve generalities.
- There is no consistency in terminology used between the regions. For example, landscape/ecosystems/ecoscapes/management zones all seem to be used to refer to the same thing. Feral animals are referred to as invasive animals, feral animals, introduced animals and pest animals. Weeds are referred to as weeds, introduced plants, pest plants and environmental weeds.

- Fifty six percent of the targets refer to an anticipated or desired condition of a biodiversity asset. The term "condition" is not defined and in most cases is not measurable. "Condition" is not consistently used between regions or between targets The term "condition" appears to be used as a "catch-all" phrase used to indicate a general enhancement in the state, abundance, distribution or vitality (or health) of an asset, without having to specify the actual attribute that is the focus of the target and in many cases the specific asset that is targeted. This point was more obvious in the broader landscape and reserve sections of each strategy, possibly as a consequence of a lack of knowledge and/or skills in landscape ecology.
- In many cases the targeted assets are broadly defined (for example, native vegetation as opposed to specific vegetation types and the generic term "landscape" or "ecosystem" rather than explicitly defined areas or systems.

Given these issues, particularly the general nature of some targets, it was not possible to develop a suite of similar targets that encompasses all of the nine region's strategies. However, within the categories, some similar types of targets were identified. These are summarised in Figure 2.

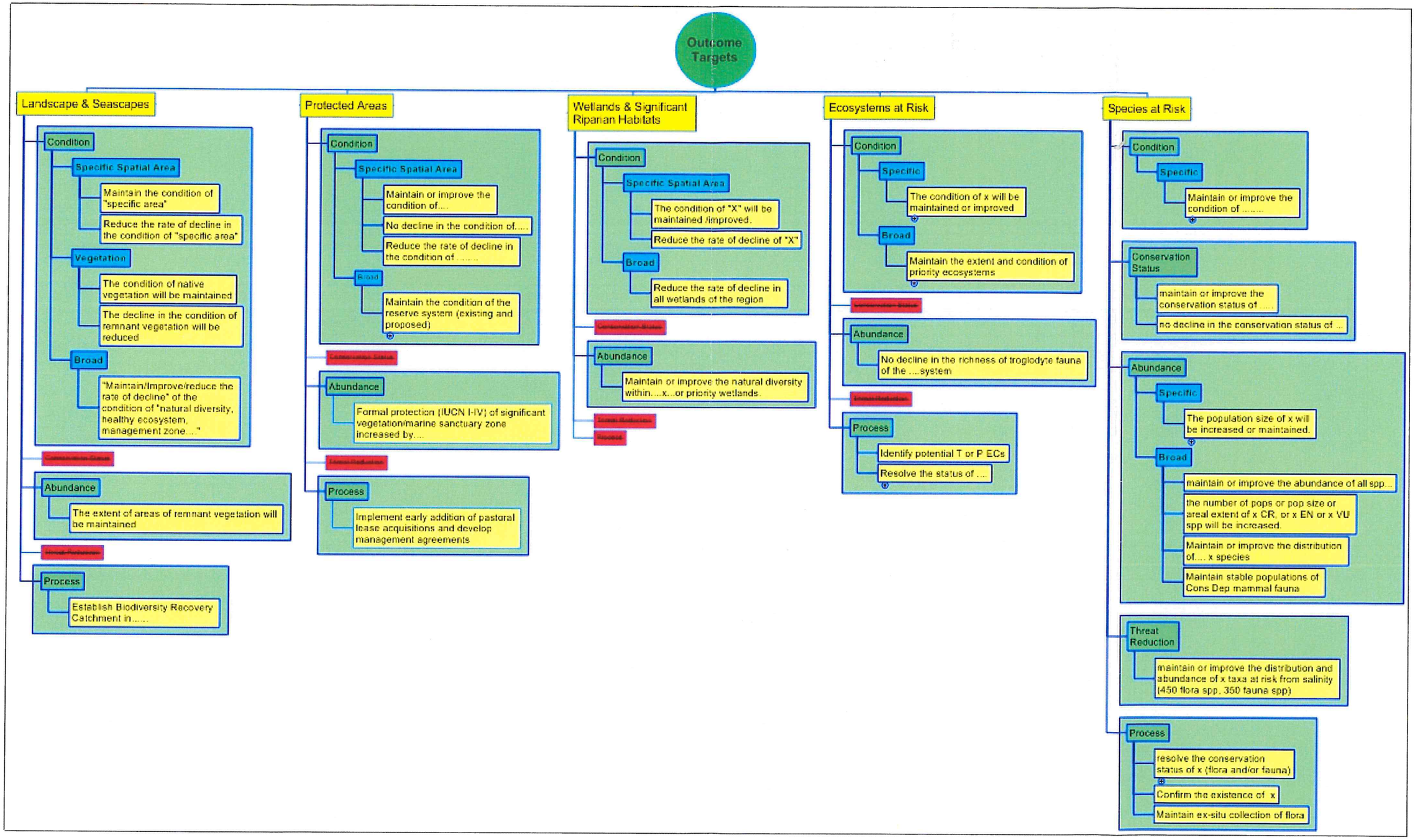

Figure 2: Similar Outcome Targets

b) Candidate Actions

The nine regions were asked to develop the minimum and immediate candidate actions that were required to bring about a desired change towards an improved resource condition. Candidate actions were to be written "in a manner that would quantifiably describe what, where, why and who parameters for activities and how success was to be measured" (Departmental Briefing Papers). It was in this context that the actions were reviewed.

A number of issues were identified within the Candidate Actions.

- A significant number vary between specific tasks and very broad generalisations. They often involve multiple tasks and areas of focus. For example, *"Develop a programme for measuring declining water quality, habitat fragmentation, weeds, pests and disease"*. This type of action is unlikely to be achieved within the timeframe and is too broad in its focus.
- Many of the actions are unrealistic, both in the proposed timeframe and with the current level of resources. However, this point links back to the overall assumptions used as to the aspirational or practical scope of the strategies.
- The mix of actions and the assets they are directed to is very narrow in some regions. For example, in the Pilbara region species actions focus only on marine fauna and priority listed flora, Swan region has no actions focusing on protected areas and the Warren region's protected areas actions only relate to one area (Walpole-Nornalup). While these areas of focus may be appropriate for those particular regions, the strategies need to reflect the rationale for those decisions.

Given the breadth and degree of differentiation between region's candidate actions, it was not possible to develop a set of consistant attributes and measures that would be both useful and relevant.

c) Gaps Summary & Further Issues

A number of gaps and further issues to be resolved were discovered. Note that it was not within scope of this review to develop recommendation or solutions to those issues, merely to highlight them.

Initial issues

1. ***The initial assumptions used in the development of the strategies are not clear.***

While the preface and the synopsis within each strategy is the same, it is not clear whether the focus of the strategies is to be aspirational, i.e. something to aim or aspire to, or practical, i.e. written in a context based on current levels of staffing, knowledge, skills and funding. Differing regions appear to have used different assumptions on this issue. The context for all of the nine strategies needs to be agreed upon and the strategies re-drafted to align with this perspective.

2. ***There is no overall consistency in the organisation of asset categories.***

A rule set needs to be developed to ensure that similar assets are categorised in a consistent manner throughout the nine strategies.

3. ***The links and the transitions between Outcome Targets and Candidate Actions are not always clear and logical.***

Specific candidate actions need to clearly be linked and nest within an appropriate and logically based outcome target. In many cases it would appear that candidate actions were inserted into the strategies based on previous conventions or where they seemed to "fit best" rather than based on a logical hierarchy of nesting actions within well defined and strategically appropriate expected outcomes.

Outcome Target Issues

4. ***Many of the targets are not specific; they refer to multiple assets and generalities. Consequently many of the targets, especially at the landscape/seascape level cannot be readily measured or monitored.***

Outcome targets need to reflect a specific desired accomplishment i.e. they need to specify an anticipated result, rather than a specific activity. Targets must be clearly defined, have a measurable component and be realistically based[2].

5. ***The targets contribution towards the Nature Conservation Service goals and the draft 100 year Biodiversity Conservation Strategy for Western Australia is not always clear.***

The location of where and how specific outcome targets nest within broader state and departmental policies, goals and strategies needs to be clear[3].

6. ***There is no consistent use of terminology between many of the regions.***

A consistent glossary and usage of terms is needed. It has been recommended that the glossary within the draft 100 year biodiversity strategy should be used for this.

7. ***Fifty six percent of the Outcome targets refer to "Condition". This is not defined and, in its current usage, is inappropriate as a target.***

The term "condition" is used as a catchall to refer to an anticipated state of a suite of assets. This is particularly the case in the broader asset categories. For example, condition targets represent 90% of landscape targets, 86% of protected area targets, 86% of wetland targets and 84% of ecosystems at risk targets, while only 8% of species at risk targets refer to "condition". For the term to be relevant it needs to be stated in a context that can be measured or compared against a base level. This can include some measure of spatial arrangement or distribution (for example, extent, composition, function, connectivity etc.) or some measure of temporal dynamism (for example, time since fire, length of isolation or an agreed measure of disturbances). Regardless

[2] Even if an aspirational approach is adopted, the outcome targets should still be realistic within the practical context and scope of their intended outcome.

[3] While candidate actions also do not clearly link within these documents, it is assumed that clarifying the relationship between the regional nature conservation strategy's targets and the state's policies and goals, will automatically clarify the link between actions and the broader goals.

of the approach adopted, a consistent, logical and measureable metric is required if condition is to be used to define outcome targets.

If an agreed measure or definition of condtion cannot be settled, the term "condtion" should not be used and another, more specific metric should be adopted that reflects the outcome sought.

Candidate Actions Issues

8. ***Actions vary between specific tasks and very broad and generalised actions, often involving multiple tasks and areas of focus.***

Proposed actions need to clearly nest within their targeted outcomes, they need to be specific and related to single areas of focus and individual tasks or similar suites of tasks. Should an individual action require multiple discrete tasks, the action should be split with each task area becoming its own action.

9. ***Many actions are unrealistic in their proposed timeframes and with current levels of resources.***

It is unlikely that any region would be able to deliver an action such as "develop and implement a recovery plan for 23 taxa" within the anticipated 3-5 year timeframe, regardless of the available resources. Actions need to be reviewed with regards to the realistic probability of achieving them. The aspirational versus practical nature and scope of the strategies also need to be considered in this issue.

10. ***A number of regions do not include the breadth of the biological assets that would be within their region, in their actions.***

For example the Pilbara region's species actions only focuses on marine fauna and priority listed flora, while the Swan plan has no explicit actions for their protected areas. While this may be appropriate for a specific region, it should be explicitly stated that the other asset areas have been considered in their strategic planning and allocation of actions.

Future Issues

11. Where does Natural Resource Management (NRM) and its associated processes and involvement fit within the contexts of the regional nature conservation strategies?

A number of the Key Strategic Directions (KSDs) within the draft 100 year Biodiversity Strategy refer to increasing awareness and understanding of biodiversity and engaging people in biodiversity conservation. The link between these actions and the regional nature conservation strategies does not exist. These tasks consume large amounts of time and resources for regional nature conservation leaders and staff and are not included within the strategies. While this type of issue may be more operational in its context, it needs to be clarified within the regional strategies (even at a general level) how these two tasks fit together. This will be particularly important when the strategies are made public as regional NRM groups are highly likely to review them to determine their context (and potential impact) on both their strategic processes and future investments.

12. How will the Nature Conservation Service deal with outcomes where the responsibility for them crosses multiple regions?

Mobile and widely dispersed fauna and broader vegetation associations are unlikely to be restricted to the boundary of just one region, particularly in the southern areas of the state. The NCS needs to look at the potential of adjoining regions ranking similar biodiversity assets at different levels of priority. This could result in the appearance of a lack of consistency and communication through the strategies, particularly when the documents are made public. Rare fauna issues would likely be addressed through the appropriate recovery team, however some biodiversity assets that are not rare, for example Tuart Forest vegetation association, could hypothetically receive different levels of focus across adjoining regions. The NCS needs to be aware of the potential for this situation to occur and develop policy and protocols to guarantee consistency in logic, approach and responsibility.

13. Nature Conservation Service should investigate the development of protocols and guidelines for suites of conservation actions that multiple regions have identified as needing to be developed.

A number of the regional NC plans refer to the planning and implementation of regional scale conservation elements, such as fire planning for biodiversity, regional dieback response plans, regional weed and feral animal plans, development of vegetation benchmarks, etc. It would be preferable for state-wide consistency in the approach and development of these processess. This will enable a standardised and systematic approach to the planning and development of similar conservation actions. There are also a number of regions that refer to the development of new processes and protocols, such as developing biodiversity impact assessment procedures, developing classification procedures for ecosystems, developing decision making tools to determine priorities, etc. These processes need to be developed to ensure consistency and relevancy for the whole of the NCS, not just individual regions. A coordinated and cooperative approach to develop these procedures needs to be adopted.

d) Future Developments

The analysis revealed a number of inconstancies, gaps and further questions that need to be resolved. Ideally these issues should be considered before further work on this project continues. The breadth of both the targets and actions, at their current level of evolution, makes the determination of consistent theme parameters, attributes and measures unlikely to have significant practical application for the Nature Conservation Service. Similarly, the development of an overall Strategic Nature Conservation Service Plan, while possible, is unlikely to provide a feasible, realistic and achievable plan that is universally applicable to the nine DEC regions until further work is done to update their current NC Regional Plans.

In most planning processes, the production of a physical document is secondary to the development and evolution of the planning process. The fact that the Nature Conservation Service has nine regional nature conservation strategies and is currently actively involved in their refinement is to be recognised as a significant outcome to date. The gaps and issues identified during the review, while important in a state wide context, mainly involve issues of consistency and definition. They should not be seen as significant obstacles to the future development of sound, relevant and practical nature conservation strategies for the regions individually and the Nature Conservation Service overall.

4. Appendices

APPENDIX A

Candidate Actions Summary		
Landscapes and Seascapes		**No of Actions**
	Conservation Actions	1
	Threat abatement	11
	Feral/weeds	
	Feral Animals	25
	Weeds	8
	Phytophthora	4
	Fire	
	Planning	8
	Monitoring/Survey	8
	Implementation	5
	Response	2
	Hydrological	
	Groundwater (salinity, rising water tables)	7
	Water Extraction/Mining	1
	Knowledge	2
	Planning	11
	Data Collection/Survey	
	Assessment of existing knowledge	34
	Gather new knowledge	9
	Monitoring Management Actions	10
	Research	1
	Process	
	Land use Planning	3
	EIAs	10
	Clearing Applications	6
	Departmental processes	17
	Defining new processes/protocols	
	Information management	3
	NRM process	6
	Develop protocols or frameworks	15
Protected Areas		
	Conservation Actions	
	Specific	13
	General	3

Threat abatement		3
Feral/Weeds		
	Feral animals	30
	Weeds	16
Phytophthora		6
Fire		
	Planning	10
	Monitoring & Survey	9
	Implementation	10
Hydrological Issues		5
Planning		16
Data Collection/Survey		17
Monitoring management actions		9
Research		6
Process		
	General	13
	Participatory process	12
	Mining/EIA	11
	NRM/Off-reserve	2
	Information management	8
Defining new processes protocols		9
Wetlands and Significant Riparian Habitats		
Conservation Actions		6
Threat abatement		1
Feral/Weeds		
	Feral animals	4
	Weeds	2
Phytophthora		0
Fire		1
Hydrological Issues		6
Planning		12
Data Collection/Survey		13
Monitoring management actions		5
Research		0
Process		7
Defining new processes protocols		0
Ecosystems at Risk		
Conservation Actions		
	Specific	3
	General	6
Threat abatement		10
Feral/Weeds		

	Feral animals	6
	Weeds	3
Phytophthora		2
Fire		1
Hydrological Issues		8
Planning		13
Data Collection/Survey		21
Monitoring management actions		10
Research		2
Process		
	EIA/ Land planning	5
	Mining	1
	Listings	3
Defining new processes protocols		1
Species at Risk		
Conservation Actions		
	Specific	33
	General	12
Threat abatement		13
Feral/Weeds		
	Feral animals	26
	Weeds	0
Phytophthora		2
Fire		5
Hydrological Issues		1
Planning		
	Specific	33
	General	3
Data Collection/Survey		
	Specific	55
	General	27
Monitoring management actions		14
Research		5
Process		
	General	4
	Land use Planning	11
	Participatory process/Education	10
	Resolving status	6
	Information management	5
Defining new processes protocols		2