

Swan Region Strategy

for

Natural Resource Management

Appendix 19

**Swan Region Target Setting
and Prioritisation Process**

Target Setting Process

Introduction

The array of natural resources in the Swan Region and the associated multitude of issues involved in their management, means that it is essential that a transparent and transferable process is determined to enable prioritisation for targeted investment in the region's natural resources. The Swan Catchment Council has established a process to identify the key regional natural resource assets, determine the value of these assets and then determine the threats to these assets. Assessing the condition of natural resource asset values highlights the threatening processes to those assets and assists in the prioritisation of Natural Resource Management (NRM) objectives and targets.

Asset Based Approach

Assets are all the various uses of natural resources that are valued by society. An asset based approach to NRM enables management activities to be focused on the protection of high value natural resources. This approach is necessary to determine strategic investment at a regional scale that is targeted to give the highest returns. The intended outcome of this approach is that funding will be prioritised towards assets of greatest importance, following a comprehensive stakeholder engagement and community consultation process that asked the following questions:

1. *What are the natural resource assets in the Swan Region?*
2. *Why is the asset valuable (Environmental, Economic, and Social)?*
3. *What are the threats that will impact on the asset's value?*
4. *What is the current condition of the asset?*
5. *What is the aspirational target (>50 Years) for the asset?*
6. *What are the resource condition targets (10-20 Years) for the asset?*
7. *What are the management action targets(1-5 Years) for the asset?*
8. *How much will it cost to achieve these targets?*
9. *What is the scale, urgency and feasibility of mitigating the threats to the asset?*
10. *What is the capacity of government, community and industry to achieve these targets?*

Recognition of the interconnection of environmental, social and economic assets is paramount to the successful management of natural resources in the Swan Region. This process recognises six major natural resource asset categories in the region. The first four are principally biophysical in nature and are seen as the core primary natural resource asset categories:

- **Biodiversity:** including terrestrial and marine biodiversity
- **Land:** including geological formations
- **Water:** including waterways, wetlands and groundwater
- **Air:** for sustaining life support systems and protection of biodiversity.

The other two core asset categories have been identified to incorporate the interconnectedness of social and economic aspects with NRM. These have been identified as:

- **Cultural Heritage**
- **Capacity**

Natural Resource Asset Values

Most natural resource assets will have a collection of associated values. Values can be defined by as the worth, desirability, utility, or qualities on which these depend. The focus of this process are the 'qualities' on which the worth, desirability, or utility of the natural resources asset values in the Swan region depend. In recognition of the interconnectedness of NRM issues, the natural resource asset values in the Swan region have been grouped into three broad categories:

- **Environmental**
- **Economic**
- **Social**

Environmental Values

The term environmental value can be defined as:

Particular values or uses of the environment that are important for a healthy ecosystem or for public benefit, welfare, safety or health and which require protection from the effects of pollution, waste discharges and deposits (NWQMS: ANZECC and ARMCANZ, 1994, EPA 2003).

The primary environmental values of natural resource assets that have been identified in the Swan region are:

- **Natural diversity:** Genes, species, communities and life-supporting ecosystem services
- **Ecological function:** Ecological processes vital for the provision of ecosystem services and the survival and the continued evolution of living organisms.
- **Physical structure and habitat**

Economic Values

The community throughout the Swan Region derives a multitude of economic benefits from natural resources including:

- **Primary Industry:** Agriculture, mining
- **Secondary Industry:** Manufacturing
- **Tertiary Industry:** Services, tourism

Social Values

The natural resources of the Swan Region provide many social values such as:

- **Recreation**
- **Spirituality and culture**
- **Sense of Place**

Using the following scales natural resource assets were scored for their economic, social and environmental values described above:

Scale	Description
5 = Significant	Attribute contributes to the value of the asset at a local regional, state and national level
4 = Important	Attribute contributes to the value of the asset at local regional and state scale
3 = Moderate	Attribute contributes to the value of the asset at a local and regional scale
2 = Minor	Attribute contributes to the asset at a local level
1 = None	Attribute does not contribute to the value of the asset
0 = Unknown	Unable to answer

After scoring each value (economic, social and environment) an asset's overall value can be determined considering all categories.

An inventory of natural resource assets and their associated values has been developed through a comprehensive stakeholder engagement and community consultation process, also from the existing draft *Swan Region NRM Strategy (2002)*, technical reports, catchment management plans, action plans, State Government Agency data sets and other information sources.

Process for Prioritisation

The purpose of this process for prioritisation is to provide a transparent and transferable consultative framework that enables prioritisation of the region's NRM requirements by incorporating environmental, economic and social considerations. The Swan Catchment Council has developed the Swan Catchment Assessment of Needs (SCAN), a framework that provides a preliminary stage in a prioritisation process that involves all stakeholders in the prioritisation of the region's NRM requirements.

This approach has been based upon the Pressure-State-Response model (OECD 1993) developed by the Organisation for Economic Development (Figure 1), and adapted from the methodology developed by the

Western Australian State Government for the prioritisation of the State's waterway requirements (Water and Rivers Commission, 2002).

The Pressure-State-Response approach to prioritisation enables demonstration of how the Swan Catchment Council is integrating NRM requirements across natural resource asset categories in the region to address key threatening processes. It provides a structure for demonstrating how the Swan Catchment Council will address the causes rather than symptoms of natural resource degradation to mitigate against threatening processes. It also provides a foundation for consistency with an environmental management systems approach the Western Australian State Government approach to State of Environment reporting (EPA, 2003), and the Commonwealth Government approach to State of Environment reporting (Australian State of the Environment Committee, 2001).

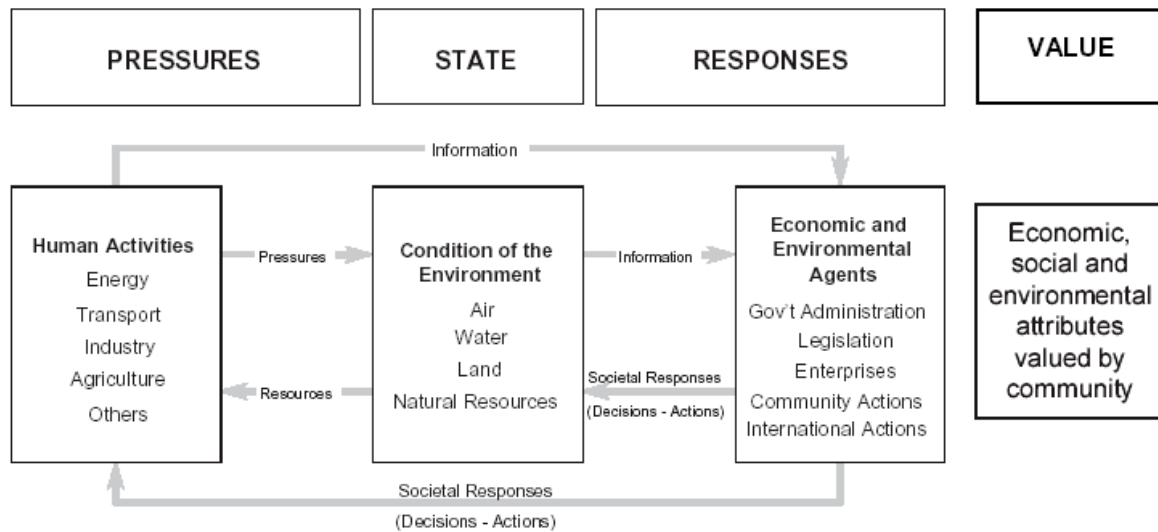


Figure 1: The Pressure State Response model (adapted from OECD, 1993)

Using the Pressure-State-Response approach process will enable alignment of monitoring and evaluation mechanisms at local, regional, state and national levels. This will provide:

- Clarification of the roles and responsibilities for effective and efficient integrated NRM
- Identification of priorities for management
- A basis for integrated monitoring and evaluation

An assessment of natural resource assets in the Swan Region using the SCAN method required the establishment of expert panels according to specific criteria for each of the following natural resource asset categories:

- Biodiversity
- Coastal and Marine
- Water
- Land
- Air
- Cultural Heritage

Pressures (Threats)

Pressures affect assets. Pressures are anything that damages the value of the assets. It is important to determine both the time until maximum impact and the extent of that impact on the asset's value using the following threat scales:

Severity

The level of damage to a biodiversity asset that can be reasonable expected within 10 years under the current circumstance.

Scale	Description
5	The threat is likely to destroy or eliminate the asset over some portion of the asset
4	The threat is likely to seriously degrade the asset over some portion of the asset
3	The threat is likely to moderately degrade the asset over some portion of the asset
2	The threat is likely to only slightly impair the asset over some portion of the asset
1	There is no threat affecting the asset
0	Unknown

Scope

The geographic scope of impact on the biodiversity asset at the site that can be reasonable expected within 10 years under the current circumstance.

Scale	Description
5	The threat is likely to be very widespread or pervasive in its scope, and affect
4	The threat is likely to be widespread and affect the asset at many of its locations
3	The threat is likely to be localised in its scope, and affect the asset at some locations
2	The threat is likely to be very localised in its scope, and affect a limited portion of the asset
1	There is no threat to the biodiversity asset.
0	Unknown

Temporal scale

The frequency of the periods and rate where the asset condition is deteriorated. Where pressures produce chronic and frequent impacts to the condition of an asset and/or spreads quickly, score high, and vice-versa.

Scale	Description
5	The pressure occurs constantly creating ongoing stress to the asset and reduces the condition of the asset. Or the pressure occurs at a temporal rate at which the system is not adapted to respond. Or the threat spreads at a fast rate over geographic distances.
4	The pressure occurs frequently reducing the condition of the asset overtime. The threat spreads quickly.
3	The pressure occurs infrequently and allows minimal time for the asset to recover/improve condition. The threat spreads at a medium rate.
2	The pressure occurs infrequently allowing the asset to respond/improve condition over time. The threat spreads slowly.
1	The pressure occurs at a rate which does not reduce the asset condition or ability to recover over time.
0	Unknown

State (Condition)

Scale	Description
5	Asset remains in pristine condition. The asset has not at any stage been affected by any form of degradation.
4	Less than 20% of the asset have become modified since European settlement. A significant portion of asset or suite of assets remains in near pristine condition.
3	Between 20-50% of the asset has become modified and may be affected by some form of degradation. Large well preserved remnant patches exist along the asset which are generally unaffected by local/regional land uses.
2	Between 50-80% of the asset has become highly modified and are affected by some form of degradation. A small number of remnants remain, some or all of which may be influenced by local/regional land uses.
1	More than 80% of the asset has become highly modified and are affected by some form of degradation.
0	Unknown

Response

Response ranking is a combination of current knowledge of the asset and management responses to the pressures facing the asset.

Management response

Scale	Description
5	There is no active management of threats.
4	There is limited active management of threats. Minimal resources provided to manage threats.
3	Threats to the asset are partially managed to reduce impact and the source of the threats is not actively reduced.
2	Threats to the asset are partially managed to reduce impact and the source of the threats is actively reduced/eliminated. Management actions are monitored and adequately resourced.
1	Threats to the asset are managed to reduce impact and the source of the threats is actively reduced/eliminated. Ability to respond to new pressures is adequate. Management actions are monitored and adequately resourced.
0	Unknown

Knowledge

Scale	Description
5	No baseline information exists and no monitoring is occurring.
4	Very limited baseline information and no monitoring is occurring.
3	Some baseline information exists and there is limited monitoring.
2	80% of the baseline information has been collected and monitoring of the asset is occurring.
1	Baseline information is adequate and monitoring of the asset is occurring.
0	Unknown

Targets

Under the National Framework for Standards and Targets, targets are defined as aspirational targets, resource condition targets and management action targets.

- **Aspirational targets:** Long term targets (>50 years) about the desired condition of the region's natural resources to provide a context and setting for other targets to help guide strategic regional planning process.
- **Resource condition targets:** Specific timebound and measurable targets relating to resource condition and achievable within a timeframe of 10-20 years.
- **Management action targets:** Short term targets relating to management actions and capacity building over a timeframe of 1-5 years.

Each expert panel undertook an assessment of the following:

- Verification of community identified assets and values
- Identification of threats and analysis of risks
- Confirmation of community established aspirational targets
- Identification and evaluation of management options
- Strategies for managing NRM issues
- Identification and evaluation of investment options
- Management action targets for adoption

Each expert panel produced a set of management action targets with associated management options as priorities for investment.

The management action targets and associated management option were considered at the regional level for prioritisation.