2. STATE OF ENVIRONMENT REPORTING

2.1 WHAT IS A STATE OF ENVIRONMENT REPORT?

SoE reporting is an accepted and widely used tool internationally for reporting on the natural environment by describing its condition, the pressures acting on it and desired responses.

State of environment (SoE) reporting originated in the United Nations Environmental Program in 1992, as a response to the growing recognition that the world's natural resources were increasingly under threat. The United Nations developed SoE reporting as a framework for delivering useful information and assessments about the state of the environment to all parts of the community – government, industry, and the public. The U.N. convention establishes that SoE reporting should:

- **Be scientifically credible** – based as far as possible upon scientific data and reputable information;
- **Present trends** - important and emerging changes in the environment;
- **Assess efforts** - to deal with important environmental issues;
- **Be regular** – a cycle of reporting every 2-3 years by further assessment to indicate trends;
- **Be a useful document** – that offers responses, strategies and indicates environmental issues and priorities for the body undertaking the report.

In Australia, the first national SoE report, published in 1996, was a best seller – the next one is due in 2001. Most States produce a SoE, with Queensland's inaugural report released in 1999 (EPA, 1999).

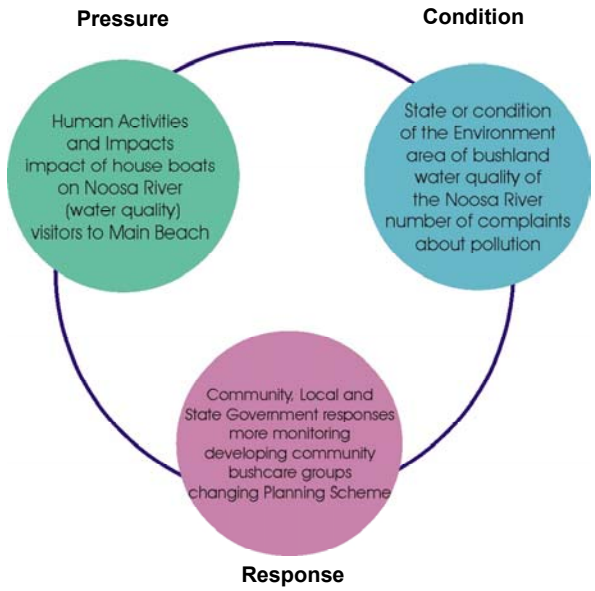
Many local governments are also embarking on SoE reporting, with Brisbane, Maroochy, Gold Coast, and Logan Councils all having recently completed reports.

This report is developed for a wide ranging audience: the general community, environmental and community organisations, Councillors, Council officers and government agencies.

2.2 SOE REPORTING FRAMEWORK

A state of environment report follows an internationally accepted structure, following the 'pressure- condition – response' model (refer Figure 2.1 below). This model is founded in the assumptions that humans cause **pressures** on the environment which change its **state or condition.** Society can **respond** to these changes by various actions, policies and plans that can influence the state of the environment, or by influencing human pressures upon it.

Figure 2.1 Pressure – Condition - Response



2.3 READING THIS SOE REPORT

The environment is a highly integrated and complex system. To provide a workable structure for its description and assessment, elements of the environment known as 'themes' have been identified which form the basis of the chapters in this report. For Noosa, the themes were developed with the input of a Steering Committee, comprising stakeholders from government and the community. The themes as agreed by the committee are:

- Biodiversity.
- Catchment Rivers and Lakes.
- Coastal Zone.

- Land.
- Atmosphere (including energy).
- Human Settlements (Waste and Transport).

These themes have been used as chapter headings in this report.

While it is recognised that there are cultural issues arising from each theme, these issues have not been formally addressed by this report.

The Pressure – Condition – Response structure is reflected in each chapter of this report, and in the 'indicators' selected to identify key trends or provide a summary picture of the state of the environment. In each chapter:

- The **current condition** of the environment is assessed;
- The **pressures** on the environment are identified and described, and
- Appropriate **responses** are presented. Responses may include actions for the community, industry and government at any level.

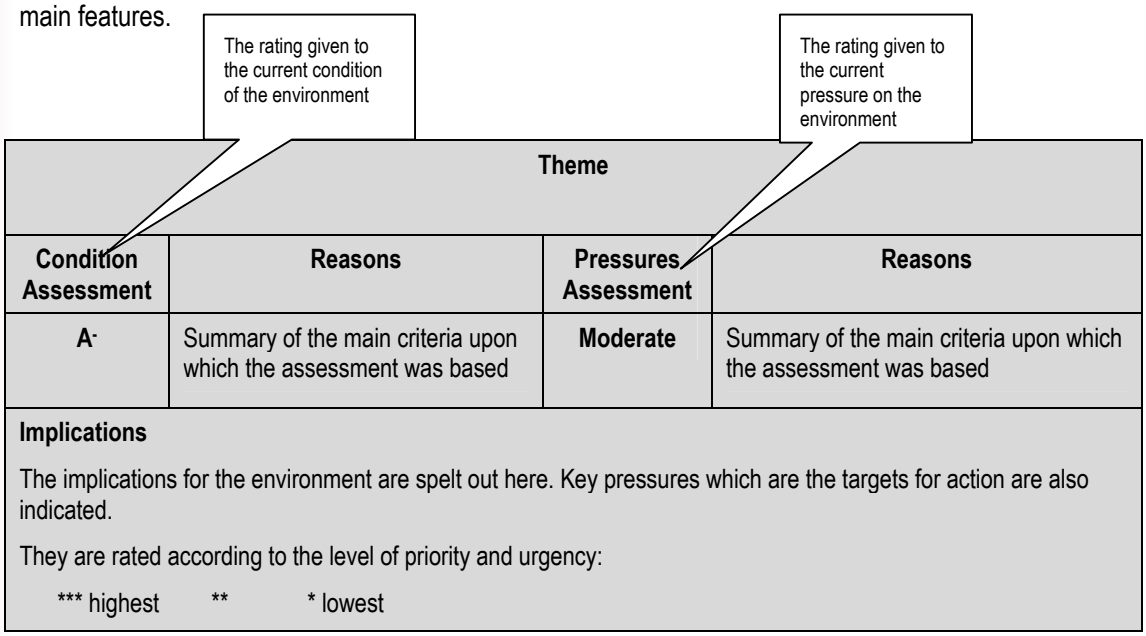
Where possible, **indicators** have been identified to provide a measure of the key pressures and condition, and a benchmark against which to assess the effectiveness of action.

2.4 Chapter Layout

Each chapter follows the following structure:

Introduction	Introduces the theme, its scope and background in Noosa Shire.
Issues and pressures	A discussion of the main characteristics, condition and pressures upon the Noosa environment. Key indicators are introduced and explained.
Case studies	Are included where relevant to highlight local examples.
Report Card	A 'report card' summary which rates the condition of the environment and the pressures on it.
Summary of Indicators	A summary table of the indicators selected for this theme.
Action Plan	A summary of existing policies and plans, and an action plan for priority actions.

The summary Report Card contains considerable information. An example is reproduced here to outline its main features.



The report card ratings are assessed from A-E, according to the following classification:

Condition Rating			Pressure	
A	Very good	The environmental values of this element are very well maintained, and are very close to , if not actually pristeen.	**Low**	Level of pressures are very low . The current condition should be maintained or are not likely to significantly deteriorate.
B	Good	The environmental values of this element are well maintained and have remained intact, despite some levels of disturbance.	**Moderate**	Pressures are moderate but manageable. Active management will be needed to maintain the current condition.
C	Moderate	The environmental values of this element have been modified or disturbed, but environmental processes continue to be maintained at more basic levels. Higher order environmental processes may have been lost, or have partial functioning.	**High**	Pressures are strong and indicate future degradation is likely.
D	Poor	The environmental values are heavily and extensively modified, with clear evidence of widespread degradation.	**Very High**	Pressures are very high and will cause severe decline in environmental values.
E	Very poor highly degraded	The environmental values are excessively modified, with severe degradation and destruction to environmental processes.		

2.5 Environmental Indicators

The use of indicators is an essential tool in effective state of environment reporting. Indicators are used to measure key processes, and describe and identify trends in complex environmental systems.

Indicators set key measures which provide information about the whole system. They simplify reporting by:

- Having an easily understood meaning that can be measured easily and regularly.;
- Allowing important trends to be communicated simply to a wide audience;
- Presenting information about complex natural systems through a simple and readily understood measure.

Indicators selected for the Noosa SoE report reflect core indicators developed in Australia, as well as indicators tailored to Noosa's context and the capacity of the local government to collect and maintain this information. A 'one-off' indicator is of little value to SoE reporting, so indicators have been chosen that can be measured over time to provide an objective assessment of the state of Noosa's environment.

Two examples of indicators are given below:

Biodiversity Loss of each vegetation community between 1993 and 2000

Catchments, Rivers and Lakes % of catchment that is covered by vegetation

The indicators in this report are consistent with those developed by Environment Australia for national reporting, but were tailored to reflect the local scale and particular landscapes and issues of Noosa Shire. An overall collation of all the indicators developed for Noosa are presented in Table 2.1 by theme and in the order they appear in this report.

Table 2.1 Indicators

INDICATORS
Biodiversity
Regional Ecosystem • Loss of each Regional Ecosystem between 1993 and 2000. • Area (%) of the Shire covered by Endangered Regional Ecosystems • Area (%) of the Shire of Endangered Regional Ecosystems that are outside conservation reserves; • Area (%) of Concern Regional Ecosystems; • Area (%) of Concern Regional Ecosystems outside conservation reserves.
Vegetation • Rate of loss/gain of vegetation in Noosa Shire between 1993 and 2000 • Annual clearing rate • Area of remnant native vegetation (based on 2000 mapping) • Area of Dry Coastal Heath • Number of different flora species known to occur • Number of Endangered, Vulnerable and Rare flora species known to occur
Key Fauna Indicators • Extent and relative abundance of key fauna species
Fauna Species • Number of endangered, vulnerable and rare flora and fauna species known to occur • Number of different fauna species known to occur • % of land under feral animal control programs

INDICATORS
Conservation
• Area of private land purchased with conservation levy funds since 1996
• Area of retained habitat on private land under voluntary conservation agreements
• Area of private land under voluntary conservation agreements which contain 'Endangered'' or 'Of concern' regional ecosystems
• Area of private land under restoration (habitat enhancement, revegetation) as part of "Land for Wildlife"
Catchments, Rivers and Lakes
Land Protection
• % of land in each of the 3 subcatchments (Mary, Upper Noosa Rivers and Kin-Kin Creek) in protected tenure
Water flow, Water Extraction
• Total extraction of groundwater from Noosa River headwaters
Water quality
• Total Suspended Solids
• Total Nitrogen concentrations
• Total Phosphorus concentrations
• Ecological measures of ecosystem health (indicators still to be specified)
Catchment Vegetation Cover
• % (and ha) of each of the 3 sub catchments with vegetation cover
Riparian Vegetation
• Riparian buffer areas designated as Open Space Conservation – Waterway Protection supporting native vegetation
Recreational use
• Number and intensity of motorised recreation water -craft (boats, jet-skis) using the river in selected stretches
Fish and Fishing
• Commercial fish catch for Noosa River (kg per annum)
Stormwater Management
• Completion and implementation of the Urban Stormwater Quality Management Plan
Catchment Management
• Progress in the implementation of Noosa and May River catchment management plans
Community Involvement
• Effective community involvement by the Noosa and Mary River Catchment Groups
Coastal Zone
Coastal Erosion
• Cubic metres of sand for Main Beach replenishment
Estuarine Health of Noosa River Estuary
• Area (ha) of seagrass
• Area (ha) of mangroves

INDICATORS
• Benthic fauna recolonisation
Coastal Creeks
• Viable populations of Honey Blue Eye and Oxleyan Pigmy Perch fish species
Coastal Biodiversity
• Area (ha) of dry coastal heath
Recreation Use of Beaches
• Number of controlled, formal, public pedestrian and 4WD access points to the beach • Number of vehicles crossing the Noosa River to the North Shore
Recreation Water Quality
• Number of times ANZECC water quality guidelines for primary contact (swimming) were exceeded in drain outlets on swimming beaches
Commercial Fishing
• Volume of commercial fish catch in off-shore waters by unit effort (catch x days x boats)
Land
Land tenures and Land Use
• Area (ha) of main land tenures (National Park, State Forest, leasehold, freehold) • Area (ha) of land committed to crops and no. of beasts • Area assigned to sugar cane in Moreton Mill area • Area (ha) of green cane harvested
Protection of Rural Conservation land values
• Area of native vegetation (excluding plantations) on areas designated as Rural Conservation on the strategic plan
Subdivision Growth
• Number of new allotments created through subdivision • Number of residential dwelling approvals • Number of approved but not completed urban residential dwelling approvals
Atmosphere
Complaints
• Number of community complaints regarding air pollution
Energy Usage
• Amount of electricity used from Noosaville substation
Reducing Pollution and Greenhouse Gas Emission
• Number of Council initiatives to reduce greenhouse gas emissions within the Shire (based on recommended actions by ICLEI) • (%) of energy use from renewable energy sources

INDICATORS
Greenhouse Gas Emissions
• Estimate of CO2 equivalent emissions caused as a result of Council activities (electricity, gas, diesel and petrol usage)
Human Settlements (Waste and Transport)
Population and Development Footprint
• Size of population in Noosa Shire
• Area (%) of Noosa Shire covered by urban development
• Amount of water used per head of population
Waste
• Amount of waste generated per head of population per annum
• Tonnage of waste to landfill
• Number of composting bins distributed
• Rates of recycling
Sewage
• Number of composting toilets
• Percentage of biosolids recycled per annum
• (%) sceptic tanks which comply with design effluent emission standards.
• Number of domestic wastewater treatment plants
Degree of Compliance with Regulations
• Results of independent licence compliance audits
• Number of noise complaints
Traffic
• Change in average daily traffic counts over peak Christmas period

Although many indicators specify area (ha) or volume, the important indicator is actually the % change, or trend which has occurred. This cannot be measured for many indicators in this report, but the baseline information collated here will form the basis of comparison and trends in future reports.