Summary

State of the Environment Reporting is increasingly being seen as an important part of environmental management and is required at the national level as well as within several states. Although there are or have been, a number of long-standing and quite comprehensive monitoring and assessment programs on the Great Barrier Reef, the results of many of these programs have never been summarised in a management context and no overall summary of all of these programs has ever been attempted.

The Great Barrier Reef Marine Park Authority has decided to produce a report on the State of the Great Barrier Reef World Heritage Area (GBRWHA) in 1997. This report will be produced with assistance from the Cooperative Research Centre for Ecologically Sustainable Development of the Great Barrier Reef, the Queensland Department of Environment, the Queensland Department of Primary Industries, the Queensland Fisheries Management Authority and the Australian Institute of Marine Science. Emphasis will be placed on summarising long-term, large-scale data sets from existing monitoring programs. The report will include physical, chemical, biological and socioeconomic data as well as a section on the current management status of the area.

This first State of the GBRWHA Report will provide managers, policy makers and Reef users with an informative and readable summary of the status of the Reef, an indication of any long-term trends, and an analysis of possible management implications. The technical reports which form these workshop proceedings will provide a source for more detailed information and a pointer to other datasets and scientific studies which will underpin the report. The report will also fulfil the obligations of the Authority to report to stakeholders in the 25 Year Strategic Plan for the Great Barrier Reef World Heritage Area, and to UNESCO on our management of the World Heritage Area. The primary objectives of the report will be to: 1) summarise information on key attributes of the GBRWHA, and carry out a preliminary assessment of current status, trends and management implications; 2) report to the World Heritage Committee on the status of the World Heritage values of the GBRWHA; and 3) report to stakeholders in the 25 Year Strategic Plan for the GBRWHA on the status of the area.

As a first step, a technical workshop was held on November 27-29 1995. Researchers and managers responsible for specific data sets presented summaries of their data and commented on their management significance. Papers from this workshop are presented here, while the final status report will be published later in 1997.

The presentations at the workshop demonstrated that we have accumulated a wealth of knowledge about the status and trends for a variety of important attributes for the GBRWHA. The 40 papers and 3 abstracts in these proceedings are arranged in a loose thematic order, starting with overviews of the climatic and oceanographic characteristics of the area (Lough, Burrage et al.) then moving to reviews of water quality and terrestrial inputs (Furnas et al., Brodie). This is followed by status reviews for a variety of key groups of plants and animals (20 papers) and the last theme deals with a series of management and use issues (19 papers) such as fisheries, tourism, legislation, planning and day to day management.

In general the situation looks quite positive for plants and animals associated with reefs. Several papers indicate that while fish (Ayling, Sweatman et al., Williams) and corals (Ayling, Done, Lough and Barnes, Connell et al., Osborne et al., Wachenfeld) can fluctuate substantially from year to year, there are no indications of any large-scale degradation as a result of human activity. There are a number of important pressures on the reefs which will need to be monitored on an on-going basis. In particular, reef fish stocks as well as nutrients and sedimentation and their potential effects on corals and algae require continued vigilance.

Inter-reefal areas (especially some inner-lagoon areas) are subject to heavy pressure from trawling activities (Pitcher). It was agreed during the workshop that in areas where heavy trawling persists there is likely to be a continued decline in the plants and animals.

Of all the groups examined at the workshop, algae are probably the least studied (McCook and Price) and so it is difficult to make any firm comments on status or trends for this group. In general only fish and corals are being monitored in a comprehensive manner.

The status of some of the large animals associated with the GBRWHA, especially dugongs (Marsh and Corkeron) and some species of sea turtle (Limpus), is giving cause for concern. Dugong numbers in the southern Great Barrier Reef are declining, and although no trends have been demonstrated so far, several turtles species are subject to pressures which are considered to be unsustainable.

A number of fish, prawn and other crustacean stocks were examined (Higgs, Elmer, Healy, Gwynne, McPherson, Brown, Gribble). In most cases, fish stocks appeared to be in a stable condition, but in some cases there appears to be an indication of small declines in stocks. If these declines are a result of over-harvesting rather than natural fluctuations, then this could be rectified through modified management measures. It was stressed there were many challenges facing managers in the coming years (Robertson). In particular there is a need for effective coordination of management effort between the various agencies involved in fisheries within the GBRWHA.

We still know very little about long-term trends in the level and type of use of the GBRWHA (Benzaken and Aston, Benzaken). Generally, use is concentrated in the Cairns and Whitsunday region. For instance about 65% of all tourism use is located on only 15 reefs. Logbooks kept by tourism operators, and submitted with the Environmental Management Charge, will provide much of this information in the future. There is the potential for substantial increase in the level of use in the near future as a result of changes in transport technology and realisation of latent permitted use. Economically, tourism is by far the largest industry in the GBRWHA. Per annum, tourism is estimated to be worth four times that of commercial fisheries. Further work is urgently required on levels of recreational and indigenous use (Benzaken et al., Smyth).

While Australia is regarded as a world leader in the management of large marine protected areas, and has implemented innovative procedures and mechanisms, there is still a need to find more effective ways to monitor and manage this enormous region. The workshop identified problems arising from the size of the region together with the steady increase in its use. It is anticipated that a more integrated and consistent approach to zoning the entire marine park will be adopted in the future (McGinnity). Further progress on the development of management plans is required. Levels of day-to-day management activities such as surveillance and enforcement were reported to be declining as a result of a need to shift available resources towards coastal development issues and administrative matters (Day et al.). In future years, managers will clearly be facing major challenges to work more effectively and efficiently, and to find increased resources.

The purpose of the State of the Reef Report is to provide managers, policy makers and reef users with an informative, readable and integrated summary of the status of the GBRWHA. It will include an indication of any long-term trends and an analysis of possible management implications.

The formal State of the Reef Report will consist of a summary report which extracts the main findings, conclusions and recommendations of the workshop and presents this, together with

any other available and relevant information, in a compact and readable form. This first report will be published later in 1997.

It is not intended that the State of the Reef Report will include exhaustive statistics on the status of all attributes and issues relating to the GBRWHA. However, as part of the State of the Reef process, it is intended to produce a regularly updated Great Barrier Reef Almanac in which such statistics are presented. This almanac would be published in hard copy, on CD-ROM and on the World Wide Web. The Web version would be updated on a continuous basis, as new information becomes available, while the other forms will be published every five years, in the year following publication of the State of the Reef Report.

In the first State of the Reef Report, an attempt will be made to summarise information using the Pressure-State-Response approach adopted by the Commonwealth State of the Environment Report. During 1997, the reporting structure and format will be reviewed, and a list of standard indicators will be developed for use in future reports and the Great Barrier Reef Almanac.

It is anticipated the various products arising from the State of the Reef project will constitute a major output of the Research and Monitoring Section in future years and that the data and information base upon which this project draws will be a major responsibility of the newly formed Information Management and Coordination subsection.

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