



Department of
Fisheries

State of the Fisheries Report **2006/07**



Fish for the future

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Cover photographs

Upper photograph: South Coast

Lower photograph: Baldchin groper (*Choerodon rubescens*)

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Overview from the Chief Executive Officer



The *State of the Fisheries Report* is published annually to provide a detailed level of reporting on the management of fish stocks and their environment undertaken by the Department of Fisheries. A summary report from this document is included in the Department's *Annual Report* to Parliament, which includes the Department's non-financial (fishery) performance indicators.

The *Annual Report* is no longer printed but is available through the Department's website (www.fish.wa.gov.au).

The *State of the Fisheries Report* summarises the outcomes of many departmental activities including management changes, compliance work and research to assess stock levels, monitor breeding stocks and undertake environmental assessments. This document provides a valuable reference point for the Western Australian fisheries of major importance to the commercial and recreational sectors, and also for the aquaculture industry.

This year's report continues to support the Department's Ecologically Sustainable Development (ESD) approach to the management of the State's fisheries and their associated aquatic environments. The structure of the report deals with fisheries and fishing-related activities on a bioregional basis, enabling Ecosystem-Based Fisheries Management (EBFM) to be more efficiently considered. Furthermore, reports on the activities and systems undertaken by the Department to manage the broader impacts of fishing on the aquatic environment, such as habitats, precede the fishery reports in each bioregion.

These bioregional reports indicate that the majority of Western Australia's significant fisheries stocks continue to be in a healthy condition and that fishing presents few risks to the stocks or the aquatic ecosystems underpinning them. However, the stocks of west coast demersal finfish (including dhufish and snapper) have been found to be overfished and a suite of new management measures has been initiated to reduce the effort on these stocks by 50%.

Whilst management actions to reduce the catch quota and restore the spawning biomass of snapper in the Gascoyne region to appropriate levels had already been implemented, a review resulted in further quota cuts to increase the speed of recovery. On the south coast, while management has enabled stock of the whiskery shark stock to improve, the dusky whaler and sandbar stocks continue to decline due to the impacts of previous fishing activities, not from current fishing levels.

The concerns expressed in last year's *State of the Fisheries Report* about the status of crustacean fisheries within Cockburn Sound were confirmed and this fishery was subsequently closed for the 2007 season. Extensive research on the status of crab stocks is now underway within Cockburn Sound and, for precautionary reasons, also within the Peel-Harvey estuary.

There was a decline in level of landings for the key crustacean fisheries (rock lobsters and prawns) plus a large drop in the production and value of the scallop fisheries. The decline in the catch of rock lobsters had been predicted for a number of years and large variations in scallop fisheries are mainly due to environmental effects on their recruitment.

In addition to discussing the status of our aquatic resources, the individual reports in the *State of the Fisheries Report* also outline any new management initiatives. Adjustments to fisheries management arrangements are frequently required to accommodate natural fluctuations in stock abundance and continuing improvements to fishing efficiency through the application of new technology by both the commercial and recreational sectors.

For example, the WA Demersal Gillnet and Longline Fishery will now shift its management controls from monthly gear units to daily gear units to more effectively control effort and keep catch at the desired levels. This highlights the increasing complexity and challenges facing those involved in fisheries and marine management, and especially the need for ongoing scientific monitoring and stakeholder support.

I would like to take this opportunity to express my appreciation to all departmental staff who contributed to this important, annual performance review of our fish stocks. Similarly, the commercial and recreational fishers throughout the State are to be commended for their positive support for the Department's research and management programs, without which such a high level of sustainability would not be achieved.



Peter J. Millington
Chief Executive Officer

Editor's introduction



The *State of the Fisheries Report 2006/07* follows the fully bioregional format reflecting the Department of Fisheries' ongoing commitment to ecosystem-based management of the State's aquatic resources. Furthermore, each of the fishery reports in this volume now contains both the commercial and recreational

activities within the one report to ensure that the aggregate catch harvested from each stock is clear and to show how it is being shared between the fishing sectors. This structure should enable readers to more easily assess the interrelationships between fisheries and their cumulative effect within each bioregion of the State. In this context, individual fish stocks can be regarded as general indicators of the health of the aquatic environment.

Each of the individual fishery status reports is currently based upon the well-established Ecologically Sustainable Development (ESD) reporting approach that has enabled all of the State's significant commercial fisheries to undergo assessment and achieve environmental certification under the Commonwealth Government's *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

To generate parts of this report, the long-standing involvement of commercial skippers in specific research projects now extends into the recreational sector, including a significant number who participate in the new Research Angler Program. Thus, both commercial and recreational fishers have continued to support the Department's research and management effort through a variety of voluntary log book and Voluntary Fisheries Liaison Officer programs. The active collaboration between aquaculturists and the Department's research teams has also enhanced the research and development projects necessary to expand production from these small but important regional industries.

The Naturaliste Marine Discovery Centre within the Hillarys research and education complex is now operational. This provides the public and school groups with a unique opportunity to

understand and appreciate the State's marine resources and the science that underpins their sustainable management.

The Department of Fisheries' Research Division's Biodiversity Branch is now the focus for research on ecological and protected species interactions arising from fishing activities within the research division. The group is pivotal in the additional research about to begin through the Government's WA Marine Science Institution (WAMSI) initiative. It is planned that this will enable comprehensive monitoring of the State's marine systems at a bioregional level.

While the *State of the Fisheries Report* provides the general public and interested fishers with a ready reference source, it is also designed to support the Department's various reporting requirements, including those to the Commonwealth Government under the EPBC Act. The report is directly accessible on the Department's website (www.fish.wa.gov.au/docs/sof), where users are free to download relevant sections for personal use. If quoting from the document, please give appropriate acknowledgment using the citation provided at the front of the report.

Finally, I would like to thank all of my departmental colleagues who have assisted in the production of this volume and its many status reports. Particular thanks are due to Ms Karen Santoro who had the unenviable job of coordinating the submission of the text from the various authors, Steve Ireland who ensured that the standard of text throughout this complex document is at an exceptionally high level and Matthew Terwey for contributing his significant publishing expertise to convert the text into this high-quality printed volume.



Dr Rick Fletcher
Director – Fisheries Research

How to use this volume

To obtain full benefit from the information provided, readers need to understand various terms and headings used in the text and summarised in Appendix 1 (which appears as Appendix 5 in the Department of Fisheries' *Annual Report 2006/07* to Parliament).

Many of these terms and headings follow the national Ecologically Sustainable Development (ESD) reporting structure (Fletcher *et al.* 2002). In addition to the explanations provided below, acronyms are expanded at their first occurrence in a section of the text and are also listed in a glossary at the end of the volume.

Bioregions

As noted above, readers need to note the fully bioregional structure of this report (see Introduction Figure 1). A 'bioregion' refers to a region defined by common oceanographic characteristics in its marine environment and by climate/rainfall characteristics in its inland river systems.

The marine bioregional boundaries used here are broadly consistent with those of the *Interim Marine and Coastal Regionalisation for Australia* report (IMCRA Technical Group 1997), except for the inclusion of the Gascoyne coast as a separate region, reflecting its nature as a permanent transition zone between tropical and temperate waters.

The precise boundaries of the bioregions reflect specific grid reference points used in fisheries management plans and data recording systems. Each individual bioregion has been provided with a general introduction outlining its aquatic environment, major commercial and recreational fisheries and aquaculture industries.

Breeding stock status

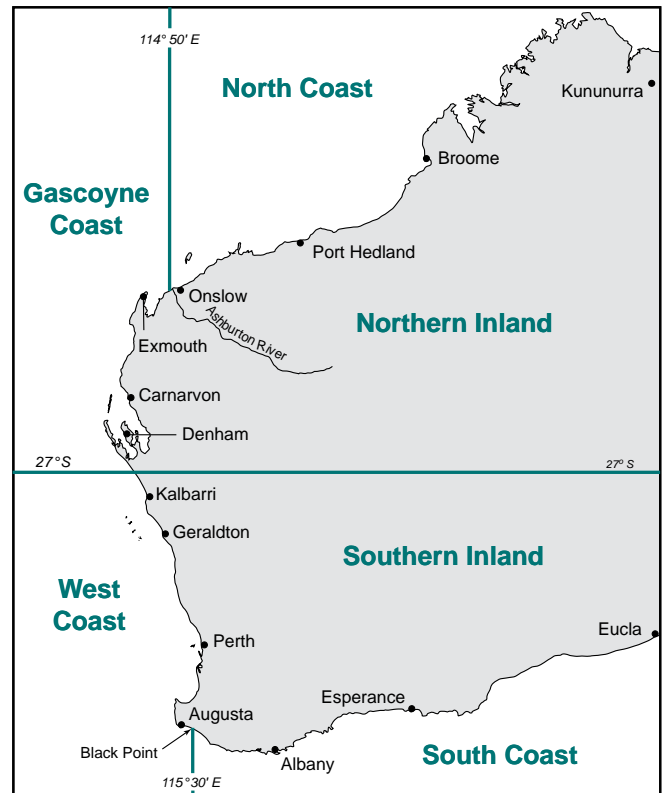
Adequate: reflects levels of parental biomass where annual variability in recruitment of new individuals (recruits) to the stock is a function only of unrelated environmental effects or recruit survival.

Increasing: reflects situations where the parental biomass has previously been depleted to unacceptable levels by fishing or some other event (e.g. the virus attacks on pilchards in the 1990s) but is now recovering due to management action and/or natural processes.

Inadequate/declining: reflects situations where excessive fishing pressure (catch) or some external event has caused parental biomass to fall to levels where recruitment over fishing is possible.

Non-retained species

This refers to any species caught during a fishing operation which are not the target of, or retained by, the fishing operation, and can include both potential impact on unwanted 'bycatch' species and any interaction with protected species. In each case, an explanation is provided of the situation and the level of risk to the stock from fishing operations.



INTRODUCTION FIGURE 1

Map of Western Australia showing the general boundaries of the bioregions referred to throughout this document.

Ecosystem effects

This refers to the indirect impacts of removing fish from the ecosystem, and physical interactions of fishing gear with the sea floor. Each fishery is considered in terms of its effects on the food chain and the habitat, and an assessment of current ecological risk ('negligible', 'low', 'medium' or 'high') is provided.

Target catch (or effort) range

Target catch range: the range of annual catches, taking into account natural variations in recruitment to the fished stock, which can be expected under a fishing-effort-based management plan.

Target effort range: the range of annual fishing effort, assuming natural variability in stock abundance, required to achieve a total allowable catch under a catch quota management plan.

Where the annual catch or effort falls outside of this range and the rise or fall cannot be simply explained, a management review or additional research to assess the cause is generally required.

External factors

This refers to known factors outside of the direct control of the fishery legislation which impact on fish stocks or fishing. An understanding of these factors, which are typically environmental (cyclones, ocean currents) but might also include, for example, market factors or coastal development, is necessary to fully assess the performance of the fishery.

Season reported

Readers should also be aware that the individual fishery and aquaculture production figures relate to the latest full year or season for which data are available, noting the inevitable time-lags involved in collection and analysis. Therefore, the statistics in this volume refer either to the financial year 2005/06 or the calendar year 2006, whichever is more appropriate.

Similarly, the statistics on compliance and educational activities are also for 2005/06, following the analysis of data submitted by Fisheries and Marine Officers.

In contrast, the sections on departmental activities in the areas of fishery management and new compliance activities are for the current year, and may include information up to June 2007.

Performance measures

As noted above, almost all the State's significant export fisheries have now undergone assessment and achieved environmental certification under the Commonwealth Government's *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Consequently, the *State of the Fisheries Report* also reports the performance of the relevant fisheries against the specific performance measures developed during the EPBC Act assessment process.

Within the individual fishery status reports, each of these performance measures is shown in a highlighted box to assist the reader. The results are also summarised in Appendix 6.

Common fish names

It should be noted that the common names of a small number of fish species have changed in this volume from its predecessor. Where this has occurred, a reference is included to the common name formerly used for the same species. This situation reflects an initiative of the seafood sector to standardise marketing names across Australia, and it is likely that further changes will occur in future volumes.