



STATE OF THE FISHERIES REPORT 2007/08



Government of **Western Australia**
Department of **Fisheries**



Fish for the future

Edited by W.J. Fletcher and K. Santoro

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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 undertaken during 2007/08 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.

The structure of the report is consistent with the Department's Ecologically Sustainable Development (ESD) approach to the management of the State's fisheries and their associated aquatic environments. It also deals with fisheries and fishing-related activities on a bioregional basis, enabling Ecosystem-Based Fisheries Management (EBFM) issues to be more efficiently considered. Thus, 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 fishing does not present an unacceptable risks to the targeted stocks or the marine, estuarine and freshwater ecosystems underpinning them. Thus, the overwhelming majority of Western Australian fisheries have been assessed as only having negligible or minor risks of unacceptable impacts on bycatch species, protected species, habitats or the broader ecosystem. For the small number of fisheries which have been assessed as having a moderate risk to one or more elements, all met their annual performance targets.

The report documents that the majority of Western Australia's significant fisheries stocks continue to be in a healthy condition. For the managed fisheries, over 95% had catches that are considered to be appropriate based on the status of the stocks involved and the current environmental conditions. Moreover, approximately 80% of fisheries are targeting stocks whose

abundance is considered to be above the level where additional management is required. Of those not at acceptable levels, additional management is already in place to rectify the situation for Shark Bay snapper, Southern shark and Northern shark.

This year's report confirmed that the stocks of west coast demersal finfish (including dhufish and snapper) are being overfished. Management measures aimed at reducing the catch and effort by all sectors on these stocks are now under consideration. Furthermore, an intensive monitoring program for these stocks has now been funded and is underway.

Based on the poor status of blue swimmer crab stocks in Cockburn Sound that was identified last year, extensive research has been underway in this region and, for precautionary reasons, within the Peel-Harvey estuary. These studies have found that the crab stocks in Cockburn Sound have begun to improve, but are not yet to a level where the fishery should be re-opened. The status of the Peel Harvey stocks should be confirmed within the next year or two.

The information provided within this report is also used to assist management even where the breeding stock is still considered to be at acceptable levels. For example, this year's report outlines that there will be a decline in the predicted catch level of rock lobsters over the coming few years. This prompted a review of the management arrangements for the fishery and a series of proposed amendments are being progressed. These actions are designed to assist the breeding stock of rock lobsters remain at adequate levels. A close watch is now being made on future recruitment levels and conditions to ensure that the relationships that have held for the past 25 years which have been used to assist the management of this important fishery are continuing to hold.

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.

A handwritten signature in blue ink, appearing to read 'Stuart Smith'. The signature is stylized and fluid, with a large initial 'S' and 'S'.

Stuart Smith
Chief Executive Officer

EDITOR'S INTRODUCTION



The *State of the Fisheries Report 2007/08* follows a fully bioregional format reflecting the Department of Fisheries' ongoing commitment to ecosystem-based management of Western Australia'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 based upon the well-established Ecologically Sustainable Development (ESD) reporting approach that has enabled 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 Fisheries Volunteer 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 Department's 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 being undertaken through the Government's Western Australian 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.

A handwritten signature in blue ink, appearing to read 'Rick Fletcher'. The signature is stylized and fluid.

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 2007/08* 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 functional geographic separations 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 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 the breeding stock is depleted to levels that may affect recruitment.

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.

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.



INTRODUCTION FIGURE 1

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

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

HOW TO USE THIS VOLUME

in this volume refer either to the financial year 2006/07 or the calendar year 2007, whichever is more appropriate.

Similarly, the statistics on compliance and educational activities are also for 2006/07, 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 2008.

Performance measures

As noted above, many of the State's significant 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 5.

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.