

**AN EVALUATION OF WESTERN
AUSTRALIAN RECREATIONAL FISHING
REGULATIONS WITH A CASE STUDY
FROM A PERTH METROPOLITAN BOAT
RAMP**

Thesis submitted in completion of the requirements for the
degree of Bachelor of Science (Honours) Marine Science

Matthew James Harvey

Supervisor: Lynnath Beckley

School of Environmental Science

Murdoch University

November 2004

I declare that the information contained in this thesis is the result of my own research unless otherwise cited.

Word count: 15 500 words

Matthew James Harvey

.....

Date:

Acknowledgments

I would like to thank the following people for help throughout this project:

- My supervisor Lynnath Beckley for her support and guidance throughout this project
- My faithful field assistants Sheryn Prior, Aimee Scutter and Mark Ross for their invaluable help counting and measuring fish. Thanks guys
- Neil Sumner (Department of Fisheries) for providing the 1996-97 raw data and assistance with statistics
- Claire Smallwood (Department of Fisheries) for assistance in extracting the data from the Fisheries database
- Rod Lenanton (Department of Fisheries) for his helpful comments on some aspects of the project
- All the recreational anglers that put up with answering my questions and letting me measure their catch
- Murdoch University for financial support during this project

Abstract

Recreational fishing is of major importance in Western Australia, with between 479,000 and 600,000 people participating each year. The recreational catch of finfish in Western Australia is managed using a combination of input and output controls. This study focused on output controls, namely minimum legal lengths (MLL) and daily bag limits (DBL) and historical trends in these regulations were examined. Overall it was found that there was an increase in MLLs over time and a decrease in the DBLs. The link between the biology of individual species and their current MLL was examined and some discrepancies were found between current regulations and the lengths at maturity for a number of species.

The effectiveness of the new recreational regulations for the west coast, which were introduced in October 2003, was examined by comparing catch composition and length frequency data of catches landed at a Leeuwin boat ramp, a popular Perth metropolitan ramp, during 1997 (Department of Fisheries, unpublished data) and 2004 (this study). There was very little change found in catch compositions, with *Sillago* species and *Arripis georgianus* making up the majority of the catches in both years. Significant shifts to a smaller mean lengths were observed in the length frequencies for some species.

The frequency of attainment of DBLs and modelling theoretical reductions in harvest due to changes in DBLs were also used to determine if current DBLs were constraining the recreational catch. It was found that current DBLs were not constraining the catch of anglers launching at Leeuwin boat ramp, and a 50% reduction in current species DBLs would only reduce the catch of anglers in the study by 7%. Compliance of anglers in 2004 was also examined and, in regard to MLLs, was found to be poor for several *Category 1* species.

Table of contents

Acknowledgments.....	ii
Abstract.....	iii
Table of contents.....	iv
Introduction.....	1
Study area.....	4
Methods.....	8
Trends in the recreational fishing regulations in Western Australia.....	8
Minimum legal lengths and length at first maturity.....	8
Boat ramp surveys.....	9
Data obtained from WA Department of Fisheries.....	10
Data analyses.....	11
Results.....	14
Trends in recreational fishing regulations in Western Australia.....	14
Minimum legal length regulations.....	14
Daily bag limit regulations.....	16
Minimum legal lengths and length at first maturity.....	19
Boat ramp surveys.....	21
Leeuwin boat ramp 2004.....	21
Comparison of 2004 Leeuwin data with 1997 Leeuwin and Hillarys Boat Harbour data.....	43
Discussion.....	58
Trends in recreational fishing regulations in Western Australia.....	58
Minimum legal lengths and fish biology.....	59
Boat ramp surveys.....	61
Trends in the recreational fishery.....	64
Effectiveness of daily bag limits.....	67

Knowledge and compliance	72
Conclusions and management implications.....	73
References.....	76
Appendices.....	85
Appendix 1: Summary of survey schedule	85
Appendix 2: Survey form for boat count information.....	86
Appendix 3: Survey form for individual boats interviewed	87
Appendix 4: Location map.....	88
Appendix 5: Summary of data removed from Hillarys Boat Harbour dataset	89
Appendix 6: A summary of the species identified in the 2004 survey that had to be combined to match the level of species identification used in the 1997 data.	90
Appendix 7: Statistical test results	91
Appendix 8: Species list for catch landed at Leeuwin boat ramp (March – June 1997).....	94
Appendix 9: Species list for catch landed at Hillarys Boat Harbour (March – June 1997).....	95
Appendix 10: Recreational fishing regulations in place in 1997 and 2003	96