

Contents

1	Executive Summary.....	1
2	Background to the Audit Report.....	23
3	Overview of the East Coast Trawl Fishery	25
3.1	Commercial Fishing Methods.....	27
3.2	Distribution and Catch Composition of Commercial Catch	28
3.2.1	Target Species	28
3.2.2	By-product Species	31
3.2.3	Bycatch Species	32
3.3	Legislative Framework.....	32
3.3.1	The Offshore Constitutional Settlement.....	32
3.3.2	Great Barrier Reef Marine Park Legislation	32
3.3.3	Queensland Fisheries Legislation	33
3.3.4	Commonwealth Environment Legislation	33
3.4	Policy Framework	34
3.4.1	International Conventions and Agreements	34
3.4.2	National Policies	34
3.4.3	Specific Action Plans	35
3.5	Institutional Arrangements	35
3.5.1	Queensland Department of Primary Industries	35
3.5.2	The Great Barrier Reef Marine Park Authority	35
3.5.3	Environment Australia	36
3.5.4	Cooperative Arrangements on Marine Park Matters.....	36
3.6	Advisory and Consultative Frameworks.....	36
3.6.1	Great Barrier Reef Ministerial Council.....	36
3.6.2	Advisory Committees to QDPI	36
3.7	Fishery History and Management Framework	37
3.7.1	History of the East Coast Trawl Fishery	38
3.7.2	Current Management Arrangements	40

4	Monitoring and Research in the East Coast Trawl Fishery	43
4.1	Monitoring and Research Providers and Funding.....	43
4.1.1	The Queensland Department of Primary Industries	43
4.1.2	The Fisheries Research and Development Corporation	44
4.1.3	The Cooperative Research Centre for the GBR World Heritage Area	45
4.1.4	Other Relevant Research Providers	45
4.1.5	Comments on the Funding Environment	45
4.2	Monitoring and Research Processes	46
4.2.1	Queensland Fishing Industry Research Advisory Committee	46
4.2.2	Trawl MAC and its Scientific Advisory Committee.....	47
4.2.3	Comments on the Monitoring and Research Process	47
4.3	Information Systems.....	48
4.3.1	The Vessel Monitoring System	48
4.3.2	The Commercial Fisheries Logbook Program	49
4.3.3	The Electronic Catch and Effort Recording System	52
4.3.4	Fishery-independent Surveys	53
4.3.5	ECTF-Related Research.....	55
4.3.6	Non-commercial Fisheries Information	59
4.4	The Audit Report's Assessment against Commonwealth Guidelines	59
5	Assessments in the East Coast Trawl Fishery.....	61
5.1	Reported Resource Status and Fishery Trends	61
5.1.1	Target Species	62
5.1.2	By-product Species	64
5.2	General Comments about the Assessment Methodology	65
5.2.1	Reliability of Information Sources	65
5.2.2	Time Series of Fishery Data.....	66
5.2.3	Changes in Fishing Power.....	67
5.2.4	Spatial Distribution and Variability of the Fishery	71
5.2.5	Temporal Distribution and Variability of the Fishery.....	73
5.2.6	Multi-species Catch Composition and Targeting	74
5.2.7	Development of Assessment Models	75
5.3	Specific Comments about the Assessment Findings.....	76
5.3.1	Tiger Prawns	77
5.3.2	Endeavour Prawns.....	77
5.3.3	Northern King Prawns	78
5.3.4	Banana Prawns.....	79
5.3.5	Eastern King Prawns	79
5.3.6	Scallops	79
5.3.7	Moreton Bay Bugs	80
5.3.8	Squid	80

5.3.9	Summary of the Stock Status of the Principal Species taken in the ECTF	81
5.4	Formalisation of the Assessment Process	83
5.5	The Audit Report's Assessment against the Commonwealth Guidelines	86
6	Environmental Impact of the East Coast Trawl Fishery	89
6.1	Description of Environmental Impacts.....	90
6.1.1	Bycatch Composition	91
6.1.2	Take of Listed Species	92
6.1.3	Benthic Habitat Impacts	94
6.1.4	Trophic Level Impacts	96
6.2	Mitigation Devices	97
6.2.1	Turtle Excluder Devices.....	98
6.2.2	Bycatch Reduction Devices	100
6.2.3	Hoppers	104
6.2.4	Other Measures	105
6.3	Future Research, Monitoring and Assessment Needs	105
6.3.1	Risk Assessment of Bycatch Vulnerability to Trawling	106
6.3.2	Representative Areas Program	108
6.3.3	Fishery-Independent Monitoring and At-Sea Observer Programs	109
6.3.4	Continued Research into Gear Technology	109
6.3.5	Regular Bycatch Assessments.....	109
6.4	The Audit Report's Assessment against the Commonwealth Guidelines	110
7	Management Arrangements in the East Coast Trawl Fishery.....	113
7.1	General Comments about the Legislated Management Objectives of the Trawl Plan	114
7.1.1	Specific Management Objectives.....	115
7.1.2	Achievement of Objectives	115
7.1.3	Performance Measures	116
7.1.4	Review Events and Performance Indicators.....	117
7.2	Specific Comments about the Legislated Review Events and Performance Indicators of the Trawl Plan.....	118
7.2.1	Biological Review Events and Performance Indicators	118
7.2.2	Ecological Review Events and Performance Indicators	124
7.2.3	Enforcement Review Events and Performance Indicators	126
7.2.4	Fisheries Performance Review Events and Performance Indicators	127

7.3	Evaluation of the ECTF Management Arrangements	129
7.3.1	Input-Based Management	129
7.3.2	Effort Limitations and Reductions	130
7.3.3	The Vessel Monitoring System	136
7.3.4	Spatial Management of the Fishery and Fishery Closures	138
7.3.5	Output-Based Management Measures	139
7.3.6	Bycatch Mitigation Devices	141
7.3.7	Enforcement and Surveillance	143
7.4	Summary of the ECTF's performance against its legislated objectives.	145
7.5	The Audit Report's Assessment against the Commonwealth Guidelines	154
8	References.....	157

Appendixes

1.	Extract of Special Gazette of 26 September 2001	165
2.	Objectives of the Trawl Plan and how they are to be achieved.	167
3.	Guidelines for the Ecologically Sustainable Management of Fisheries.....	175
4.	Chronology of Key Events in the East Coast Trawl Fishery.	181
5.	Current Research of Relevance to the East Coast Trawl Fishery.	185
6.	Summary of Stock Assessment Findings for the Principal ECTF Species	187
7.	Provisions for use of BRDs and TEDs in Trawl Plan.....	191

List of Tables

1. Key findings of the Audit Report on the assessment status of the principal ECTF species.
2. Provisions of the Trawl Plan regarding its management objectives, achievement measures, performance measures, review events and performance indicators, and the Audit Report's appraisal of each.
3. Commercial harvest, gross value of production, number of vessels and fishing effort for landed principal ECTF species in 2001.
4. The commercial harvest, gross value of production and number of vessels taking permitted ECTF species in 2000.
5. Research on the principal species listed under the Trawl Plan.
6. Research on the permitted species listed under the Trawl Plan.
7. Research on species of conservation interest as listed under the EPBC Act.
8. Research on species taken as bycatch and wider ecosystem impact studies in the ECTF.
9. Harvest trends for the principal (i.e. target) species in the ECTF, as reported by the QDPI.
10. Harvest trends for the permitted (i.e. byproduct) species in the ECTF.
11. Preliminary results on effort creep in the East Coast Trawl Fishery.
12. Trawled area in the fishery and the Great Barrier Reef Marine Park.
13. Level of activity in the area of the ECTF and the Great Barrier Reef Marine Park.
14. Stock assessment models being undertaken by the QDPI.
15. Key findings of the Audit Report on the assessment status of the principal ECTF species.
16. Bycatch trends reported for the ECTF by Robins and Courtney (1998).
17. Conservation status of marine turtles found in the ECTF and Australia.
18. Reported turtle interactions in the ECTF in 2001.
19. TED designs tested in the ECTF since 1995.
20. TED usage reported in the trawl logbooks by the ECTF fleet in 2001.
21. Preliminary results on bycatch reduction in the major sectors of the ECOTF.
22. BRD usage reported in the trawl logbooks by the ECTF fleet in 2001.
23. BRD usage reported in a QFS survey by the ECTF fleet in 2002.
24. Review Events for principal species specified in the Trawl Plan (Information Source: Trawl Plan).

25. Assessment against biological performance indicator, comparing the average CPUE for specified principal species during the prescribed review period against the 70% historical average for that species.
26. Numbers of turtles that may be captured or killed before a review event is triggered.
27. Convictions in the ECTF under the Trawl Plan in 2001.
28. Allocation of effort units in 2001 and subsequent reductions.
29. Fishing effort used in the ECTF in 2001 and 2002.
30. ECTF gear and vessel restrictions applicable in the GBR World Heritage Area.
31. Disputed fishing days under the VMS for the ECTF in 2001.
32. Description of seasonal closures in the ECTF prescribed under the Trawl Plan.
33. Current output limits on principal and permitted species prescribed under the Trawl Plan.
34. Provisions of the Trawl Plan regarding its management objectives, achievement measures, performance measures, review events and performance indicators, and the Audit Report's appraisal of each.

List of Figures

1. The Great Barrier Reef region, showing the jurisdictional boundaries between the Commonwealth and Queensland.
2. Historical commercial production, value and effort in the ECTF from 1988 to 2000.
3. Trawl configurations used throughout Australian prawn trawl fisheries.
4. The typical components of a prawn trawl.
5. Catch Composition in the ECTF from 1988 to 2000.
6. History of vessel numbers in the ECTF and measures taken to reduce effort.
7. Time series of catch and effort trends for the major ECTF target species - 1988 to 2000.
8. Hypothetical Harvest Trend 1960 – 2000.
9. Nominal versus standardised CPUE for four major ECTF sectors.
10. Seasonal declines in tiger prawn CPUE in the Torres Strait Prawn Fishery (1989 to 2001).
11. Hypothetical scenarios of bycatch and target species distributions.
12. Current process for monitoring, research and fishery assessment in the ECTF.
13. Proposed process for improved monitoring, research and fishery assessment in the ECTF.
14. Habitat types of the Far Northern Section of the GBR Marine Park.
15. Two commonly used TED designs, which fit the design specifications for a 95% escape rate.
16. BRDs in use in the ECTF and other tropical penaeid fisheries.
17. Classification system for quantifying the susceptibility of bycatch species.
18. Showing the vulnerability indicators for certain megabenthos in the Far Northern Section of the GBR Marine Park, using a combination of removal and recovery rates.
19. Assessment of species performance against the biological performance indicator, using seasonal stratification of data.
20. Assessment of bugs against the biological performance indicator, using seasonal and spatial stratification of data.
21. Cumulative usage of notional effort units in the GBR World Heritage Area by the ECTF fleet in 2001 and 2002.
22. Fishing effort in the ECTF in 1999.
23. Fishing effort in the ECTF in 2001.
24. Disputed fishing days versus reinstated days under the VMS for the ECTF in 2001.

Acronyms used in the Audit Report

AFFS	Agency for Food and Fibre Sciences
AIMS	Australian Institute of Marine Sciences
AGVP	Average Gross Value of Production
ANAO	Australian National Audit Office
BRDs	Bycatch Reduction Devices
CFISH	Commercial Fisheries Information System
CPUE	Catch per Unit Effort
CRC	Cooperative Research Centre
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DGPS	Differential Geographical Positioning System
EA	Environment Australia
ECERS	Electronic Catch and Effort Recording System
ECTF	East Coast Trawl Fishery
ECOTF	East Coast Otter Trawl Fishery
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
ESD	Ecologically Sustainable Development
FAO	Food and Agricultural Organization
FRDC	Fisheries Research and Development Corporation
FIDC	Fishing Industry Development Council
GBR	Great Barrier Reef
GBRMP Act	Great Barrier Reef Marine Park Act 1975
GBRMPA	Great Barrier Reef Marine Park Authority
GPS	Geographical Positioning System
JCU	James Cook University
LOA	Length Overall
LTMP(s)	Long Term Monitoring Program(s)
MAC(s)	Management Advisory Committee(s)
MSE	Management Strategy Evaluation
MSY	Maximum Sustainable Yield
NFC	Northern Fisheries Centre
NPF	Northern Prawn Fishery
OT07	Otter Trawl Logbook (Version 7)
QBFP	Queensland Boating and Fisheries Patrol
QDPI	Queensland Department of Primary Industries
QEPA	Queensland Environmental Protection Agency
QFMA	Queensland Fisheries Management Authority

QFISH	Queensland Fisheries Information System
QFIRAC	Queensland Fishing Industry Research Advisory Board
QFS	Queensland Fisheries Service
QPWS	Queensland Parks and Wildlife Services
QSIA	Queensland Seafood Industry Association
R & D	Research and Development
Reef CRC	Cooperative Research Centre for the GBR World Heritage Area
RFISH	Recreational Fisheries Information System
RIS	Regulatory Impact Statement
SAG	Scientific Advisory Group
SFC	Southern Fisheries Centre
TAE	Total Allowable Effort
TEDs	Turtle excluder devices
TSPF	Torres Strait Prawn Fisheries
TWG	Technical Working Group
UNCED	United Nations Convention on the Environment and Development
UNCLOS	United Nations Convention of the Law of the Sea
VMS	Vessel Monitoring System
WHA	World Heritage Area

