

**Submission to the Department of the Environment, Heritage, Water and the Arts on
behalf the NSW fishing industry seeking ongoing export approval for the
NSW Ocean Hauling Fishery - February 2008**

1. Introduction

This submission provides a summary report for the Ocean Hauling Fishery (OHF) since the initial assessment under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) in May 2003. Information provided is based on the headings contained within Appendix B of the *Guidelines for the Ecologically Sustainable Development of Fisheries – 2nd Edition*. The purpose of the submission is to seek extended export approval for the NSW Ocean Hauling Fishery (OHF).

Consistent with the requirements of the Commonwealth guidelines, this submission references sections of related documents including the Environmental Impact Statement (EIS)¹, the approved Fishery Management Strategy (FMS)¹, and the Fishery Management Strategies Performance Report 2004¹. Where applicable, fishery and catch information has been updated with the most recent available data and included in the submission.

The EIS¹ for the OHF, published in January 2002, provides an overview of the existing operation of the fishery at that time, including an assessment of the risks associated with the operation of the fishery, and the measures proposed to address the risks. Table 1 presents a summary of the OHF at February 2008.

The OHF was granted a five year exemption from the export regulations of the EBPC Act in 2003. The exemption expires on 25 April 2008. During this time a number of improvements have been made to the sustainable management of the fishery including:

Share Management Regime

The conversion of five major commercial fisheries, including the OHF, to category 1 share management was completed on 5 February 2007. Share Management Plans have been adopted for each of the five commercial fisheries. The Supporting Plan, encompassing rules that apply to multiple commercial fisheries, and a range of changes have been made to the *Fisheries Management Act 1994* and *Fisheries Management (General) Regulation 2002* to complement the introduction of share management. Major benefits of share management include provision of a secure fishing access right for fishing businesses that hold shares and endorsements in a share management fishery, thus providing a greater incentive for shareholders to sustain for the resource and maintain the value of the entitlements, and, from a business efficiency perspective, greater flexibility for fishing business owners to adjust the structure of their fishing businesses.

The *Fisheries Management (Supporting Plan) Regulation 2006* and the *Fisheries Management (Ocean Hauling Share Management Plan) Regulation 2006* are available at www.legislation.nsw.gov.au

Ocean Hauling Fishery Management Strategy

NSW DPI and Industry have worked cooperatively to implement many actions contained in the OH FMS aimed at addressing issues identified in the EIS. The changes include many direct actions such as modifying the use of fishing gear to reduce environmental impacts (e.g. prohibiting the use of hauling nets over areas of *Posidonia* seagrass), limiting the species permitted to be landed and times and areas permitted to be fished, and implementation of a garfish recovery program. Many indirect actions, such as new reporting provisions and production of a colour guide to assist with identification and recording of threatened and protected species interactions; and the development of codes of conduct, have also been fully implemented.

¹ Available at www.fisheries.nsw.gov.au/commercial/management-strategies

Table 1: Summary of the NSW Ocean Hauling Fishery

Area	Ocean waters within three nautical miles of the natural coastline	
Gear	Hauling net (general purpose) Garfish net (hauling) Pilchard, anchovy and bait net Purse seine net Lift net	
Management Controls	Predominantly managed by input controls	
Fishing Units	289 fishing businesses with one or more endorsements to operate in the OHF	
Target Species	Australian salmon Australian bonito Dart Sand whiting Yellow fin bream Blue mackerel Whitebait spp. Silver trevally	Australian sardine (pilchard) Anchovy Luderick Sea mullet Sea garfish Yellowtail scad Jack mackerel Sweep
Catch	2005/06 - 5464 tonnes	
Stock Status	Overfished Growth overfished Fully fished Moderately fished Uncertain Undefined	1 (Sea garfish) 1 (Silver trevally) 5 3 1 5
Value	2005/06 - Approx \$14.25 million (based on SFM prices)	
Export	Mullet roe, sea garfish	
By-catch Species	Minimal	
Endangered / Threatened / Protected Species Interactions	<p>None known.</p> <p>During a scientific observer-based survey of ocean haul netting from beaches in NSW, there were no observed interactions with marine mammals, sea turtles or seabirds during fishery operation.</p> <p>Mandatory reporting of threatened species interactions was implemented for the OHF in 2005. No reports of threatened species interactions have been reported by endorsement holders in the OHF pursuant to the reporting requirements.</p>	
Indigenous Component	Unknown	
Recreational Component	Managed through bag and size limits and gear controls.	

2. Description of the fishery

Species

Target and Conditional Target:

Table 2 provides a list of the target and conditional target species for each net type prescribed for the OHF. Under clause 9 of the *Fisheries Management (Ocean Hauling Share Management Plan) Regulation 2006* the use of each net to take fish in the OHF is not permitted unless at least 80% (by whole weight) of the catch taken from each haul is comprised of target species or conditional target species for that type of net.

Table 2: Target and Conditional Target Species for OH methods

Type of Net	Target Species	Conditional Target Species
Hauling Net (General Purpose)	Australian salmon (<i>Arripis trutta</i>) Dart (<i>Trachinotus</i> spp.) Luderick (<i>Girella tricuspidata</i>) Sand whiting (<i>Sillago ciliata</i>) Sea mullet (& all sp. of mullet in Family <i>Mugilidae</i>) Yellowfin bream (<i>Acanthopagrus australis</i>)	Blue mackerel (<i>Scomber australasicus</i>) Australian bonito (<i>Sarda australis</i>) Leaping bonito (<i>Cybiosarda elegans</i>) Oriental bonito (<i>Sarda orientalis</i>) Mulloway (<i>Argyrosomus japonicus</i>) Diamond fish (<i>Monodactylus argentus</i>) Frigate mackerel (<i>Auxis thazard</i>) Mackerel tuna (<i>Euthynnus affinis</i>) Longtail tuna (<i>Thunnus tonggol</i>) Silver trevally (<i>Pseudocaranx dentex</i>) Spanish mackerel (<i>Scomberomorus commerson</i>) Sweep (<i>Scorpius lineolata</i>) Tarwhine (<i>Rhabdosargus sarba</i>)
Garfish net (hauling)	Sea garfish (<i>Hyporhamphus australis</i>)	Nil
Pilchard, anchovy and bait net (hauling)	Anchovy (<i>Engraulis australis</i>) Blue mackerel (<i>Scomber australasicus</i>) Pilchard (<i>Sardinops neopilchardus</i>) Yellowtail scad (<i>Trachurus novaezelandiae</i>) Whitebait spp. (Family <i>Clupeidae</i> <i>Galaxiidae</i>)	Nil
Purse seine net	Anchovy (<i>Engraulis australis</i>) Australian salmon (<i>Arripis trutta</i>) Whitebait spp. (Family <i>Clupeidae</i> / <i>Galaxiidae</i>) Blue mackerel (<i>Scomber australasicus</i>) Australian bonito (<i>Sarda australis</i>) Oriental bonito (<i>Sarda orientalis</i>) Jack mackerel (<i>Trachurus declivis</i>) Pilchard (<i>Sardinops neopilchardus</i>) Silver trevally (<i>Pseudocaranx dentex</i>) Sweep (<i>Scorpius lineolata</i>) Yellowtail scad (<i>Trachurus novaezelandiae</i>) Skipjack tuna (striped tuna) (<i>Katsuwonus pelamis</i>)	Nil

Conditional target species differ from target species in that they are targeted less commonly by fishers. Conditional target species have been identified for the general purpose hauling

net only as this net has traditionally taken a broader range of species compared to other net types on the OHF.

Section 3c(iv) (Protected Fish) (pp 21 – 22) of the OH FMS lists fish that are protected from fishing by all sectors and from commercial fishing only.

Management arrangements

The OHF is managed under the *Fisheries Management Act 1994* and regulations made under this Act (refer to 'Governing legislation' below). The OHF is predominantly managed by input controls including:

Limited entry:

The OHF was recently converted to a category 1 share management fishery (refer to Section 2 of this submission). Access to the fishery is limited to shareholders in the fishery and/or their nominated fisher who hold shares above any minimum shareholding level established in the *Fisheries Management (Ocean Hauling Share Management Plan) Regulation 2006*. Previously, access to the fishery has been limited to eligible fishers since the restricted fishery regime commenced for the beach hauling sector of the fishery on 1 March 1995 and for the purse seine sector on 1 March 1997.

Controls on fishing gear and boats:

- Refer to 'Fishing methods / gear types' below.
- Boat capacity restrictions are regulated in the *Fisheries Management (Ocean Hauling Share Management Plan) Regulation 2006*

Time and area closures:

Refer to Appendix 1 of this submission 'Closures authorised under Section 8 and Section 11 of the *Fisheries Management Act 1994* relevant to the OHF'.

Other licensing arrangements:

Refer to Section 3 (Fishery Description) (pp10 – 31), Section 4 (Management Controls and Administration) (pp32 – 43) and Section 8 (Goals, Objectives and Management Responses) (pp55 – 96) of the OH FMS.

Changes made to the management arrangements since the FMS was published are outlined in Section 2 of this submission.

Fishing methods / gear types

See Section 3d (Gear used in the fishery) (pp 26 – 28) of the OH FMS and B3 (Methods of Harvesting) (pp B25 – B28) of the EIS for a full description of fishing methods and gear types.

Appendix 2 of this submission provides specific gear dimensions that apply to the OHF including any modifications to gear implemented as a requirement of the OH FMS.

Fishing area

See Section 3b (Area) (pg 16) of the OH FMS and B3 (Existing Operational Areas) (pp B23 – B24) of the EIS. Figure 1 (pg 17) of the OH FMS details the regions in the OHF and ocean zones for reporting of commercial landings taken in NSW waters.

Not all NSW ocean waters and ocean beaches are open to the OHF. Part 6 of the *Fisheries Management (Ocean Hauling Share Management Plan) Regulation 2006* outlines waters in which ocean hauling is prohibited, beaches closed to ocean hauling on a seasonal basis, and weekend/public holiday restrictions.

The *Fisheries Management (Supporting Plan) Regulation 2006* outlines waters closed permanently to all commercial fishing or class of commercial fishing. Appendix 1 of this submission lists those closures authorised under section 8 and section 11 of the *Fisheries*

Management Act 1994 that are specific to the OHF. Further details of fishing closures can be found on the NSW DPI website at www.dpi.nsw.gov.au/fisheries/closures

Two new marine parks have been declared in NSW waters since the OHF was assessed in 2003, the Port Stephens-Great Lakes Marine Park and the Batemans Marine Park. Further details regarding zoning plans and commercial fishing restrictions in these marine parks can be found on the Marine Parks Authority website www.mpa.nsw.gov.au

Number of fishers

As at January 2008 there were 289 fishing business owners in the OHF, with 270 fishers endorsed to operate in the OHF.

Access to the fishery is limited to shareholders in the fishery and/or their nominated fisher who hold a fishing licence with the appropriate endorsements. There are 29 types of endorsement available in the fishery, as follows:

General ocean hauling endorsement—Regions 1, 2, 3, 4, 5, 6 and 7

Hauling net (general purpose) endorsement—Regions 1, 2, 3, 4, 5, 6 and 7

A hauling net (general purpose) endorsement authorises the holder to use a hauling net (general purpose) to take fish in the region of the fishery specified in the endorsement.

Garfish net (hauling) endorsement—Regions 1, 2, 3, 4, 5, 6 and 7

A garfish net (hauling) endorsement authorises the holder to use a garfish net (hauling) to take fish in the region of the fishery specified in the endorsement.

Pilchard, anchovy and bait net (hauling) endorsement—Regions 1, 2, 3, 4, 5, 6 and 7

A pilchard, anchovy and bait net (hauling) endorsement authorises the holder to use a pilchard, anchovy and bait net (hauling) to take fish in the region of the fishery specified in the endorsement.

Purse seine net endorsement

A purse seine net endorsement authorises the holder to use a purse seine net to take fish in any region of the fishery.

The number of shareholders and endorsed fishers in each sector of the OHF is shown in Table 3.

Table 3: No. of shareholders and endorsed fishers () by sector in the OHF (Jan 08)

	Region 1	Region 2	Region 3	Region 4	Region 5	Region 6	Region 7
Hauling net (general purpose)	6 (5)	12 (10)	25 (23)	47 (46)	7 (7)	13 (12)	14 (14)
Garfish net (hauling)	1 (1)	0 (0)	4 (2)	22 (21)	5 (5)	13 (13)	11 (11)
Pilchard, anchovy and bait net	5 (5)	3 (3)	6 (6)	6 (6)	5 (5)	3 (3)	0 (0)
Purse seine net	15 (15) <i>Purse seine net fishery not subject to regions</i>						

Allocation between sectors

- See Section 3e (Interactions with other fisheries) (pp 29 – 31) of the OH FMS, Section 6b (Interaction with other Fisheries) (pp B59 – B63) and Section 6c (Stakeholders) (B63 – B67) of the EIS
- See Appendix 5 of this submission for landings of OHF target and conditional target species by other NSW commercial fisheries.

- Where available, estimated catches from the National Recreational and Indigenous Fishing Survey² for OHF target and conditional target species are provided in Appendix 5.

Governing legislation

Relevant current legal instruments include:

- *Fisheries Management Act 1994*
- *Fisheries Management (General) Regulation 2002*
- *Fisheries Management (Supporting Plan) Regulation 2006*
- *Fisheries Management (Ocean Hauling Share Management Plan) 2006*.

Status of export approval under the EPBC Act

The OHF was granted a five year exemption from the export regulations of the EBPC Act in 2003. This exemption expires on 25 April 2008.

3. Management

Changes to management arrangements

The arrangements have progressed since the OHF was first assessed under the EPBC Act with the commencement of category 1 share management arrangements. This involved the implementation of the Ocean Hauling Share Management Plan, the Supporting Plan encompassing rules that apply to multiple commercial fisheries, and a range of changes to the *Fisheries Management Act 1994* and *Fisheries Management (General) Regulation 2002* to complement the introduction of share management. The Share Management Plan and associated regulatory amendments took effect on 5 February 2007 and were explained in a document sent to DEWHA at the time titled '*Information Paper: New commercial fishery licensing and management arrangements commencing on 5 February 2007*'³

Access to the fishery is limited to shareholders in the fishery and/or their nominated fisher who hold a fishing licence with the appropriate endorsements. The Share Management Plan stipulates the minimum number of shares that a shareholder must hold to be eligible for an endorsement in the OHF.

For relevant licensing arrangements, see Section 4 (Management Controls and Administration) (pp 32 – 43) of the OH FMS noting that significant reforms to the commercial fisheries licensing arrangements occurred in February 2007 as described in the publicly available Information Paper issued at that time.

Implementation of management actions in the Fishery Management Strategy (FMS)

The report: *Fishery Management Strategies Performance Report 2004*⁴ presents information on the implementation of the management actions outlined in the OH FMS up to June 2004.

Refer to Appendix 3 of this submission for a progress statement on the implementation of management actions in the OH FMS for the period June 2004 to June 2007.

Performance of the fishery against objectives, performance indicators and trigger points

The report: *Fishery Management Strategies Performance Report 2004*⁵ summarises the performance of the OHF in NSW based on data for the 2002/03 financial year.

² Henry, G.W. and Lyle, J.M. (2003). The national recreational and indigenous fishing survey. Final report to the Fisheries Research and Development Corporation, Project 99/158. NSW Fisheries Final Report Series No. 40, 188pp.

³ Available at www.fisheries.nsw.gov.au/_data/assets/pdf_file/0015/106512/information-paper.pdf

⁴ Available at www.fisheries.nsw.gov.au/commercial/management-strategies

Refer to Appendix 4 of this submission for a statement of the performance of the OHF against its performance indicators and trigger points contained in the OH FMS based on data for the period 2003/04, 2004/05 and 2005/06.

Compliance Risks

- See Section 5 (Compliance) (pg 44) of the OH FMS.
- Illegal harvesting and black marketing in NSW was assessed in 'Report on Illegal Fishing for Commercial Gain or Profit in NSW⁵'. The report found, among other things, that illegal catching and black marketing of higher priced finfish is a problem along the entire NSW coast, including sea garfish that are apparently scoop netted in a few locations. Under-reporting of catch figures by commercial fishers was also raised as an issue. The NSW Government is progressively developing and implementing actions in response to this report.
- Compliance services relating to the OHF are provided to achieve a high level of compliance in the fishery. As part of the process of developing and implementing compliance operational plans relating to the OHF, Annual District Compliance Plans were developed by identifying compliance issues in a fisheries district level (drawing from the FMS) and set out how the resources allocated and used in a strategic manner, based on localised and state-wide fisheries compliance risks. Compliance goals are pursued strategically by maximising voluntary compliance in the fishery and by creating effective deterrence against illegal activity.
- As part of monitoring compliance operational plans relating to fisheries in NSW, Annual District Compliance Planning models (including the overarching State-wide Compliance Plan) are currently under review and redevelopment. The aim of the review is to align the plans with the Australian National Fisheries Compliance Strategy (AFNCS) which, through the direction of the National Fisheries Compliance Committee (NFCC), seeks to provide guidance to all Australian fisheries jurisdictions in achieving the objectives of the National Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing.
- As part of this process of continuous improvement, NSW DPI (Fisheries Compliance Unit) is currently developing refined compliance risk identification and assessment processes based on standardised risk assessment methodologies to better plan objective compliance services. The model is adaptive, allowing changes at any time, such as acting quickly to combat emerging or opportunistic compliance issues in the short term as well as allowing for longer term strategic responses to issues such as organised criminal involvement in fisheries.
- The rate of compliance in the OHF since the fishery was first assessed are as follows:

2003/04	98%
2004/05	96%
2005/06	96%
2006/07	92%

The rate of compliance is calculated using information from quality inspections reflected on the program activity reports (PARs) that are completed by NSW DPI Fisheries Officers when undertaking inspections of fishers and fishing gear in the OHF.

Consultation processes

⁵ Palmer, M. (2004) Report on Illegal Fishing for Commercial Gain or Profit in NSW. Available at www.fisheries.nsw.gov.au/__data/assets/pdf_file/0004/4819/Black-Market-Report.pdf

- Section 284 of the Act identifies the type of items for which NSW DPI is required to consult with the public and the public consultation procedure.
- See Section 7 (Consultation) (pp 52 – 53) of the OH FMS.

Note: Changes have been made to Ministerial Advisory Councils since the publication of the OH FMS in 2003. Two Ministerial Advisory Councils are currently established under the *Fisheries Management Act 1994*. The Councils provide advice on matters referred to them by the Minister for Primary Industries, or on any other matters the Councils consider relevant.

The wild harvest fishery related Ministerial advisory councils in place at January 2008 are the Seafood Industry Advisory Council (SIAC) and the Advisory Council on Recreational Fishing (ACoRF).

The OHF and each of the other major share management fisheries have representatives on the SIAC. The representatives are nominated by each of the respective management advisory committees and appointed by the Minister for Primary Industries.

The name and composition of Ministerial advisory councils are determined by regulations under the *Fisheries Management Act 1994* and may be altered from time to time.

Cross jurisdictional management arrangements

NSW DPI continues to work with the Commonwealth and Queensland Department of Primary Industries and Fisheries (QDPI&F) to develop complementary arrangements for shared resources. For example:

- Commonwealth and QDPI&F scientific representatives attended the NSW DPI Resource Assessment Workshop held in March 2007, providing input on relevant shared fish stocks;
- NSW DPI representatives attends meetings (either as observers or State representatives) for the Commonwealth Small Pelagic Fishery, South East Trawl and Eastern Tuna and Billfish Management Advisory Committees;
- NSW DPI provides data for assessments by Commonwealth Resource Assessment Groups for species which occur off NSW;
- NSW DPI and QDPI&F submitted a joint research proposal to FRDC in 2006 to estimate the fraction of mature fish (sea mullet) which migrate between fresh water and marine habitats (equates to spawning fraction). This proposal was not successful.
- Senior fisheries staff from NSW DPI and QDPI&F met in Coffs Harbour on 1 – 2 March 2007 to discuss a range of cross-border management and research issues and continue to liaise on an informal basis in relation to contemporary management issues.

Compliance with TAPs, recovery plans, etc and also relevant domestic and international arrangements

None of direct influence in the OHF.

4. Research and monitoring

Results of any research completed relevant to the fishery

Appendix 5 provides references to scientific outputs relevant to the EGF. Scientific outputs and a list of current projects (and their summaries) undertaken by the NSW DPI Systems Research, Wild Fisheries Unit, can be found on the NSW DPI website www.dpi.nsw.gov.au/research/areas/systems-research/wild-fisheries

A summary of outcomes of key research relevant to the OHF is provided below.

- Stewart, J., Hughes, J.M., Gray, C.A. and Walsh, C., 2005. Life history, reproductive biology, habitat use and fishery status of eastern sea garfish (*Hyporhamphus australis*) and river garfish (*H. regularis ardelio*) in NSW waters. Fisheries Research & Development Corporation Project No. 2001/027. *NSW Department of Primary Industries - Fisheries Final Report Series No. 73*. 180pp. ISSN 1449-9967.

The study determined the sexual maturity of eastern sea garfish occurs at approximately 1 year of age with a fast growth rate, becoming vulnerable to fishing at around 1 year of age.

In-depth analyses of reported commercial catch statistics indicated that the fishery for eastern sea garfish has been in serious decline in terms of catches and catch rates. The commercial fishery for eastern sea garfish was dominated (97%) by fish aged less than 2 years old. Estimates of annual mortality rates indicated that approximately 96% of eastern sea garfish died each year, and that much of this was due to fishing. Egg per recruit and spawner biomass per recruit modeling indicated present levels of between 10 and 25% of the unexploited stock. These low levels, combined with high levels of fishing pressure and the life-history of this species (short-lived with recruitment likely to be variable and dependant upon environmental conditions) suggest that the stock of eastern sea garfish has been in danger of recruitment failure.

NSW DPI, in conjunction with commercial fishers, has developed a recovery program for eastern sea garfish that is mainly designed to reduce fishing pressure on the stock, including the continued prohibition on the taking of this species in the EGF. The study found that a reduction in fishing pressure, in conjunction with the declaration of sanctuary areas through Marine Parks, and the life-history of sea garfish (having fast growth rates with sexual maturity occurring at around 1 year of age) suggest that the stock should recover if favourable environmental conditions for recruitment occur in the future.

- Stewart, J., and Hughes, J. M. 2005. Longevity, growth, reproduction and a description of the fishery for silver sweep *Scorpiis lineolatus* off New South Wales, Australia. *New Zealand Journal of Marine and Freshwater Research*, 39: 827-838.

The common silver sweep was studied to determine their age, growth, reproduction and fishery dynamics. The results showed that silver sweep can be extremely old, the oldest found during this 12 month study being 54 years and it was 28.5 cm long. More than 50% of the commercial fishery was of fish greater than 15 years old. Growth was found to be rapid during the first few years before reaching sexual maturity at around 2 to 3 years and at a length of 17.2 cm fork length, after which growth slowed dramatically. Silver sweep displayed a winter spawning period.

- Stewart, J., Walsh, C., Reynolds, D., Kendall, B. & Gray, C. 2004. Determining an optimal mesh size for use in the lampara net fishery for eastern sea garfish *Hyporhamphus australis*. *Fisheries Management and Ecology*, 11: 403-410.

The sizes of eastern sea garfish retained in garfish haul nets of 4 mesh sizes (12, 25, 28 and 32-mm) were compared by doing alternate hauls of experimental nets with commercial fishers in March 2003. The results showed that the 12-mm mesh retained fish of all sizes, the 25-mm mesh retained significant numbers of immature garfish, the 28-mm mesh was well-tuned to retaining only mature fish and the 32-mm mesh had very low catch rates. The study recommended the 28-mm mesh as the most appropriate mesh size for use in garfish haul nets in NSW.

The *Fisheries Management (General) Regulation 2002* prescribes the minimum mesh size for a garfish net (hauling) to be 28mm.

- Henry, G.W. and Lyle, J.M., 2003. *The National Recreational and Indigenous Fishing Survey. Final Report to the Fisheries Research & Development Corporation and the Fisheries Action Program. Project No. 1999/158. NSW Fisheries Final Report Series No. 48. ISSN 1440-3544. 188pp.*

Species specific results relevant to the OHF are included in Appendix 5 of this submission.

- Ward, M., D.W. Schmarr, L.J. McLeay, P.J. Rogers and A. Ivey (submitted). Preliminary investigation of the spawning biomass of sardine (*Sardinops sagax*) off eastern Australia. Report to New South Wales Department of Primary Industries. Appendix 10.1. Development and evaluation of egg-based stock assessment methods for blue mackerel, *Scomber australasicus*, in southern Australia. T. Ward, Fisheries Research & Development Corporation. Project 2002/061.

Monitoring programs

See section 6c (Catch monitoring) (pp 49 – 51) of the FMS.

The NSW DPI fishery monitoring program includes stock assessment work on the key commercial species; use of scientific observers to record information on catches of target species and by-catch; collection of catch and effort data; and port monitoring of landed fish products (e.g. collecting data on fish length and age).

Scientific observer program

The FMSs for all the major commercial fisheries (excluding lobster and abalone) require the implementation of a scientific observer program. The program has been implemented on a cross-fishery basis based on a framework that identifies the highest priority methods for observation based on a number of measures and to ensure that resources are directed towards the methods that pose the greatest risks⁶.

An observer-based survey of ocean haul netting from beaches in NSW⁷ was conducted in 2005, in part, to better understand any interactions between the OHF and threatened species. The survey indicated that the OHF had limited interactions with marine mammals, sea turtles or seabirds during fishery operation, and that there was negligible by-catch while targeting sea mullet with general purpose hauling nets on ocean beaches.

An observer study on the Estuary General sea garfish fishery was undertaken by NSW DPI during 2005 and 2006⁸. The findings from this study are relevant to the OHF because sea garfish are targeted using similar hauling nets on ocean beaches. The study found that the fishery had only minor by-catch, did not retain juvenile sea garfish and had no record of deleterious interactions with threatened species. Ocean line fishing methods have been identified as the current highest priority and a three year scientific observer program for this method commenced on 1 September 2007.

Collection of catch and effort data

See section 6c (Catch monitoring) (pp 50 – 51) of the FMS

⁶ Scandol, J. 2005. A prioritisation model for the NSW observer program. Cronulla NSW DPI.

⁷ MRAG Americas, Inc (2005) Observer-Based Surveys of Ocean Haul Netting from Beaches in New South Wales – Final Report. Unpublished report prepared for NSW DPI.

⁸ Stewart, J. 2007. Observer study in the Estuary General sea garfish haul net fishery in NSW. NSW Department of Primary Industries, Fisheries Final Report Series No. 87, Cronulla, Australia. ISSN 1449-9967

A major project is underway which aims to develop a new catch information management system and related processes which will, among other things:

- introduce and cater for finer scale spatial and temporal reporting;
- improve the Department's ability to interrogate, analyse and report on high quality data; and
- improve the Department's ability to plan research, compliance and management activities (including enhancing cross-jurisdictional cooperation).

Stage 1 of this project which involves business process improvements and core systems functionality is anticipated to be implemented by mid to late 2008.

Port monitoring

Involves the collection of length (and age samples where relevant) of a set of commercially targeted species. The species are determined based upon risks assessments (as part of the EIS) and socio-economic values⁹. For the 2005/06 period the following species were subject of the port monitoring project: sea mullet, yellowfin bream, snapper, yellowtail scad, yellowtail kingfish, mud crabs, bonito, Australian salmon, pilchards, sand flathead, teraglin, red mullet, rubberlip morwong, silver sweep, Balmain bugs, pipis and flounders.

During 2006/07 a number of important species taken by the OHF were subject to size and age composition monitoring (sea mullet, sea garfish, yellowtail scad, pilchards and Australian salmon) while a number of species of secondary importance were subject to size monitoring only (blue mackerel, silver trevally and yellowfin bream). Monitoring of all these species has continued during 2007/08.

Collaborative Research

Annual monitoring of the OHF for pre-spawning sea mullet is carried out in collaboration with staff from Queensland DPI as the fishery straddles the NSW / Queensland border.

Research and monitoring of the purse seine fishery for pilchards is carried out in collaboration with the Australian Fisheries Management Authority as the fishery straddles the boundary between Commonwealth and NSW territorial waters.

5. Catch data

Total catch of target and conditional target species taken in the OHF

Refer to Appendix 6 of this submission.

Total catch of target and conditional target species taken in other NSW fisheries

Refer to Appendix 6 of this submission.

Harvest by each sector (commercial, recreational, Indigenous and illegal)

- Refer to Appendix 6 of this submission for harvest information by the commercial and recreational sectors.
- No estimate available for the Indigenous sector. Refer to Section 6c(iii) (Indigenous people) (pp B64 – B65) and Section 6 (Indigenous Issues) (pp H304 – H306) of the EIS.
- No estimate available for illegal catch.

Fishing effort data

Refer to Appendix 6 of this submission.

⁹ Resource Assessment and Monitoring of Commercially Harvested Species (FSC2003/123)

6. Status of target stock

NSW DPI has developed and implemented a Resource Assessment Framework for the assessment of marine fish species harvested in NSW. The framework incorporates a standardised method of reporting on the exploitation status of fish stocks across all commercial fisheries, including an annual review and interpretation of available data by fisheries scientists. The status of target and conditional target species in the OHF for 2005/06 is shown in Table 4.

Table 4: Status of Target and Conditional Target Species in the OHF for 2005/06

Target Species	Resource Assessment Class		Exploitation Status
	Target	Current	
Australian anchovy	2	4	Undefined
Bonito	2	4	Undefined
Australian salmon	2	4	Undefined
Australian sardine (Pilchard)	2	3	Moderately Fished
Blue mackerel	2	3	Moderately Fished
Jack mackerel	3	4	Uncertain
Dart	2	4	Undefined
Sea garfish	2	2	Overfished
Luderick	2	3	Moderately Fished
Sand whiting	2	3	Fully Fished
Sea mullet	2	2	Fully Fished
Silver trevally	2	3	Growth Overfished
Sweep	2	3	Fully Fished
Whitebait	3	4	Undefined
Yellowfin bream	2	3	Fully fished
Yellowtail scad	2	2	Fully Fished
Mulloway	2	2	Overfished
Diamond fish	4	4	Undefined
Frigate mackerel	3	4	Undefined
Mackerel tuna	4	4	Undefined
Longtail tuna	4	4	Undefined
Spanish mackerel	3	4	Fully Fished
Tarwhine	3	3	Fully Fished

(Source: NSW DPI Resource Assessment System)

7. Interaction with threatened or protected species

Frequency and nature of interactions

Chapter F Section 2 (Threatened and Protected Species) of the OH EIS identifies threatened and protected species (listed under the NSW *Threatened Species Conservation Act 1995*, *Fisheries Management Act 1994* and the EPBC Act 1999) that may interact with the OHF and the nature of the potential impacts. The EIS found that the fishery in its current form was not having a direct and/or adverse impact on any threatened species, populations, ecological communities or their habitats. It was noted in the EIS that there was a high degree of uncertainty associated with this assessment due to the paucity of quantitative data and reliance upon anecdotal or speculative information.

An observer-based survey of ocean haul netting from beaches in NSW¹⁰ was conducted in 2005, in part, to better understand any interactions between the OHF and threatened species. Observers did not report any interactions with marine mammals, sea turtles or seabirds during fishery operation.

Mandatory reporting of threatened species interactions was implemented for the OHF in 2005. No reports of threatened species interactions have been reported by endorsement holders in the OHF pursuant to the reporting requirements.

Management actions taken to reduce interactions and results of such action

MR 1.1(a)iii of the OH FMS: *Design and implement an industry-funded study using scientific observers to document the interaction with ocean hauling fishing methods on fish habitats and on threatened species.*

Progress: The observer-based survey of ocean haul netting from beaches in NSW¹⁰ found that the ocean haul netting method was characterised by predominant catches of the target species with low by-catch and discards. As mentioned above, observers did not report any interactions with marine mammals, sea turtles, or seabirds during fishery operation.

Scientific observer programs for other OHF methods (purse seine, pilchard anchovy bait net, and garfish hauling net) are to be implemented in conjunction with all major NSW commercial fisheries (excluding lobster and abalone) on a cross-fishery basis. NSW DPI has developed a framework that identifies the highest priority methods for observation based on a number of measures and to ensure that resources are directed towards the methods that pose the greatest risks¹¹. Ocean line fishing methods have been identified as the current highest priority and a three year scientific observer program for this method commenced on 1 September 2007.

MR 3.1(a) of the OH FMS: *Modify the catch and effort returns, in consultation with Ocean Hauling MAC, to collect and monitor information on sightings and captures of threatened or protected species.*

Progress: Completed. 'Threatened Species Interaction Reporting Forms' and 'Threatened and Protected Species Identification Guide for Fishers' were distributed to all OH fishers in 2005. The reporting form is required to be completed and submitted to NSW DPI following any interaction with a species of conservation interest during any commercial fishing operations.

MR 3.1(b) of the OH FMS: *Implement, in consultation with the Ocean Hauling MAC, the provisions of any relevant threatened species recovery plans or threat abatement plans.*

Progress: None of direct influence in the OHF.

MR4.5(b)iv of the OH FMS: *Review in consultation with the Ocean Hauling MAC on an annual basis the established code of conduct, enforceable by condition on licence, for the beach based sector of the fishery which outlines rules for the appropriate handling methods for incidental catches of marine birds or mammals.*

Progress: Implemented

MR 4.5(c)ii of the OH FMS: *Develop a code of conduct in consultation with the Ocean Hauling MAC, to be enforceable by conditions on licence, for the boat based sector of the fishery with respect to the use of best practice handling and release methods for the incidental catches of protected fish, birds, reptiles, mammals, plants and algae, including aborting a shot if dolphins become entangled.*

¹⁰ MRAG Americas, Inc (2005) Observer-Based Surveys of Ocean Haul Netting from Beaches in New South Wales – Final Report. Unpublished report prepared for NSW DPI.

¹¹ Scandol, J. 2005. A prioritisation model for the NSW observer program. Cronulla NSW DPI.

Progress: Implemented

8. Impacts of the fishery on the ecosystem in which it operates

Results of any Ecological Risk Assessments

There are a range of sections within the OH EIS which examined the ecological risk of the fishery including Chapter E (Impact on the Fish Resources) (pp 193 – 231); Chapter F (Impact on the Biophysical Environment) (pp 233 – 287).

For the OHF one species was rated as an extreme risk of over-fishing, the eastern sea garfish. A recovery program was published in February 2005 and a number of management actions required in the OHFMS have been implemented to promote recovery of the stock, including MR 2.5.1 (e), (f), (g), (i), and (j), MR 2.5.2(k) and (l). Refer to Attachment 1 of this submission for further information regarding implementation of management actions.

Silver trevally was also rated as a high risk of overfishing. A recovery program is required to be developed under the Ocean Trawl Fishery Management Strategy as silver trevally is a primary species for that fishery. The OHF will be required to adopt any management measures required under a recovery program for the species.

At this stage NSW DPI has introduced, in September 2007, a minimum legal length of 30 cm (total length) for silver trevally to assist the recovery of the species. In addition, significant areas have been closed to trawling as part of the introduction of the Batemans Marine Park zoning plan.

Nature of the impacts on the ecosystem including impacts on any key conservation values

The EIS for the OHF considered impacts from the fishery were negligible both in terms of habitat damage and subsequent effect on fauna; found no direct and/or adverse impacts on any threatened species, populations, ecological communities or their habitats; and that there is likely to be limited potential for alteration of the trophic structure of beach, reef or seagrass ecosystems.

Management actions taken to reduce the impacts

A number of management actions have been implemented as part of the OH FMS which constrain the impact of the fishery on the ecosystem (see Goals 1 – 3 (pp 57 – 76)). Implementation status of these management actions is included in Appendix 3.

Monitoring the management of impacts of the fishery on the ecosystem, including impacts on any key conservation values, is undertaken as part of the FMS performance assessment process which includes a comparison of performance indicators against the respective trigger points and reviewing the progress in implementing the management actions identified in the OH FMS.

9. Consolidated detailed information outlining progress in implementing recommendation and conditions

The Australian Government's Assessment of the New South Wales Ocean Hauling Fishery in 2003 identified a number of management actions within the OH FMS which were considered crucial to the long term sustainable management of the fishery. The implementation of these specific management actions are to be reviewed as part of the next Commonwealth review of the fishery.

Refer to Appendix 7 of this submission.

Appendix 1: Closures authorised under Section 8 or Section 11 of the *Fisheries Management Act 1994* relevant to the OHF

Method	Waters	Time	Period
All methods of commercial fishing, other than commercial line fishing, by licensed commercial fishers including persons who hold permits issued under section 37 of the <i>FMA 1994</i> to undertake commercial fishing activity in NSW waters.	All waters within a 100 metre radius of any NSW Waterways Authority Emergency Buoys situated in Trial Bay (co-ordinates outlined in notification).	Total	For a period of 5 years from 29 August 2003
All methods	All waters from the mean high water mark of Cook Island to a boundary defined by five (5) marker buoys (co-ordinates outlined in notification).	Total	For a period of 5 years from 2 July 2004
Nets of every description except the landing net, as prescribed by <i>FM(G)R2002</i>	All waters of that part of Shell Harbour north west of a line drawn from the southern extremity of the northern breakwater to the eastern extremity of the southern breakwater.	Total	For a period of 5 years from 6 August 2004
Nets of every description, except the dip or scoop net, hand hauled prawn net and the landing net, as prescribed by <i>FM(G)R 2002</i> .	All waters of Killick or Crescent Head Creek and its creeks, tributaries, inlets and lagoons, together with waters of the South Pacific Ocean, north, north west of a line drawn from the northern point of Little Nobby to a post approximately 1 kilometre north along the beach from the confluence of Killick Creek and the South Pacific Ocean.	Total	For a period of 5 years from 6 August 2004
Nets of every description, except the dip or scoop net, hand hauled prawn net, push or scissors net, and the landing net, as prescribed by <i>FM(G)R 2002</i> .	All waters of that part of Port Hacking north of a line drawn from the southern extremity of Hungry Point north-easterly to a point on the northern foreshore of Port Hacking due south of the Bass and Flinders Memorial.	6am on Saturday to 6am on Monday, and from 6am to 6pm on any weekday public holiday.	For a period of 5 years from 17 September 2004
Nets of every description except the landing net, as prescribed by <i>FM(G)R 2002</i> .	All waters within a 200 metre radius of the Tathra and Merimbula Fishing Platforms. The waters of Snug Cove, generally east of a line drawn from the eastern extremity of Cattle Bay to a position 50 metres along the Eden breakwater in a westerly direction from the Eden unloading wharf.	Total	For a period of 5 years from 10 December 2004

Method	Waters	Time	Period
Nets of every description, except the dip or scoop net and the landing net, as prescribed by <i>FM(G)R 2002</i> .	The whole of the waters of Front Beach, Trial Bay, extending from the western most extremity of the beach generally easterly for 800 metres but not including the waters of Saltwater Creek	20 December to 31 January each year,	For a period of 5 years from 1 April 2005
Purse seine nets	Black Road Bait Ground (North Narrabeen	Total	For a period of 5 years from 6 June 2005
Nets of every description, other than the landing net	All waters of Clovelly Beach (also known as Little Coogee Bay) westwards of a line drawn from the eastern most point of the headland at Clovelly surf club, north to the eastern most point of Shark Point.	Total	For a period of 5 years from 10 November 2006
All methods	All waters adjacent to Bouddi National Park enclosed within boundaries as define in the notification.	Total	For a period of 5 years commencing on 28 September 2006
Nets of every description, except the landing net, as described in the <i>FM(G)R 2002</i> .	The whole of the ocean waters enclosed by a line drawn from the eastern extremity of the southern breakwater at Forster, generally southeast to a point on highwater mark adjacent to the northern end of Boundary Street, Forster. Conditions for use of garfish net (hauling) (south of Haydens Rock outlined in notification	Total	For a period of 5 years commencing on 30 November 2006

General Additional Closures Relevant to OHF

Closure	Period
Taking of invertebrates from Intertidal Protected Areas	For a period of 5 years commencing on 10 November 2006
Shark fins	For a period of 5 years commencing on 1 September 2006
Taking Australian salmon and tailor by nets	For a period of 5 years commencing on 31 August 2006

Appendix 2: Description of Ocean Hauling Gear

Hauling net (General Purpose)

Parameters	Pre FMS regulated definition	FMS recommended amendments	Implementation
Area	Ocean waters and sea beaches	Ocean waters and sea beaches	Schedule 1 of the FM(G)R 2002 7(a) of Table to Clause 26 FM(G)R 2002
Time		24hr operations subject to seasonal and weekend closures	Clause 11 & 12 FM(OHSMP)R 2006
Total Length	1 March to 31 July each year – max 400m	1 March to 31 July each year – max 400m	Clause 26 FM(G)R 2002
Mesh size, Bunt or Wings	1 August to 28 February Mesh of wings not <80mm Mesh of Bunt not <50mm Bunt not > 1/3 total net length 1 March to 31 July each year Mesh of wings 65 to 86mm Mesh of bunt 50 to 65mm Bunt not > 1/3 total net length	1 August to 28 February Mesh of wings not <80mm Mesh of Bunt not <50mm Bunt not > 1/3 total net length 1 March to 31 July each year Mesh of wings 65 to 86mm Mesh of bunt 50 to 65mm Bunt not > 1/3 total net length	Clause 26 FM(G)R 2002
Method of Use	The net is used only by the method of hauling. The hauling net, once shot (any part other than the hauling line) is continued without interruption or delay until completed upon which any fish are immediately removed.	To be shot from the beach and retrieved to the beach. The net is used only by the method of hauling. The hauling net, once shot (any part other than the hauling line) is continued without interruption or delay until completed upon which any fish are immediately removed.	Clause 26 1(h)&(m) FM(G)R 2002
Minimal No. or Fishers Required	The net is operated by at least two commercial fishers.	The net is operated by at least two appropriately endorsed commercial fishers.	Clause 26 1(k) FM(G)R 2002 Clause 14 FM(OHSMP)R 2006

Hauling net (General Purpose) in Jervis Bay

Parameters	Pre FMS regulated definition	FMS recommended amendments	Implementation
Area	All other waters (except inland waters) – includes Jervis Bay	Jervis Bay	Schedule 1 of the FM(G)R 2002 7A(a) of Table to Clause 26 FM(G)R 2002
Time		24hr operations subject to seasonal and weekend closures	Clause 11 & 12 FM(OHSMP)R 2006
Total Length	Maximum length – 375m	1 August to 28 February Maximum length – 375m 1 March to 31 July Maximum length – 400m	Clause 26 FM(G)R 2002
Mesh size, Bunt or Wings	Bunt does not exceed 90m or ¼ of total length of net (whichever is lesser) Centre piece not >50m nor <25m in length Mesh – not >50m in length Remainder of bunt – not >50m, mesh not <50mm Mesh of wings – not <80mm	1 August to 28 February Bunt does not exceed 90m or ¼ of total length of net (whichever is lesser) Centre piece not >50m nor <25m in length Mesh – not <30mm nor >50mm Remainder of bunt – not >50m in length, of mesh not <50mm Mesh of wings – not <80mm 1 March to 31 July each year Mesh of wings 65 to 86mm Mesh of bunt 50 to 65mm Bunt not >1/3 total net length	7A(b) of Table to Clause 26 FM(G)R 2002
Method of Use	The net is used only by the method of hauling. The hauling net, once shot (any part other than the hauling line) is continued without interruption or delay until completed upon which any fish are immediately removed.	To be shot from the beach and retrieved to the beach. The net is used only by the method of hauling. The hauling net, once shot (any part other than the hauling line) is continued without interruption or delay until completed upon which any fish are immediately removed.	Clause 26 1(h)&(m) FM(G)R 2002
Minimal No. or Fishers Required	The net is operated by at least two commercial fishers.	The net is operated by at least two appropriately endorsed commercial fishers.	Clause 26 1(k) FM(G)R 2002 Clause 14 FM(OHSMP)R 2006

Garfish Net (Hauling)

Parameters	Pre FMS regulated definition	FMS recommended amendments	Implementation
Area	Ocean waters and sea beaches	Ocean waters and sea beaches	Schedule 1 of the FM(G)R 2002 2(a) of Table to Clause 29 FM(G)R 2002
Time			
Total Length		Maximum length – 300m with rope not >300m	2(b) of Table to Clause 29 FM(G)R 2002
Mesh size, Bunt or Wings	Mesh throughout – not <28mm nor >85mm	Mesh throughout – not <28mm nor >85mm. No mesh size tolerance	2(b) of Table to Clause 29 FM(G)R 2002
Method of Use	The net is used only by the method of hauling. In offshore ocean waters the net is not landed by any method other than onto the tray of a boat.	For beach based – shot and hauled to and from the shoreline. The net is used only by the method of hauling. For boat based-shot and hauled to and from a boat. In offshore ocean waters the net is not landed by any method other than onto the tray of a boat.	Clause 29 FM(G)R 2002
Minimal No. or Fishers Required		The net is to be operated by at least two appropriately endorsed commercial fishers.	Clause 29(d)(v) FM(G)R 2002 Clause 14 FM(OHSMP)R 2006

Garfish Net (Hauling) in Jervis Bay

Parameters	Pre FMS regulated definition	FMS recommended amendments	Implementation
Area	That part of Jervis Bay within NSW, together with all the bays and beaches of that part, generally westerly from a line drawn between Point Perpendicular and Bowen Island.	That part of Jervis Bay within NSW, together with all the bays and beaches of that part, generally westerly from a line drawn between Point Perpendicular and Bowen Island.	Clause 29 refers to Jervis Bay however due to the introduction of the Jervis Bay Marine Park garfish net (hauling) operations are limited.
Time			
Total Length		Maximum length – 300m with rope that's not >300m	3(b) of Table to Clause 29 FM(G)R 2002
Mesh size, Bunt or Wings	Mesh throughout – not <28mm nor >36mm	Mesh throughout – not <28mm nor >36mm	3(b) of Table to Clause 29 FM(G)R 2002
Method of Use	The net is used only by the method of hauling	For boat-based – shot and hauled to and from a boat. For beach-based – shot and hauled to and from the shoreline.	Clause 29 FM(G)R
Minimal No. or Fishers Required		The net is operated by at least two appropriately endorsed commercial fishers.	Clause 29(d)(v) FM(G)R 2002 Clause 14 FM(OHSMP)R 2006

Pilchard, Anchovy and Bait Net

Parameters	Pre FMS regulated definition	FMS recommended amendments	Implementation
Area	Ocean waters and sea beaches	Ocean waters and sea beaches	Schedule 1 of the FM(G)R 2002 1(a) of Table to Clause 30 FM(G)R 2002
Time		24hr operations subject to seasonal and weekend closures	Clause 11 & 12 FM(OHSMP)R 2006
Total Length		Maximum length – 300m	1(b) of Table to Clause 30 FM(G)R 2002
Mesh size, Bunt or Wings	Mesh throughout - not <13mm	Mesh throughout – not <13mm	1(b) of Table to Clause 30 FM(G)R 2002
Method of Use	The net is used only by the method of hauling	The net is used only by the method of hauling For boat-based – shot & hauled to and from a boat For beach-based – shot & hauled to and from the shoreline.	Clause 30 FM(G)R 2002
Minimal No. or Fishers Required		The net is to be operated by at least two appropriately endorsed commercial fishers.	Clause 29(d)(v) FM(G)R 2002 Clause 14 FM(OHSMP)R 2006

Purse Seine Net

Parameters	Pre FMS regulated definition	FMS recommended amendments	Implementation
Area	Ocean waters	Ocean waters	Schedule 1 of the FM(G)R 2002 2(a) of Table to Clause 31 FM(G)R 2002
Time		24hr operations subject to time and area	Clause 11 & 12 FM(OHSMP)R 2006
Total Length		Either maximum length – 1000m or as prescribed by the net registration (whichever is less)	2(b) of Table to Clause 31 FM(G)R 2002
Mesh size, Bunt or Wings	Mesh throughout – not >150mm	Mesh throughout – not >150mm	2(b) of Table to Clause 31 FM(G)R 2002
Method of Use		To be shot and retrieved to the same vessel, continuous shot.	Clause 31 FM(G)R 2002
Minimal No. or Fishers Required			

Purse Seine Net in Jervis Bay and Twofold Bay

Parameters	FMS regulated definition	FMS recommended amendments	Implementation
Area	Twofold Bay & Jervis Bay	Two fold Bay & Jervis Bay	Schedule 1 of the FM(G)R 2002 1(a) of Table to Clause 31 FM(G)R 2002
Time		24hr operations subject to time and area closures	Clause 11 & 12 FM(OHSMP)R 2006
Total Length	Maximum length – not >275m	Maximum length – not >275m	1(b) of Table to Clause 31 FM(G)R 2002
Mesh size, Bunt or Wings		Mesh throughout – not >150mm	1(b) of Table to Clause 31 FM(G)R 2002
Rings		Along length of the leadline	Clause 31 FM(G)R 2002
Method of Use		To be shot and retrieved to the same vessel, continuous shot	Clause 31 FM(G)R 2002
Minimal No. or Fishers Required			

Appendix 3: Report on the Implementation of Management Actions within the Ocean Hauling Fishery Management Strategy

ACTION	STATUS
<p>1.1(a) Design and implement an industry-funded study using scientific observers to achieve the following objectives:</p> <ul style="list-style-type: none"> i. document rate and species composition of bycatch for each gear type ii. estimate the accuracy of reporting using standard catch returns including both the quantity caught (and released) and the identity of species recorded (including threatened and endangered species) iii. document the interaction with OH fishing methods on fish habitats and on threatened species <p>(from 2003)</p>	<p>Scientific observer surveys have been conducted on the use of general purpose hauling nets in the OH (beach) fishery from April to July 2005¹².</p> <p>The FMSs for all the major commercial fisheries (excluding lobster and abalone) require the implementation of a scientific observer program. NSW DPI has therefore implemented the program on a cross –fishery basis and has developed a framework that identifies the highest priority methods for observation based on a number of measures and to ensure that resources are directed towards the methods that pose the greatest risks¹³. Ocean line fishing methods have been identified as the current highest priority and a three year scientific observer program for this method commenced on 1 September 2007.</p>

¹² MRAG Americas. 2005. Observer-based Surveys of Ocean Haul Netting from Beaches in New South Wales Final Report. Unpublished report prepared for NSW DPI

¹³ Scandol, J. 2005. A prioritisation model for the NSW observer program. Cronulla NSW DPI.

ACTION**STATUS**

1.1(b) Using best available knowledge and appropriate technology, modify fishing practices to reduce the impacts of the fishery on non-retained fish, invertebrates, reptiles mammals and birds
(current & ongoing)

Independent observations of fishing practices generated by the scientific observer surveys are to provide information to assist this process. Scientific observer surveys conducted on the use of general purpose hauling nets in the OH (beach) fishery did not report any interactions with marine mammals, sea turtles or seabirds during fishery operation. The survey also reported that the OH fishery is characterised by predominant catches of the target species with low bycatch and discards. No recommendations to modify fishing practices resulted from this survey.

Other OHF methods will be subject to a scientific observer survey in accordance with NSW DPI's prioritisation framework referred to above (1.1(a)).

1.1(c) Use best practice techniques for the handling of incidentally captured organisms
(current & ongoing)

Independent observations of fishing practices generated by the scientific observer surveys are to provide information to assist this process. Scientific observer surveys conducted on the use of general purpose hauling nets in the OH (beach) fishery did not raise any concerns with regard to handling techniques and therefore did not trigger a review or modification under the FMS.

Other OHF methods will be subject to a scientific observer survey in accordance with NSW DPI's prioritisation framework referred to above (1.1(a)).

ACTION	STATUS
<p>2.1.1(b) Develop a system for and conduct a formal stock assessment of the primary species within five years and review the assessment at least every three years thereafter (from 2003)</p>	<p>The Resource Assessment Framework was finalised in 2004. This framework is a well-defined, accessible program for the resource assessment of all marine fish species harvested in NSW. The type of assessment carried out for each species (or species complex) will take account of commitments made in FMSs, levels of risk identified in the environmental impact statements, the commercial and recreational importance of the species and its biology.</p> <p>Refer to '<i>A Framework for the Assessment of Harvested Fish Resources in NSW</i>¹⁴ and '<i>Determining the Biological Sustainability of Wild Fisheries in NSW: Concepts and Definitions</i>¹⁵.</p>
<p>2.2(c) For each method in the OHF use species-based closures as the preferred means of implementing short-term (up to several years) constraints on active fishing effort as required. (as needed)</p>	<p>Refer to Appendix 1 of this submission</p>
<p>2.2(d) For all methods (other than purse seining) in the OHF, use minimum shareholdings to determine access to a method (December 2003)</p>	<p>Implemented through the <i>Fisheries Management (Ocean Hauling Share Management Plan) Regulation 2006</i>.</p>

¹⁴ Scandol, J.P. 2004. A Framework for the Assessment of Harvested Fish Resources in NSW, NSW Department of Primary Industries – Fisheries Resource Assessment Series No. 15, ISSN 1449- 9940.

¹⁵ Scandol, J.P. 2006. Determining the Biological Sustainability of Wild Fisheries in NSW: Concepts and Definitions. Cronulla, NSW DPI.

ACTION	STATUS
<p>2.2(e) Develop and implement a policy to manage the harvest of bait for the Commonwealth Tuna Fishery in NSW waters. (various timeframes)</p>	<p>The following actions have been achieved:</p> <ul style="list-style-type: none"> • code of conduct developed and implemented, • a cap on the number of permits issued, and • a catch reporting system developed and implemented. <p>A review of long term access is currently being undertaken with regard to the OH FMS and the share management fishery scheme.</p>
<p>2.2(f) Develop and implement a policy (including reporting procedures) to manage the use of the lift net for collection of bait by NSW line fishers. (various timeframes)</p>	<p>A review of long term access is currently being undertaken with regard to the approved fishery management strategies for the OH and Ocean Trap and Line fisheries, and the share management fishery scheme.</p>
<p>2.2(g) Develop a nomination policy for all sectors of the OHF (July 2004)</p>	<p>Nomination policy in place as at July 2004 has since been refined in conjunction with commercial fishery licensing reforms that commenced in association with share management provision on 5 February 2007.</p>

ACTION	STATUS
<p>2.2(i) Develop an index of relative fishing power between boat-based and beach-based hauling (for methods that are common to both) and introduce appropriate management controls based on the differences in fishing power (July 2004)</p>	<p>Endorsements in the garfish net (hauling) and pilchard, anchovy bait net (hauling) share classes can be used from either beach or boat. Endorsed fishers can choose the most cost efficient method suited to their individual operation. Minimum shareholding requirements are provided for in the <i>Fisheries Management (Ocean Hauling Share Management Plan) Regulation 2006</i> and some level of restructuring in the share classes will occur as a result of this process.</p> <p>Further consideration of this management action, that is, management at the beach/boat level, may be considered where stock concerns arise.</p>
<p>2.3 (a) Establish minimum entry requirements for new entrants at the fishing business level to prevent increases in effort by small businesses (OH - December 2003)</p>	<p>In general, the minimum entry requirement for a new entrant at the fishing business level is that all components (as outlined in the fishing business determination¹⁶) of a fishing business must be transferred to that person in its entirety. These transfer rules have been included in legislation to ensure no increase in the number of fishing businesses, number of operators within the OHF and number of each endorsement type in the OHF.</p> <p>Minimum shareholding requirements are provided for in the <i>Fisheries Management (Ocean Hauling Share Management Plan) Regulation 2006</i> and, in respect of a new entrant, apply at the share class level.</p>

¹⁶ A fishing business determination identifies the fishing business and the components of that fishing business as recorded by NSW DPI. The following things have been determined as components of fishing businesses (where applicable): the shares held by the business, the endorsements allocated to the business, and any external fishing authorities connected to the business that have been issued by another State, Territory or Commonwealth agency.

ACTION	STATUS
<p>2.5(a) Where a fishery is a major harvester of an overfished species, develop and implement a recovery program for the species within a specified timeframe (recovery program to be drafted for consultation within 6 months)</p>	<p>At the 2006 Aquatic Resource Assessment Workshop the exploitation status for mulloway (<i>Argyrosomus japonicus</i>), a key secondary species in the EG Fishery and a conditional target species in the OH Fishery, was changed from 'undefined' to 'overfished' for the 2004/05 period. The development of a recovery program commenced in 2007.</p> <p>Eastern sea garfish was rated as an extreme risk of over-fishing in the OH EIS. A recovery program was published in February 2005.</p>
<p>2.5(b) Participate in any consultation with other harvest sectors of silver trevally over the development of a recovery program for that species, in particular consider the introduction of an appropriate size limit to address the growth overfishing problem (OH - immediate)</p>	<p>The Ocean Trawl Fishery Management Strategy requires a recovery program for silver trevally to be developed within one year of the date of approval of the strategy, i.e. by March 2008. Within this context and following the review of saltwater size limits for the recreational and commercial fisheries, a minimum legal length of 30cm (total length) for silver trevally was introduced 3 September 2007 to assist in the recovery of the species. In addition, significant areas have been closed to trawling as part of the introduction of the Batemans Marine Park zoning plan.</p>

ACTION	STATUS
<p>2.5.1(e) Discuss as soon as possible with the Estuary General MAC and industry to:</p> <ul style="list-style-type: none"> i. remove the method of garfish bullringing from the Ocean Hauling Fishery ii. constrain garfish bullringing to estuaries iii. remove the method of garfish hauling from the Estuary General Fishery iv. commence discussion with the Estuary General MAC over more appropriate definitions of the waters where these methods can be applied. <p>(July 2004)</p>	<p>Implemented.</p> <p>The use of bullringing nets has been removed from the OHF. The recovery program developed for sea garfish includes the continued prohibition on the taking of this species in the EG fishery until either the species is fully recovered or suitable alternative actions are included in the management plan for that fishery. The recovery program also provides for limited access to fishers (via a permit scheme) to operate garfish hauling nets in specific estuarine waters to assist with sea garfish research undertaken as part of the recovery program for this species.</p>
<p>2.5.1(g) Monitor the impact of the zoning of boat-based garfish hauling on the harvest of the sea garfish stock. Should the zoning not have an immediate impact on landings of sea garfish, implement a seasonal closure that will promote recovery of the species.</p> <p>(from December 2002)</p>	<p>The Eastern Sea Garfish Recovery Program includes performance indicators based on catch per unit effort and length/age frequency that are monitored, in addition to fishery based landings information, as part of the resource assessment and FMS performance monitoring processes.</p> <p>There has been an overall reduction in sea garfish landings since 2001/02. A fishing closure is currently not considered necessary.</p>
<p>2.5.1(h) Identify the level of active effort for the garfish hauling net and implement appropriate minimum shareholdings immediately that will lead to the recovery of sea garfish</p> <p>(July 2004)</p>	<p>Level of active effort determined. Minimum shareholdings to be implemented through the <i>Fisheries Management (Ocean Hauling Share Management Plan) Regulation 2006</i>.</p>

ACTION	STATUS
3.1(a) Modify the reporting system, in consultation with the MACs, to collect and monitor information on sightings and captures of threatened or protected species using catch returns (December 2002)	Implemented
4.1(a) Estimate the size of the non-commercial catch, and the relative impact of this on resources harvested in the relevant fishery (July 2004)	This is being done through the resource assessment process ¹⁷ .
4.1(c) Review the quantum of beach available to hauling in the OH fishery and develop performance measures for monitoring and modifying that amount over time (December 2004)	This is done on an annual basis through the FMS performance monitoring process. The length of beach totally closed to ocean hauling fishing is monitored. A review is triggered if the total length of beach open to ocean hauling increases above the length open at the commencement of the OH FMS.
4.2(a) Evaluate catch levels and monitor management structures in fisheries that are outside NSW jurisdiction but where catches in those fisheries impact on stocks shared with the OHF (annually)	This is being done through the resource assessment process.
4.2(b) Monitor the catch of the target OH species that are also taken in other NSW commercial fisheries (annually)	This is being done through the resource assessment process.

¹⁷ The Resource Assessment Process is the annual review and interpretation of data available for each primary/target and key secondary/conditional target/byproduct species (or species complex) by fisheries scientists in accordance with the Resource Assessment Framework; including consultation with the Catch and Effort Working Group.

ACTION	STATUS
<p>4.3(a) Include in the shareholding scheme a maximum shareholding that sets a maximum level of effective control of fishing access within each region or method by any single individual or entity (July 2004)</p>	<p>Implemented through the <i>Fisheries Management (Ocean Hauling Share Management Plan) Regulation 2006</i>.</p>
<p>4.5(b) Review on an annual basis in consultation with the OH MAC the established code of conduct for the beach-based sector of the fishery (annually)</p>	<p>This matter is included on the OHMAC agenda each year, or, as required.</p>
<p>5.2(a) Determine if there is a means by which the purse seine fishers could keep small quantities of their catch alive in holding pens for short periods, while meeting the legislative and policy requirements of NSW DPI and other stakeholder groups or agencies (July 2006)</p>	<p>This matter has been considered by the OHMAC. The MAC recommended that further information should be provided by Industry, regarding specific proposals that address other agencies' and stakeholder concerns, to progress this management action.</p>
<p>5.2(b) Develop, in consultation with the OH MAC, a performance measure for the economic viability at the fishery wide level (July 2005)</p>	<p>Performance indicators monitoring economic viability have been refined¹⁸. Average market values of shares and net returns to the fishery, taking into account indicative industry operational and government management costs relevant to the fishery, will be used as performance indicators.</p>

¹⁸ Refer to 'Review of Commercial Fishery Management Strategy Performance Monitoring'. A copy can be obtained from the NSW DPI website at: <http://www.fisheries.nsw.gov.au/commercial/management-strategies>

* Advisory Council on Commercial Fishing has been replaced by the Seafood Industry Advisory Council

ACTION	STATUS
<p>5.2(c) Develop, in consultation with the Advisory Council on Commercial Fishing*, a cost recovery framework (November 2005)</p>	<p>The FMSs for the major commercial fisheries (excluding lobster and abalone) include a management action to develop a cost recovery framework. A coordinated approach across all fisheries is considered the most efficient approach due to many fishers being endorsed in multiple fisheries. Further consultation with SIAC and MACs is needed to progress this management action.</p>
<p>5.2(d) Develop, in consultation with the OH MAC, a system to provide for appropriate new additions to the lists of target species for each of the OH methods. The system should also provide for assessment of proposed changes to the application of fishing methods (or new methods) (December 2003)</p>	<p>Early discussions have been held with the Ocean Hauling MAC in relation to this management action and work on a draft system has commenced and is currently being further developed following the implementation of share management and preparation of a 'Developing Fisheries Resources Policy' for NSW. Consultation will occur with relevant stakeholders before the resulting system is finalised.</p>
<p>5.3(a) Implement the share management provisions of the FM Act 1994 (by December 2003)</p>	<p>Implementation of share management is a four-stage process. Shares were allocated on a provisional basis to eligible persons in December 2004. Stage 3; the 'Limited Access Stage', commenced in March 2005 and the final stage of share management commenced on 7 February 2007 with the implementation of share management plans.</p>
<p>6.1(a) Develop, implement and monitor, in consultation with the OH MAC, fishery compliance operational plans and encourage voluntary compliance through educational programs (July 2004)</p>	<p>Developed on an annual basis, and OH MAC provides input on priorities from an industry perspective.</p>

ACTION**STATUS**

6.1(b) Implement an endorsement suspension scheme and share forfeiture scheme based on a demerit point scale for serious offences and habitual offenders
(December 2003)

The FMSs for all the major commercial fisheries (excluding lobster and abalone) require the implementation of an endorsement suspension and share forfeiture scheme based on a demerit point scale. NSW DPI will therefore implement the schemes on a cross-fishery basis. Preliminary discussions have occurred with the MACs to prioritise offences under the *Fisheries Management Act 1994* and *Fisheries Management (General) Regulation 2002* according to low, medium or high rankings. Ranking the offences differentiates between the amounts of the demerits points that may apply per offence and will assist in the development of a cross-fishery ranking system that will underpin the schemes.

Further development is pending finalisation of current reform and refinement of the associated regulations to ensure compliance with the share management provisions of the Act.

8.1(g) Develop an objective system for defining and setting trigger points to detect concerning trends in landings of all species permitted to be taken in the OHF
(annually from 2003)

Research has been undertaken on improving methods to detect trends in landings. The 2.5 year review¹⁹ of all (EG, OH & EPT) performance indicators is complete and resulted in a move away from landings based triggers towards indicators and triggers to reflect stock status and progress towards improved resource assessment across all species.

¹⁹ Review of Commercial Fishery Management Strategy Performance Monitoring' can be obtained from the NSW DPI website at: <http://www.fisheries.nsw.gov.au/commercial/management-strategies>

ACTION**STATUS**

8.2(b) Periodically review, in consultation with the OH MAC, the mandatory catch and effort return forms submitted by OH fishers and implement changes if:

- i. the data collected is perceived to be of poor quality or insufficient for the purpose of conducting an environmental or stock assessment, and/or
- ii. the forms are found to be exceedingly complex for fishers to complete, ensuring an emphasis on the quality rather than the quantity of information collected

(biannually from July 2004)

This has traditionally been done as part of the resource assessment process and through the Catch and Effort Working Group. The catch and effort returns are being fully reviewed as part of the current catch records reform project.

8.2(c) Determine accuracy of current recording of species identification in catch records and provide advice to industry to make needed changes (may need to wait for results from observer study)

(July 2004 and ongoing)

The catch records reform project currently underway is examining ways to improved species recording on catch returns.

ACTION**STATUS**

8.3(a) Consult with the OH MAC on a strategy for improving the understanding of economic and social information relating to the fishery, taking into account the information gaps outlined in the economic and social assessment in the Environmental Impact Statement for the relevant fishery

(July 2005)

The FMSs for the major commercial fisheries include management actions to promote research projects to gain knowledge relevant to economic and social factors affecting fisheries, develop strategies to identify economic issues, and, under the Ocean Trawl FMS, implement targeted surveys to obtain information on the social and economic status of commercial fisheries.

8.3(b) Assess, in consultation with the OH MAC, the feasibility of gathering additional information on social and/or economic aspects of the relevant fishery including: modifying the existing catch returns or fishing licence renewal application forms, undertaking targeted social and economic surveys, or any other methods

(July 2005)

A coordinated approach across all fisheries is considered the most efficient approach due to many fishers being endorsed in multiple fisheries. Further consultation with SIAC and MACs is needed to progress this and associated management actions.

**Appendix 4: Report on performance indicators in the Ocean Hauling Fishery (for the period 2003/04 to 2005/06),
based on revised performance indicators**

Performance Indicator	Trigger Point	Status	Comment
The estimated quantity of the ocean hauling catch (by method) which is discarded	The quantity of discards for any observed method increases between consecutive observer surveys	-	<p>Scientific observer survey conducted on the use of general purpose hauling nets in the OH (beach) fishery.</p> <p>Consecutive observer survey data not available.</p>
Response of the Ocean Hauling Fishery to marine pest and disease incursions	Guidelines specified in any Marine Pest and Disease Management Program are not adopted by the Ocean Hauling Fishery	✓	<p><i>Caulerpa taxifolia</i> has been declared a Class 1 noxious species in all NSW waters under the <i>Fisheries Management Act 1994</i> (the Act)</p> <p>The NSW Government has developed a comprehensive control program for <i>C. taxifolia</i>. To manage the potential spread of <i>C. taxifolia</i> via fishing gear, fishing closures, under section 8 of the Act, have been implemented in five affected estuaries banning the use of all nets (commercial and recreational) other than landing nets.</p>
Length of beach totally closed to ocean hauling fishing (through fishing closures, marine parks and/or aquatic reserves)	The total length of beach open to ocean hauling increases above the length open at the commencement of the FMS	✓	<p>Since the commencement of the OH FMS, fishing closures, established under sections 8 and 11 of the <i>Fisheries Management Act 1994</i>, relevant to the OHF have been maintained.</p>

Performance Indicator	Trigger Point	Status	Comment
Changes in the exploitation status of a target or conditional target species in OHF to 'overfished' or 'recruitment overfished'	The exploitation status of a target/ conditional target species is changed to 'overfished' or 'recruitment overfished' by NSW DPI	2003/04 ✓	In 2004/05 the exploitation status for mulloway (<i>Argyrosomus japonicus</i>), a key secondary species in the EG Fishery and a conditional target species in the OH Fishery, changed from 'undefined' to 'overfished'.
		2004/05 *	Management response 2.5(a) of the OH FMS requires the development and implementation of a recovery program when the exploitation status of a species is changed to 'overfished'. The development of a recovery program for mulloway has commenced and is in the initial stages.
		2005/06 ✓	
Total annual landings of all conditional target and byproduct species taken in each ocean hauling method as a percentage of the total annual landings for that method	Contribution of conditional target and byproduct species for any method exceeds 5% in any two consecutive years	2003/04 GP haul – ✓ PAB net – ✓ PS net – ✓ GF haul – *	In 2003/04 approximately 14% of the total annual landings for the method garfish net (hauling) comprised conditional target and byproduct species. Approximately 13% was fantail mullet (<i>Mugil georgii</i>), a byproduct species in the OH fishery.
		2004/05 GP haul – ✓ PAB net – ✓ PS net – ✓ GF haul – ✓	In 2005/06 approximately 5.9% of the total annual landings for the method garfish net (hauling) comprised conditional target and byproduct species. Approximately 7.2% of the total annual landings for the pilchard, anchovy bait net comprised conditional target and byproduct species.
		2005/06 GP haul – ✓ PAB net – * PS net – ✓ GF haul – *	

Performance Indicator	Trigger Point	Status	Comment
Interactions between the fishery and threatened species, populations or ecological communities that are likely to threaten the survival of a threatened species, population or ecological community	Any interactions between the fishery and a threatened species, population or ecological community reported by endorsement holders in the fishery or observed during an observer survey that are likely to threaten the survival of that threatened species, population or ecological community, as determined by the Director-General of NSW DPI on advice from relevant threatened species experts	✓	A scientific observer survey on the use of general purpose hauling nets in ocean waters (OH Fishery) along the NSW coast from April to July 2005 reported no interactions with threatened or protected species. Observer data for the other OHF methods is not available.
Interactions between the fishery and protected species that are likely to threaten the survival of a protected species	A biennial review undertaken by NSW DPI of interactions between the fishery and a protected species reported by endorsement holders in the fishery or observed during an observer survey is likely to threaten the survival of that protected species as determined by the Director-General of NSW DPI on advice from relevant threatened species experts	✓	A scientific observer survey on the use of general purpose hauling nets in ocean waters (OH Fishery) along the NSW coast from April to July 2005 reported no interactions with threatened or protected species. Observer data for the other OHF methods is not available.
Change in the distribution of landings between the commercial sector and non-commercial sectors (combining recreational and Indigenous) for each primary species in the OHF	Maximum absolute difference in the distribution of landings between the commercial and non-commercial sectors is greater than 15 percentage points when compared every five years	–	The first assessment year for this indicator will be 2007 and will compare relative catch between sectors in 2005/06 to relative catch in 2000/01.
Change in the distribution of landings among <i>NSW commercial fisheries</i> for each target species in the OHF	Maximum absolute difference in the distribution of landings between the assessment and reference years is greater than 15 percentage points	–	The first assessment year for this indicator will be 2007 and will compare relative landings from 2004/05 and 2005/06 to the reference years 1999/00 and 2000/01.
Change in the distribution of landings among <i>ocean hauling regions</i> for each target species	Maximum absolute difference in the distribution of landings between the assessment and reference years is greater than 50 percentage points	–	The first assessment year for this indicator will be 2007 and will compare relative landings from 2004/05 and 2005/06 to the reference years 1999/00 and 2000/01.

Performance Indicator	Trigger Point	Status	Comment
Net economic returns to the OHF	The Director-General is satisfied that the gross value of production of the fishery has not exceeded the sum of indicative industry operational costs and government management costs relevant to the fishery for three consecutive years	–	Not applicable to this year's assessment. A process of determining indicative operational costs is to be developed in consultation with the Seafood Industry Advisory Council and the relevant MACs.
Average market of OH shares when traded	Trigger to be determined within two years of the commencement of the share management plan	–	Not applicable to this year's assessment. Share management plans for the OHF commenced on the 5 February 2007.
Annual rates of compliance for the OHF	85% compliance	2003/04 ✓	2003/04 98% compliance
		2004/05 ✓	2004/05 96% compliance
		2005/06 ✓	2005/06 96% compliance
Number of Ocean Hauling MAC meetings held each year	Less than two meetings for each fishery held in a calendar year, unless otherwise agreed by the MAC	2004 ✓	2004 30 July 2004, 15 and 16 November 2004 (MAC Workshop)
		2005 ✓	2005 11 February 2005 and 12 August 2005
		2006 ✓	2006 9 August 2006 and 26 September 2006 (joint SIAC / MAC meeting)

Performance Indicator	Trigger Point	Status	Comment	
Public availability of information regarding the OHF	Less than two pieces of informative material relating to the OHF are published every three years	✓	Examples of publicly available informative material include the Fisheries Management Strategies Performance Report 2004, and information provided on the NSW DPI website.	
Number of target and conditional target species in the OHF with an 'uncertain' or 'undefined' exploitation status	The number target/ conditional target species with an 'uncertain' or 'undefined' exploitation status has not decreased between two consecutive odd-numbered years	✓	Number of target and conditional target species harvested in the OHF with an exploitation status "uncertain" or "undefined"	
			Year	Uncertain / Undefined
			2003/04	19
			2004/05	15
The difference between the current and target resource assessment class for target and conditional target species of the OHF	The sum of the difference between the current and target assessment class for target/ conditional target species has not decreased between two consecutive odd-numbered years	✓	The sum of the difference between the current and target assessment class:	
			2003/04	36
			2004/05	24
			2005/06	20
The number of research projects underway which have a flow of benefits to the fishery and fill information gaps identified by the environmental impact assessment for the fishery	The number of relevant research projects relevant to identified information gaps falls to less than two during any one year	2003/04	Refer to Appendix 5 of this submission for further details of research projects relevant to the OHF.	
		✓		
		2004/05		
		✓		
Accuracy of catch return data (in terms of quantity of product, record completeness and species identification)	The accuracy of catch return data has not improved when reviewed every two years	2005/06	Baseline data has been collected from a sample of fishers to be compared with fresh data in 2005/06.	
		✓		
		✓		

Appendix 5: Relevant Scientific Outputs for the Ocean Hauling Fishery

Henry, G.W. and Lyle, J.M., 2003. *The National Recreational and Indigenous Fishing Survey. Final Report to the Fisheries Research & Development Corporation and the Fisheries Action Program. Project No. 1999/158. NSW Fisheries Final Report Series No. 48. ISSN 1440-3544. 188pp.*

Hughes, J. M. and Stewart, J., 2006. Reproductive biology of three commercially important Hemiramphid species in south-eastern Australia. *Environmental Biology of Fishes*, 75(2): 237-256.

Kendall, B., Gray, C. and Bucher, D., 2006. Reproductive biology of flat-tail mullet and sand mullet. Oral presentation given at the 2006 Australian Society for Fish Biology Conference, 28 August - 1 September 2006, Hobart, Australia.

NSW Department of Primary Industries, 2006. *Determining the biological sustainability of wild fisheries in NSW: Concepts and definitions. An information paper by the Systems Research, Wild Fisheries Program. 27pp.*

Scandol, J., 2006. The role of ecosystem simulation in ecosystem based fisheries management. Pages 23 - 25 in Forrest, R.E., Scandol, J.P. and Pitcher, T.J. (eds) *'Towards ecosystem-based fishery management in New South Wales: Proceedings of the experts and data workshop, December 8 - 10, 2003, Cronulla, Australia'*. University of British Columbia Fisheries Centre Research Report 14(5), 124pp.

Stewart, J., Hughes, J. M., Gray, C. A. and Walsh, C. 2005. Life-history, reproductive biology, habitat use and fishery status of eastern sea garfish (*Hyporhamphus australis*) and river garfish (*H. regularis ardelio*) in NSW waters. FRDC Project No. 2001/027, NSW Department of Primary Industries, Fisheries Final Report Series No. 73, Cronulla, Australia. ISSN 1449-9967.

Stewart, J., and Hughes, J. M. 2005. Longevity, growth, reproduction and a description of the fishery for silver sweep *Scorpius lineolatus* off New South Wales, Australia. *New Zealand Journal of Marine and Freshwater Research*, 39: 827-838.

Stewart, J., Walsh, C., Reynolds, D., Kendall, B. & Gray, C. 2004. Determining an optimal mesh size for use in the lampara net fishery for eastern sea garfish *Hyporhamphus australis*. *Fisheries Management and Ecology*, 11: 403-410.

Stewart, J., 2006. Garfish (Hemiramphidae) in NSW, Australia: Aspects of their distributions, fisheries, life-histories and ecology. Pages 87 - 88 in Forrest, R.E., Scandol, J.P. and Pitcher, T.J. (eds) *'Towards ecosystem-based fishery management in New South Wales: Proceedings of the experts and data workshop, December 8 - 10, 2003, Cronulla, Australia'*. University of British Columbia Fisheries Centre Research Report 14(5), 124pp.

Stewart, J. and Hughes, J. M. 2007. Age validation and growth of three commercially important Hemiramphids in south-eastern Australia. *Journal of Fish Biology*, 70: 65-82.

Stewart, J. 2007. Observer study in the Estuary General sea garfish haul net fishery in NSW. NSW Department of Primary Industries, Fisheries Final Report Series No. 87, Cronulla, Australia. ISSN 1449-9967.

Ward, M., D.W. Schmarr, L.J. McLeay, P.J. Rogers and A. Ivey (submitted). Preliminary investigation of the spawning biomass of sardine (*Sardinops sagax*) off eastern Australia. Report to New South Wales Department of Primary Industries. Appendix 10.1. Development and evaluation of egg-based stock assessment methods for blue mackerel, *Scomber australasicus*, in southern Australia. T. Ward, Fisheries Research & Development Corporation. Project 2002/061.

Appendix 6: Catch Data Information for Ocean Hauling Target and Conditional Target Species

(Source: NSW DPI Resource Assessment System)

Australian Anchovy (*Engraulis australis*)

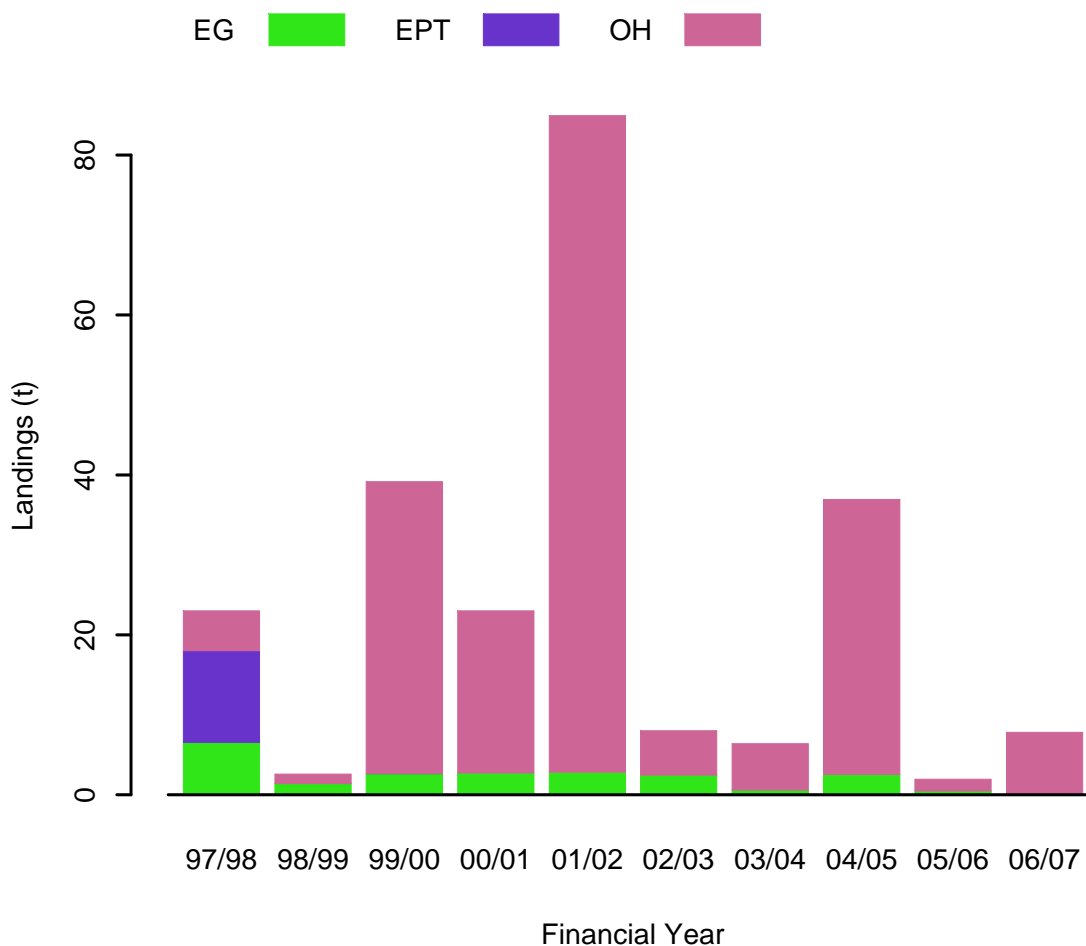


Figure 1: Landings of Australian anchovy from NSW commercial fisheries from 1997/98.

*Fisheries which contribute less than 2.5% of the landings are excluded for clarity and privacy.

Table 1: Landings (in tonnes) of Australian anchovy from NSW commercial fisheries since 1997/98.

Year	Ocean Hauling	Estuary General	Estuary Prawn Trawl
1997/98	5	6.5564	11.45
1998/99	1.173	1.41	0
1999/00	36.5025	2.6481	0.009
2000/01	20.272	2.7315	0
2001/02	82.105	2.8187	0
2002/03	5.543	2.474	0
2003/04	5.793	0.603	0
2004/05	34.391	2.539	0
2005/06	1.511	0.451	0
2006/07	7.816	0	0

*Fisheries which contribute less than 1% of the landings are excluded for clarity.

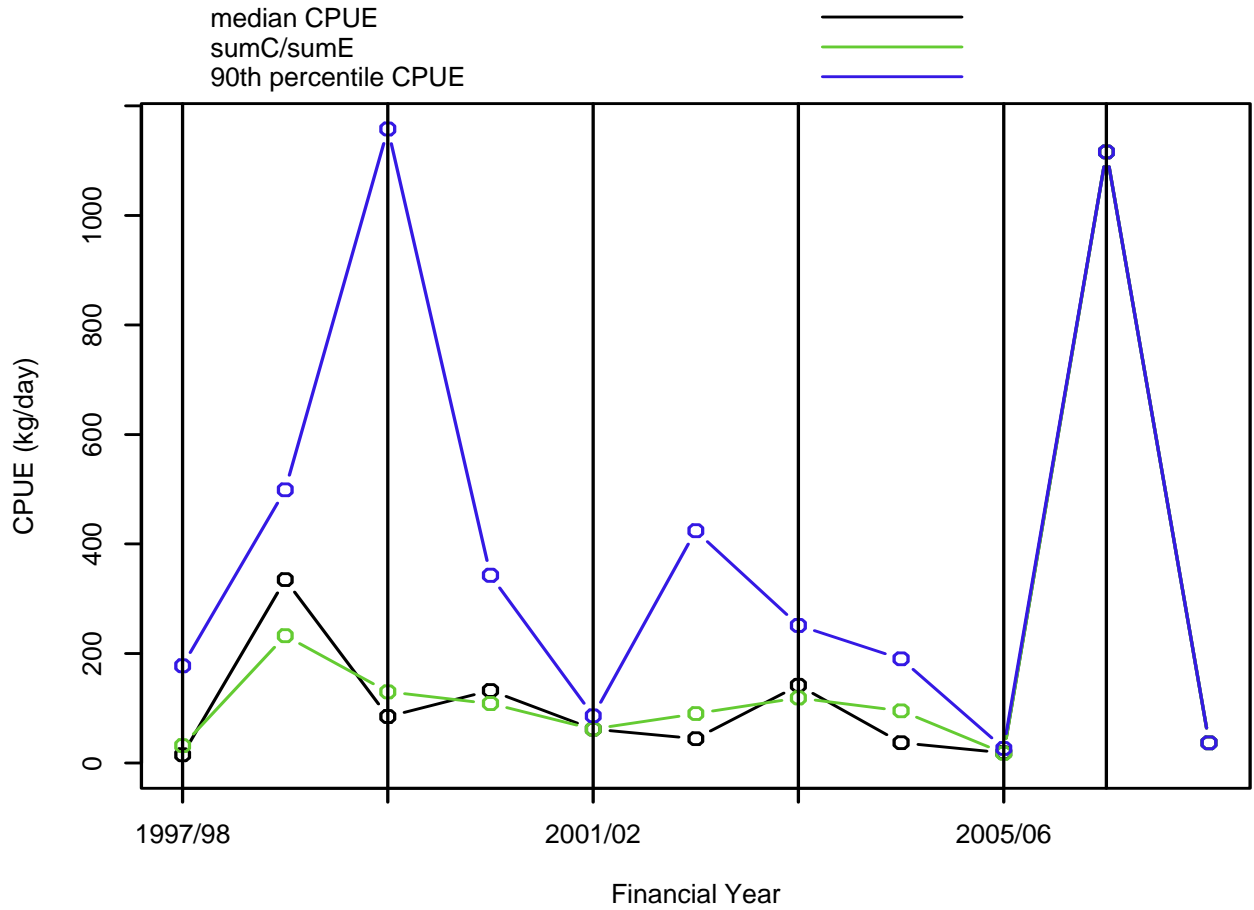


Figure 2: Commercial catch rates of Australian anchovy harvested using bait netting for NSW. Two indicators are provided: (1) median catch rate (lower solid line); and (2) 90th percentile of the catch rate (upper dashed line).

*Records with a zero catch rate (i.e. no catch recorded) are not included in these analyses.

Recreational Fishery

No recreational catch estimate available.

Australian Bonito (*Sarda australis*)

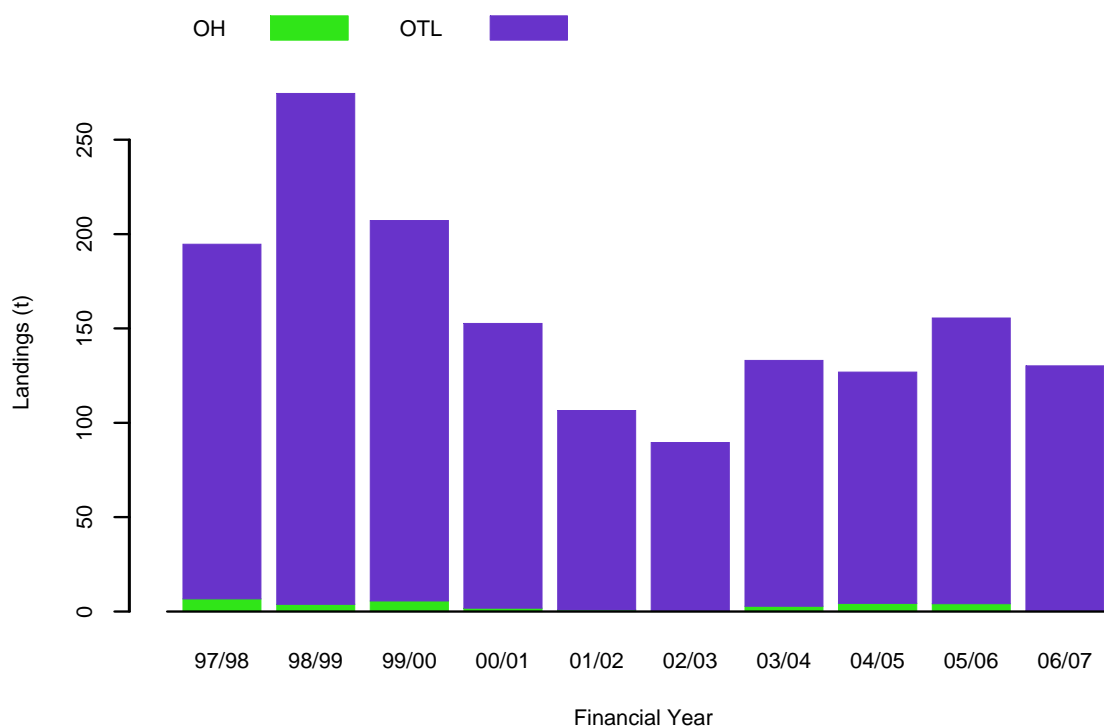


Figure 3: Landings of Australian bonito from NSW commercial fisheries from 1997/98. *Fisheries which contribute less than 2.5% of the landings are excluded for clarity and privacy.

Table 2: Landings (in tonnes) of Australian bonito from NSW commercial fisheries since 1997/98.

Year	Ocean Hauling	Ocean Trap and Line
1997/98	6.7236	187.8664
1998/99	3.8035	270.6499
1999/00	5.5865	201.5709
2000/01	1.82	150.8096
2001/02	0.8235	105.6311
2002/03	0.402	89.14135
2003/04	2.8277	130.23075
2004/05	4.33	122.6107
2005/06	4.158	151.4226
2006/07	0.4424	129.7377

*Fisheries which contribute less than 1% of the landings are excluded for clarity.

Recreational Fishery (Source: The National Recreational and Indigenous Fishing Survey²⁰)

Table 3: Estimated number of Tuna/bonitos that were kept by recreational fishers for each major type of water-body in NSW (April 2000 to March 2001).

Waterbody	Estimated Total (000's)
Offshore	38
Inshore	98.4
Estuarine	4.4

²⁰ Henry, G.W. and Lyle, J.M. (2003). The national recreational and indigenous fishing survey. Final report to the Fisheries Research and Development Corporation, Project 99/158. NSW Fisheries Final Report Series No. 40, 188pp.

Australian salmon (*Arripis trutta*)

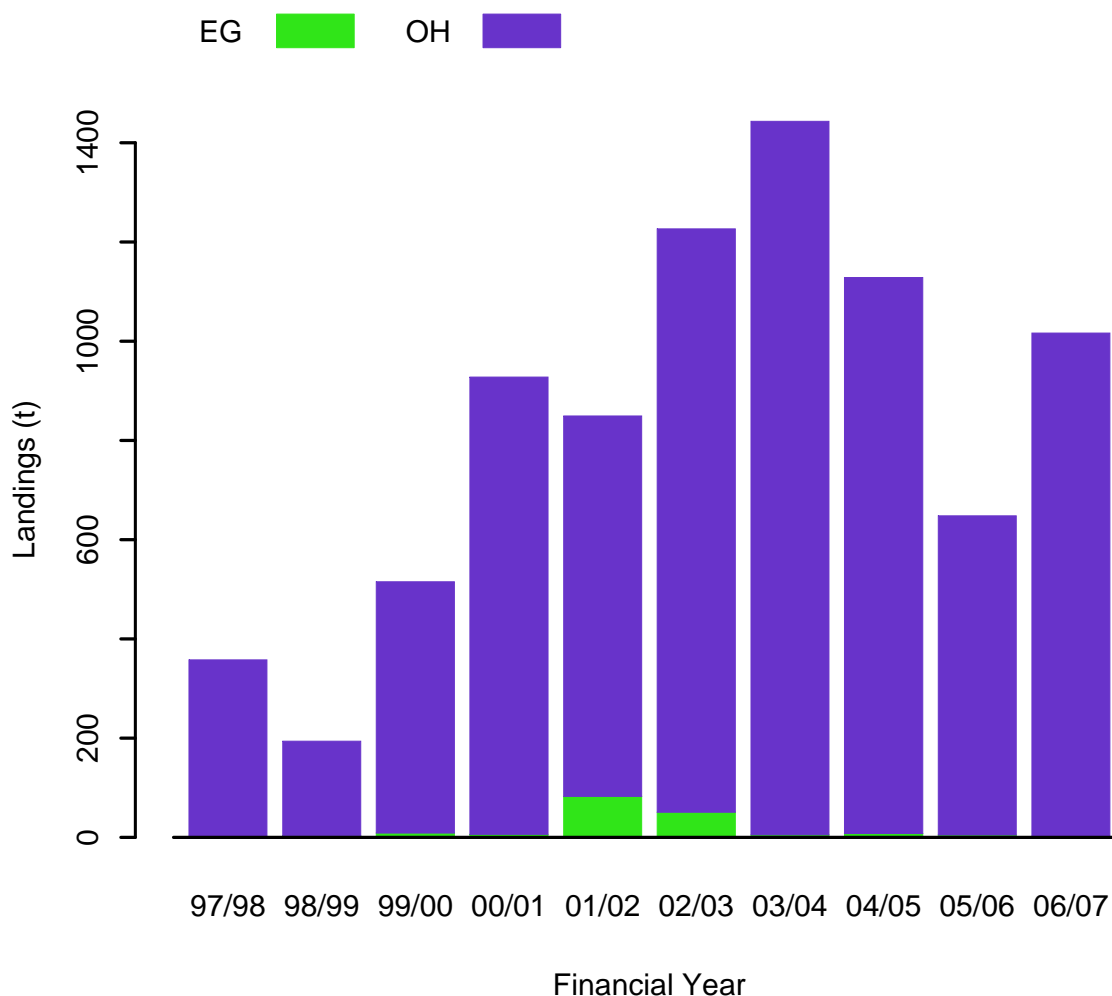


Figure 4: Landings of Australian salmon from NSW commercial fisheries from 1997/98.
*Fisheries which contribute less than 2.5% of the landings are excluded for clarity and privacy.

Table 4: Landings (in tonnes) of Australian salmon from NSW commercial fisheries since 1997/98.

Year	Estuary General	Ocean Hauling
1997/98	2.333	355.5549
1998/99	3.6443	190.428
1999/00	8.6352	506.8112
2000/01	6.027	922.0167
2001/02	82.444	766.9388
2002/03	50.6774	1175.9944
2003/04	5.3192	1437.8566
2004/05	7.8795	1120.4762
2005/06	4.6229	643.4529
2006/07	2.6654	1013.8324

*Fisheries which contribute less than 1% of the landings are excluded for clarity.

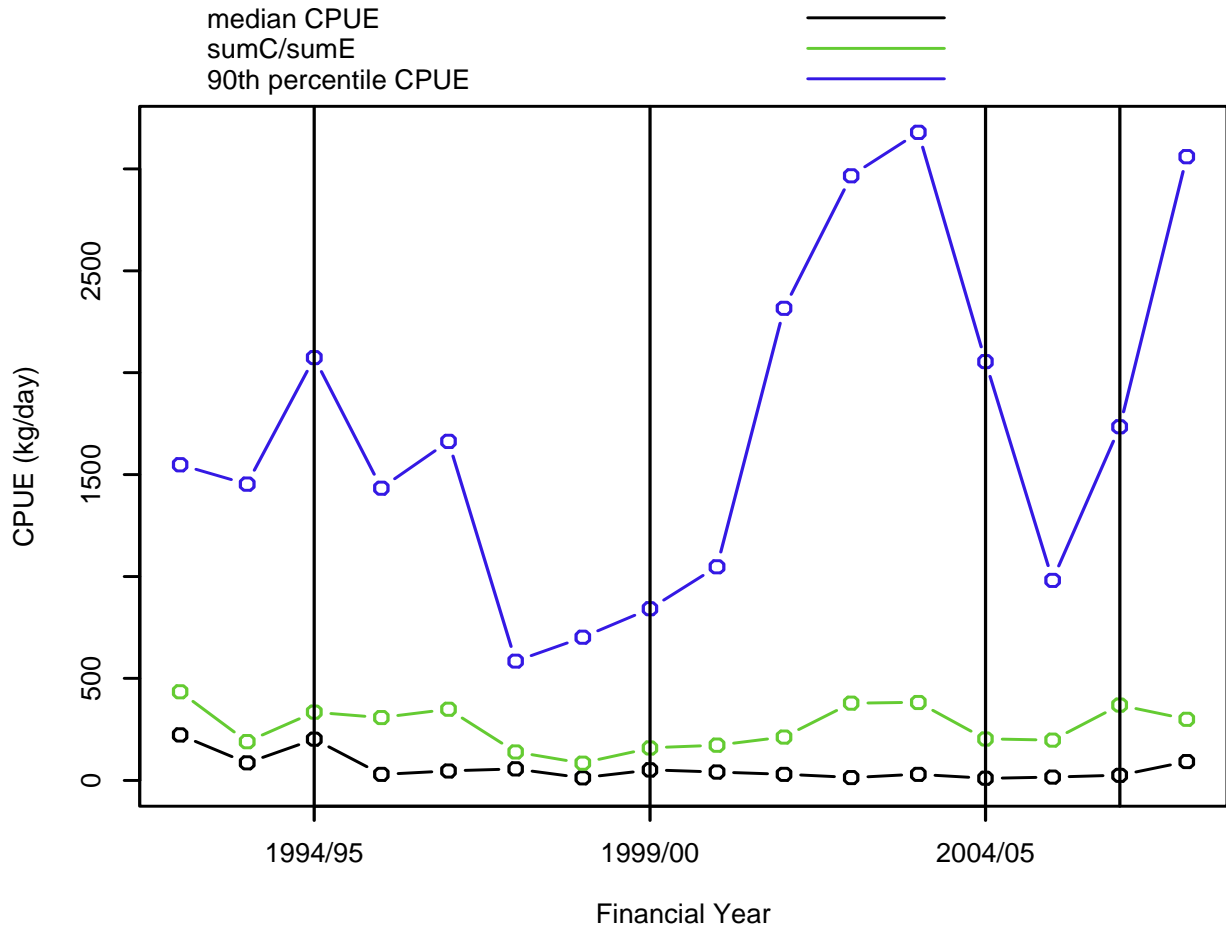


Figure 5: Commercial catch rates of Australian salmon harvested using beach hauling for NSW. Two indicators are provided: (1) median catch rate (lower solid line); and (2) 90th percentile of the catch rate (upper dashed line).

*Records with a zero catch rate (i.e. no catch recorded) are not included in these analyses.

Recreational Fishery (Source: The National Recreational and Indigenous Fishing Survey¹⁴)

Table 5: Estimated number and weight of Australian salmon that were kept by recreational fishers for each major type of water-body in NSW (April 2000 to March 2001).

Waterbody	Estimated Total (000's)	Estimated Weight (tonnes)
Inshore	99.6	199.3
Estuarine	11.4	22.7

*Catch weights are calculated assuming an average weight of 2 kg/fish

Blue Mackerel (*Scomber australasicus*)

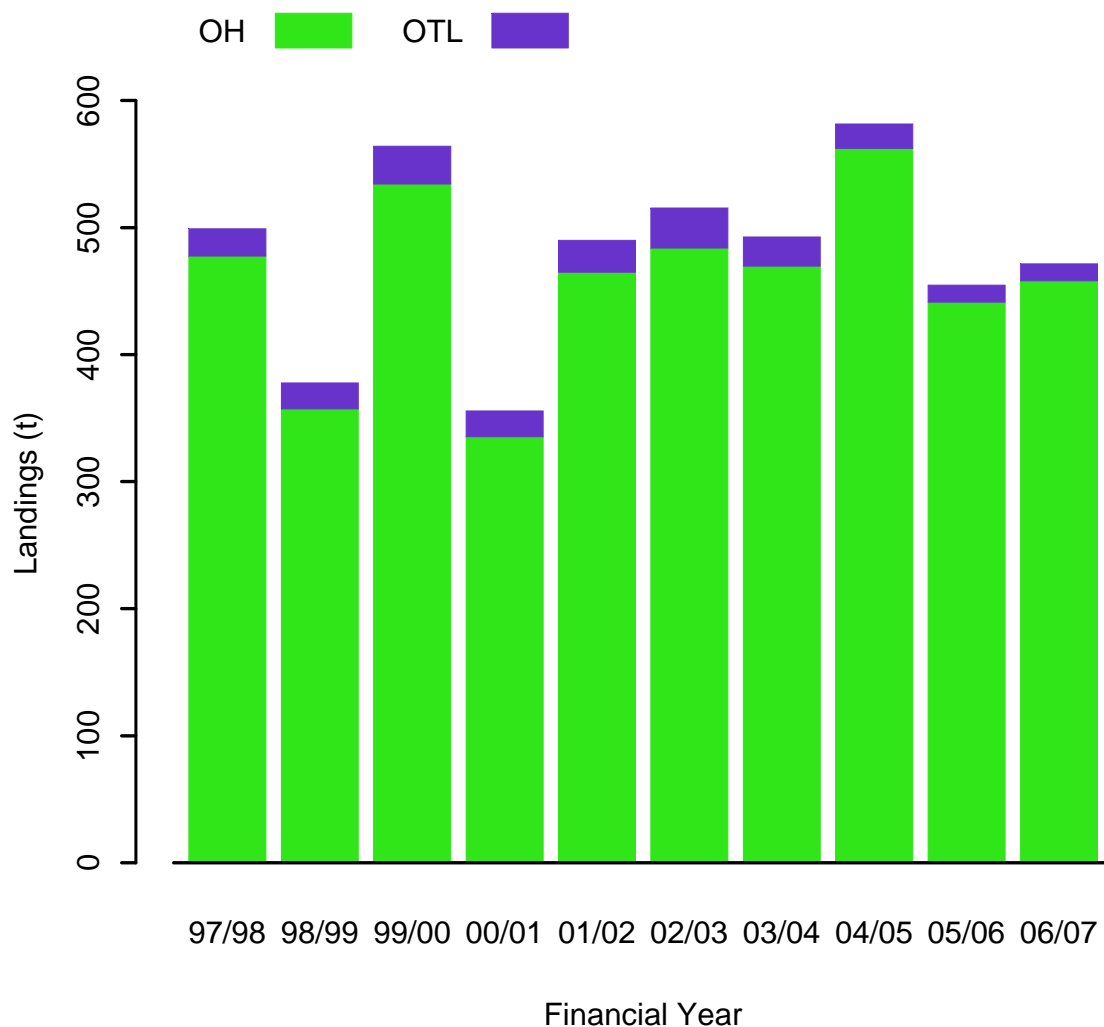


Figure 6: Landings of blue mackerel from NSW commercial fisheries from 1997/98.
*Fisheries which contribute less than 2.5% of the landings are excluded for clarity and privacy.

Table 6: Landings (in tonnes) of blue mackerel from NSW commercial fisheries since 1997/98.

Year	Ocean Hauling	Ocean Trap and Line
1997/98	477.5849	21.454
1998/99	357.2679	20.309
1999/00	534.3276	29.679
2000/01	335.327	20.3539
2001/02	464.952	25.032
2002/03	483.9594	31.4533
2003/04	469.7165	22.88939
2004/05	562.4678	19.0293
2005/06	441.377	13.327
2006/07	458.1252	13.3107

*Fisheries which contribute less than 1% of the landings are excluded for clarity.

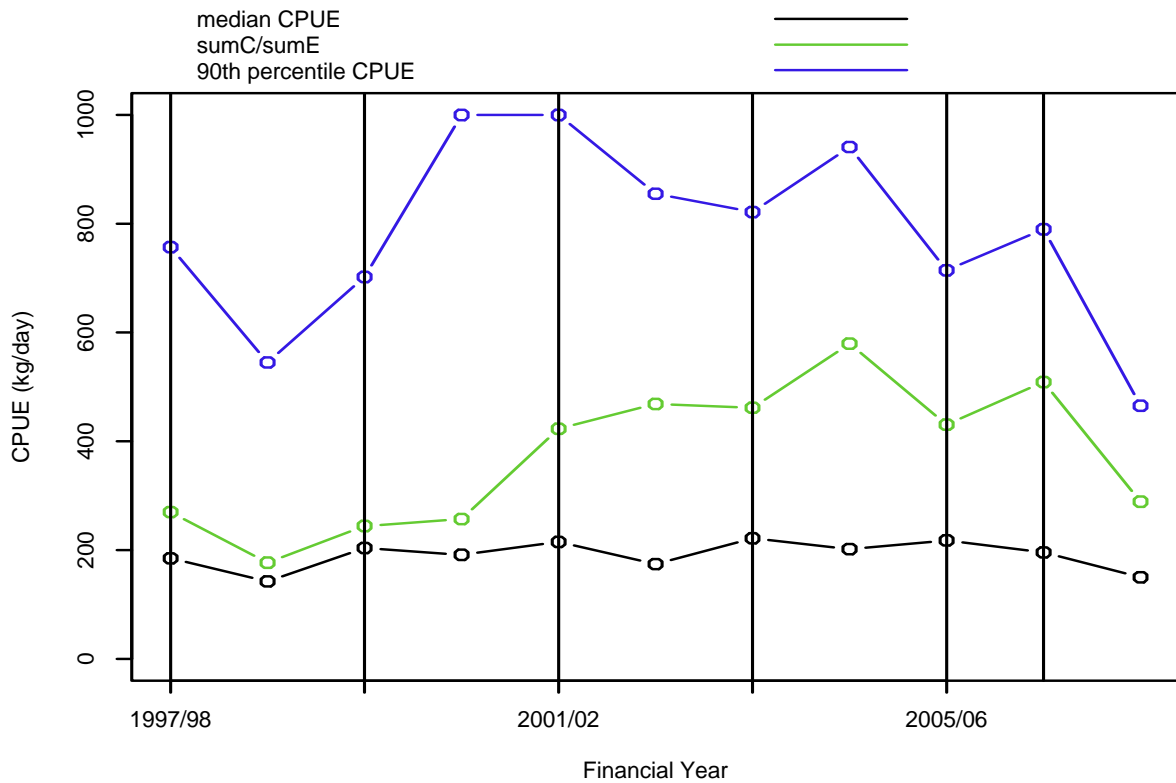


Figure 7: Commercial catch rates of blue mackerel harvested using purse seining for NSW. Two indicators are provided: (1) median catch rate (lower solid line); and (2) 90th percentile of the catch rate (upper dashed line).

*Records with a zero catch rate (i.e. no catch recorded) are not included in these analyses.

Recreational Fishery (Source: The National Recreational and Indigenous Fishing Survey¹⁴)

Table 7: Estimated number of blue mackerel that were kept by recreational fishers for each major type of water-body in NSW (April 2000 to March 2001).

Waterbody	Estimated Total (000's)
Offshore	20.6
Inshore	359.1
Estuarine	47.3

Jack Mackerel (*Trachurus declivis*)

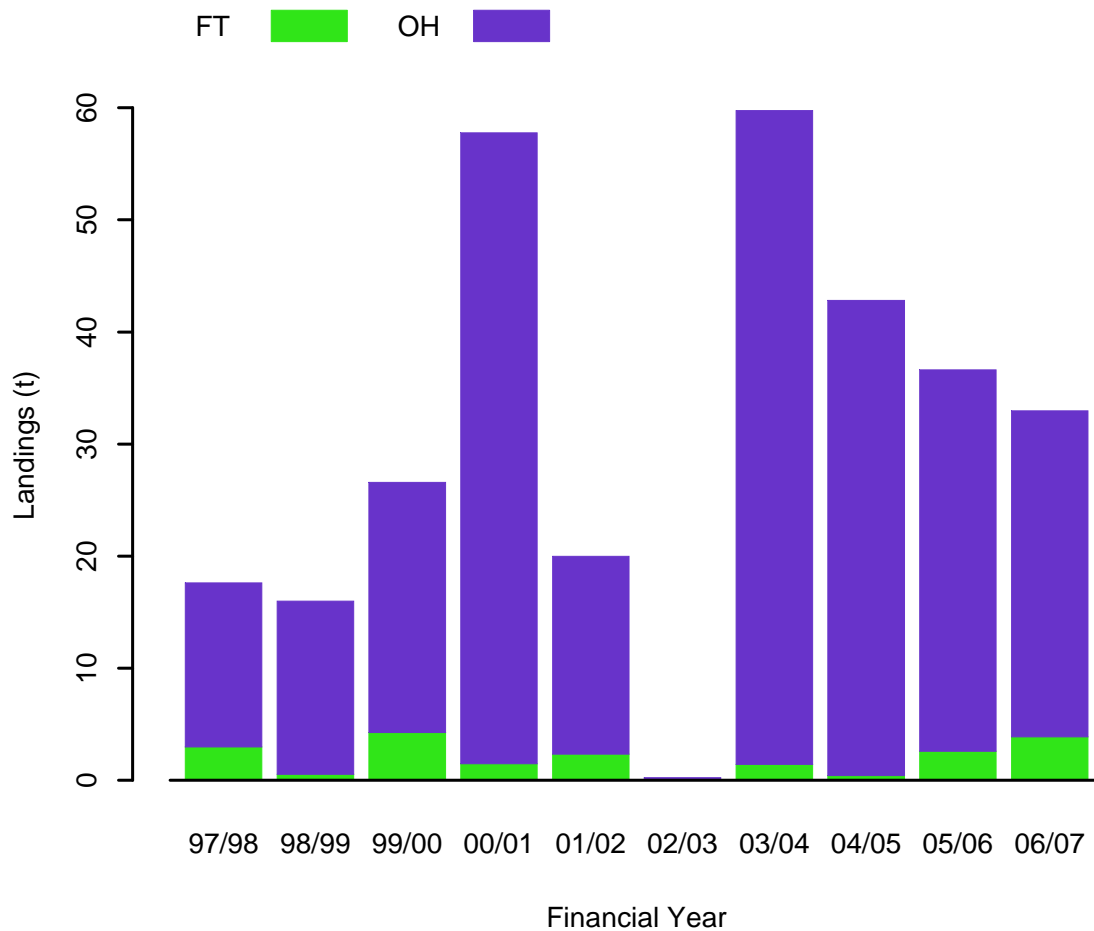


Figure 8: Landings of common jack mackerel from NSW commercial fisheries from 1997/98.
*Fisheries which contribute less than 2.5% of the landings are excluded for clarity and privacy.

Table 8: Landings (in tonnes) of common jack mackerel from NSW commercial fisheries since 1997/98.

Year	Fish Trawl	Ocean Hauling
1997/98	2.962	14.644
1998/99	0.5305	15.445
1999/00	4.2425	22.3425
2000/01	1.4585	56.3115
2001/02	2.324	17.657
2002/03	0.071	0.165
2003/04	1.401	58.344
2004/05	0.424	42.391
2005/06	2.5804	34.027
2006/07	3.8752	29.086

*Fisheries which contribute less than 1% of the landings are excluded for clarity.

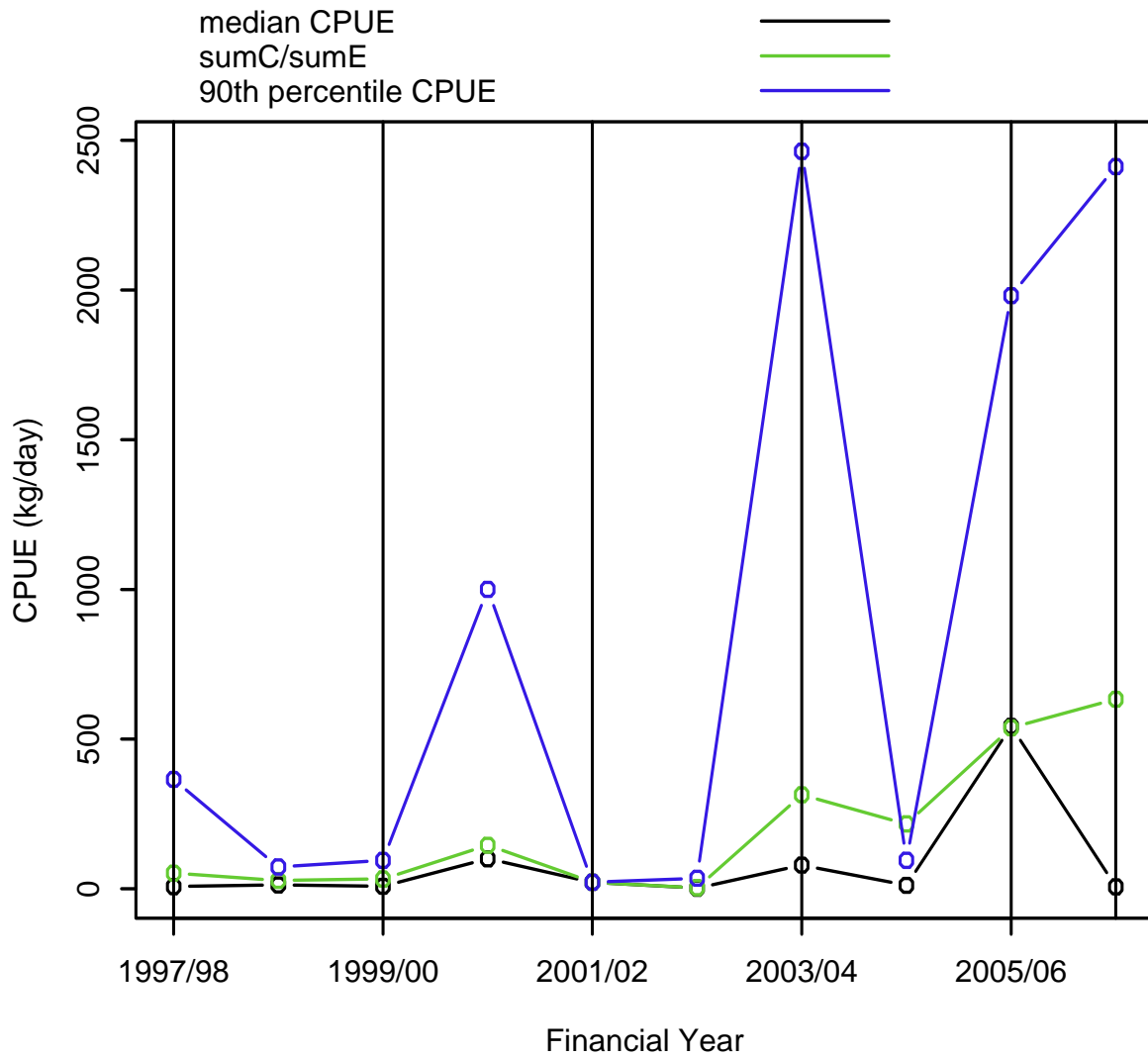


Figure 9: Commercial catch rates of common jack mackerel harvested using purse seining for NSW. Two indicators are provided: (1) median catch rate (lower solid line); and (2) 90th percentile of the catch rate (upper dashed line).

*Records with a zero catch rate (i.e. no catch recorded) are not included in these analyses.

Recreational Fishery

No recreational catch estimate available.

Dart (*Trachinotus* spp.)

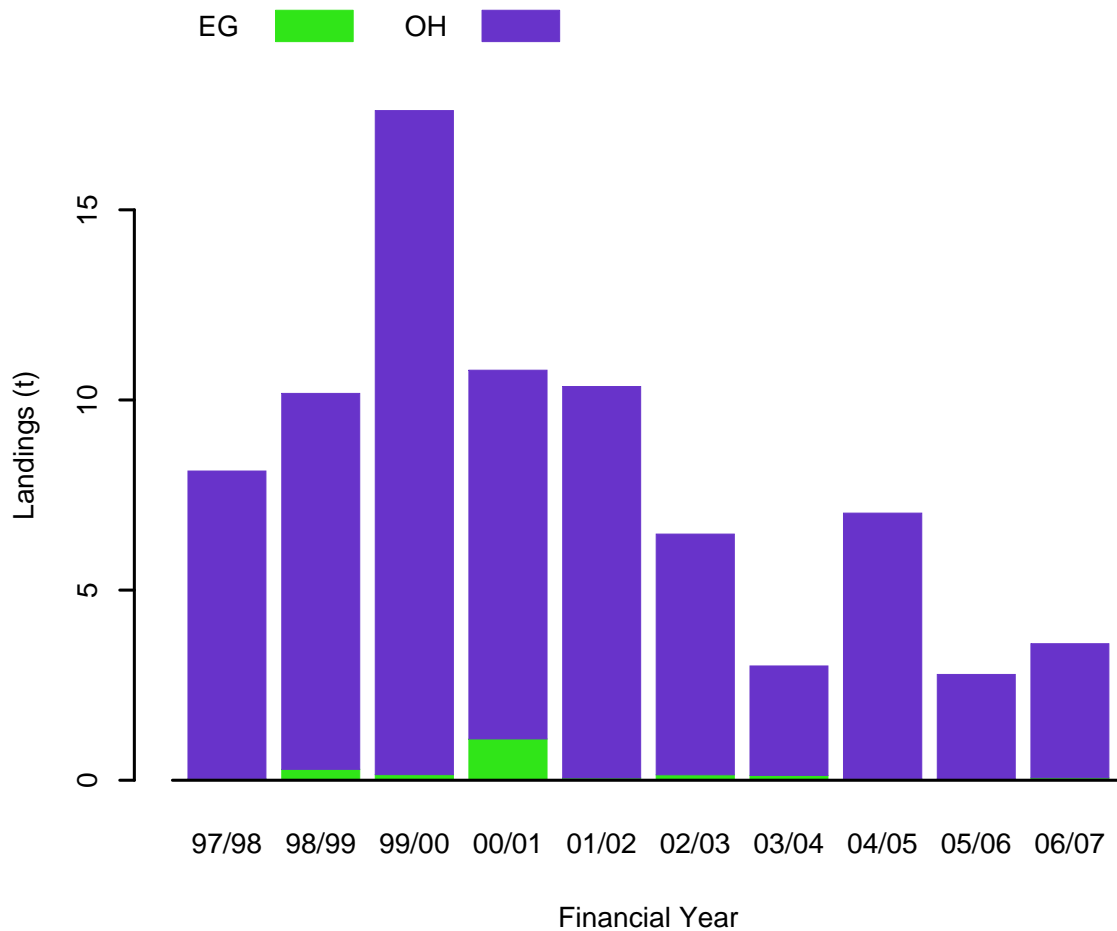


Figure 10: Landings of dart from NSW commercial fisheries from 1997/98.
*Fisheries which contribute less than 2.5% of the landings are excluded for clarity and privacy.

Table 9: Landings (in tonnes) of dart from NSW commercial fisheries since 1997/98.

Year	Estuary General	Ocean Hauling
1997/98	0.0369	8.0951
1998/99	0.2877	9.8824
1999/00	0.149	17.4572
2000/01	1.0854	9.7007
2001/02	0.0596	10.2939
2002/03	0.1452	6.3279
2003/04	0.1278	2.8774
2004/05	0.0352	6.9854
2005/06	0.0341	2.7494
2006/07	0.064	3.527

*Fisheries which contribute less than 1% of the landings are excluded for clarity.

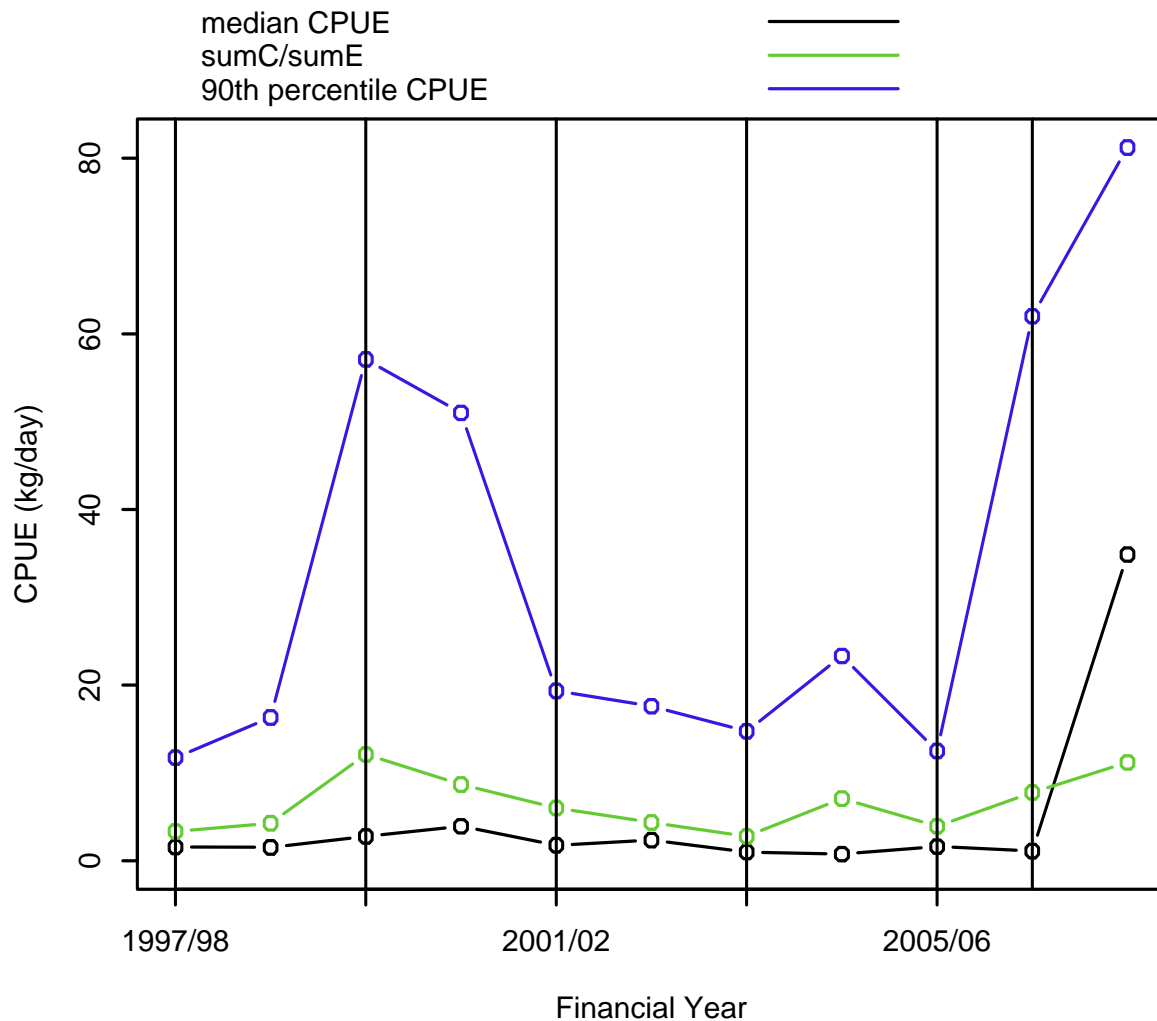


Figure 11: Commercial catch rates of dart harvested using beach hauling for NSW. Two indicators are provided: (1) median catch rate (lower solid line); and (2) 90th percentile of the catch rate (upper dashed line).

*Records with a zero catch rate (i.e. no catch recorded) are not included in these analyses.

Recreational Fishery (Source: The National Recreational and Indigenous Fishing Survey¹⁴)

Table 10: Estimated number of dart that were kept by recreational fishers for each major type of water-body in NSW (April 2000 to March 2001).

Waterbody	Estimated Total (000's)
Inshore	110.6
Estuarine	4.7

Eastern Sea Garfish (*Hyporhamphus australis*)

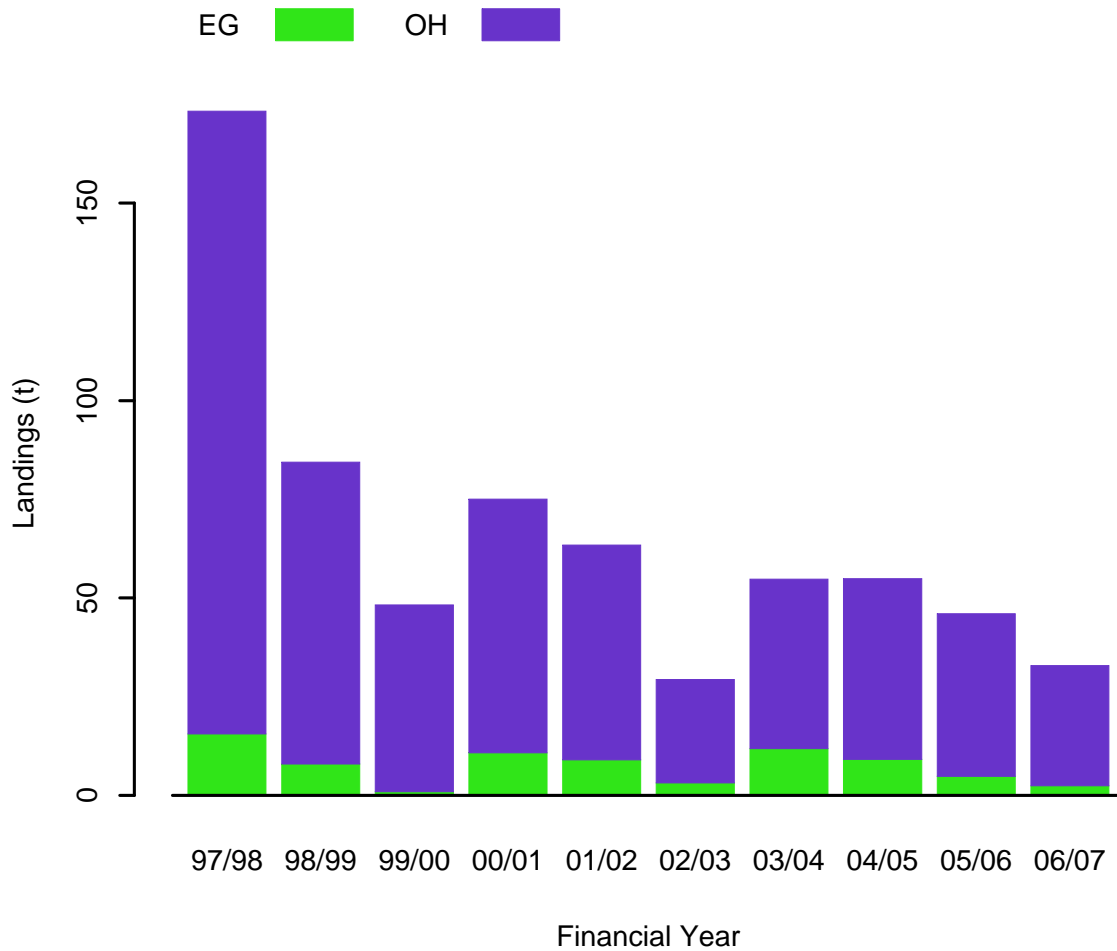


Figure 12: Landings of eastern sea garfish from NSW commercial fisheries from 1997/98.
*Fisheries which contribute less than 2.5% of the landings are excluded for clarity and privacy.

Table 11: Landings (in tonnes) of eastern sea garfish from NSW commercial fisheries since 1997/98.

Year	Estuary General	Ocean Hauling
1997/98	15.5822	157.6713
1998/99	7.9493	76.4793
1999/00	0.9327	47.2775
2000/01	10.8121	64.2104
2001/02	8.991	54.418
2002/03	3.1948	26.1886
2003/04	11.8621	42.9333
2004/05	9.1021	45.7972
2005/06	4.8427	41.1689
2006/07	2.4749	30.3801

*Fisheries which contribute less than 1% of the landings are excluded for clarity.

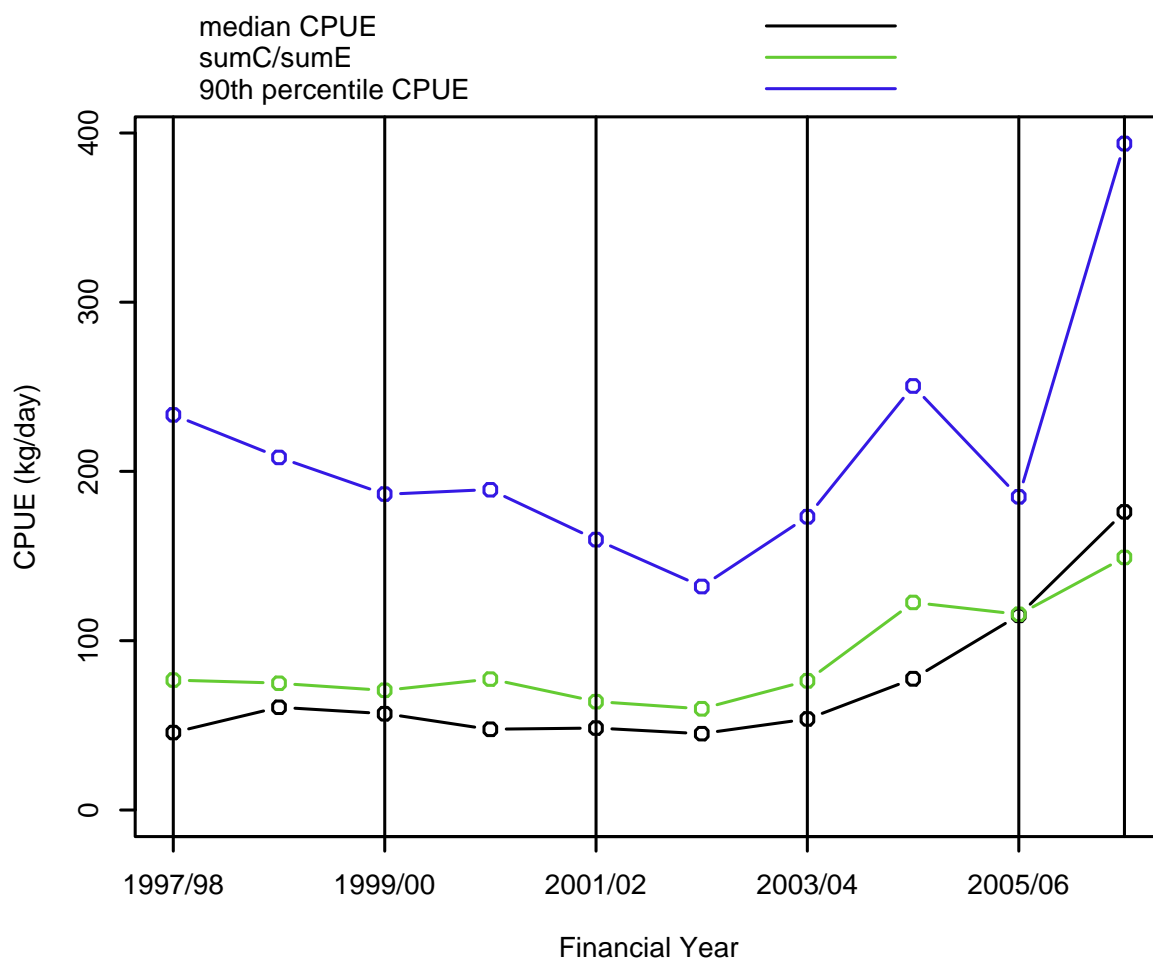


Figure 13: Commercial catch rates of eastern sea garfish harvested using garfish net (hauling) for NSW. Two indicators are provided: (1) median catch rate (lower solid line); and (2) 90th percentile of the catch rate (upper dashed line).

*Records with a zero catch rate (i.e. no catch recorded) are not included in these analyses.

Recreational Fishery (Source: The National Recreational and Indigenous Fishing Survey¹⁴)

Table 12: Estimated number and weight of Garfish that were kept by recreational fishers for each major type of water-body in NSW (April 2000 to March 2001).

Waterbody	Estimated Total (000's)	Estimated Weight (tonnes)
Inshore	45.1	3.4
Estuarine	257.2	19.3

*Catch weights are calculated assuming an average weight of 0.075 kg/fish

Luderick (*Girella tricuspidata*)

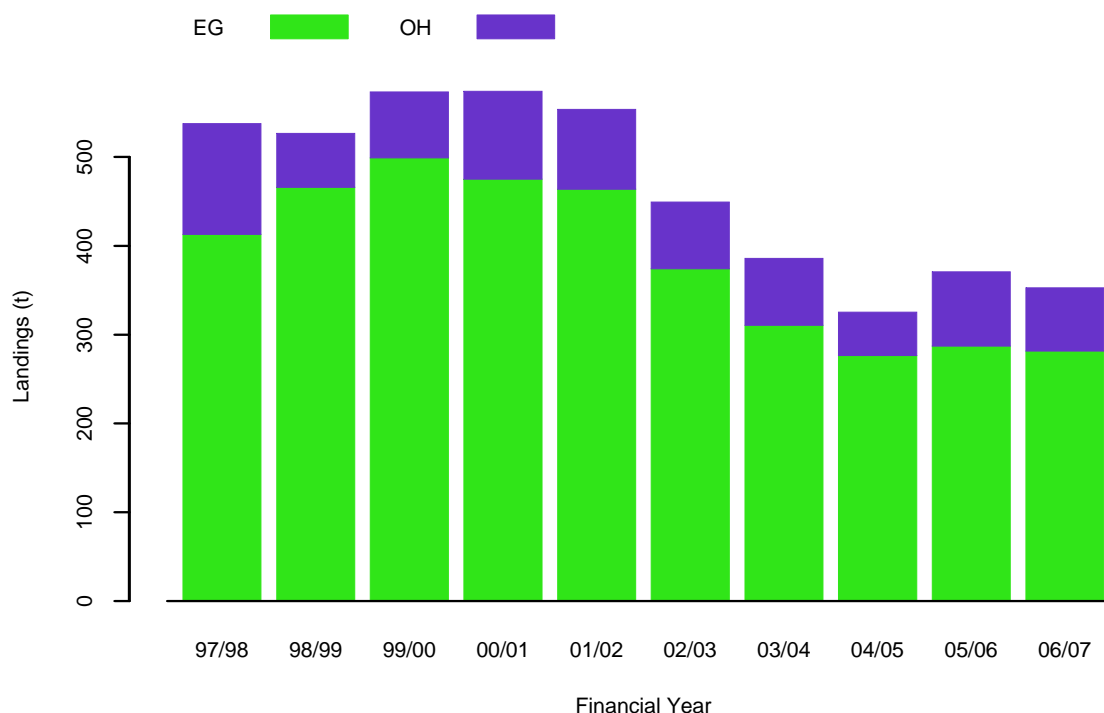


Figure 14: Landings of luderick from NSW commercial fisheries from 1997/98.
*Fisheries which contribute less than 2.5% of the landings are excluded for clarity and privacy.

Table 13: Landings (in tonnes) of luderick from NSW commercial fisheries since 1997/98.

Year	Estuary General	Ocean Hauling
1997/98	412.7787	124.7336
1998/99	465.88305	60.7341
1999/00	499.07225	74.1886
2000/01	474.9539	98.9998
2001/02	463.8149	89.9225
2002/03	374.1752	75.1496
2003/04	310.4763	75.3912
2004/05	276.55723	48.7062
2005/06	287.09105	83.6155
2006/07	281.474	71.234

*Fisheries which contribute less than 1% of the landings are excluded for clarity.

Recreational Fishery (Source: The National Recreational and Indigenous Fishing Survey¹⁴)

Table 14: Estimated number and weight of Luderick that were kept by recreational fishers for each major type of water-body in NSW (April 2000 to March 2001).

Waterbody	Estimated Total (000's)	Estimated Weight (tonnes)
Inshore	269.5	121.3
Estuarine	353	158.9

*Catch weights are calculated assuming an average weight of 0.45 kg/fish

Sand Whiting (*Sillago ciliata*)

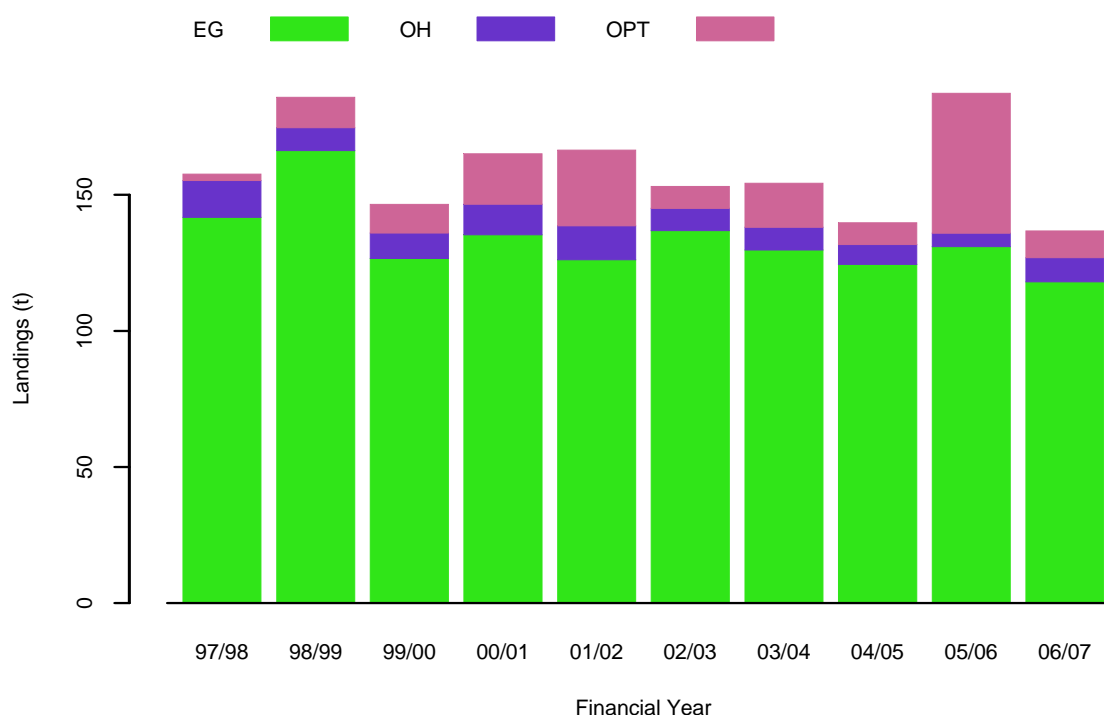


Figure 15: Landings of sand whiting from NSW commercial fisheries from 1997/98.
*Fisheries which contribute less than 2.5% of the landings are excluded for clarity and privacy.

Table 15: Landings (in tonnes) of sand whiting from NSW commercial fisheries since 1997/98.

Year	Estuary General	Ocean Hauling	Ocean Prawn Trawl
1997/98	141.7734	13.4667	2.3639
1998/99	166.2202	8.4348	11.2006
1999/00	126.6413	9.3491	10.4954
2000/01	135.3439	11.2455	18.5085
2001/02	126.166	12.477	27.8409
2002/03	136.8716	8.1509	8.0753
2003/04	129.7153	8.3292	16.2242
2004/05	124.46572	7.2647	7.9711
2005/06	130.9957	4.8981	51.3948
2006/07	117.9838	8.8903	9.8096

*Fisheries which contribute less than 1% of the landings are excluded for clarity.

Recreational Fishery (Source: The National Recreational and Indigenous Fishing Survey¹⁴)

Table 16: Estimated number and weight of Whiting that were kept by recreational fishers for each major type of water-body in NSW (April 2000 to March 2001).

Waterbody	Estimated Total (000's)	Estimated Weight (tonnes)
Offshore	0	0
Inshore	326.8	71.9
Estuarine	1464.4	322.2

*Catch weights are calculated assuming an average weight of 0.22 kg/fish

Sea Mullet (*Mugil cephalus*)

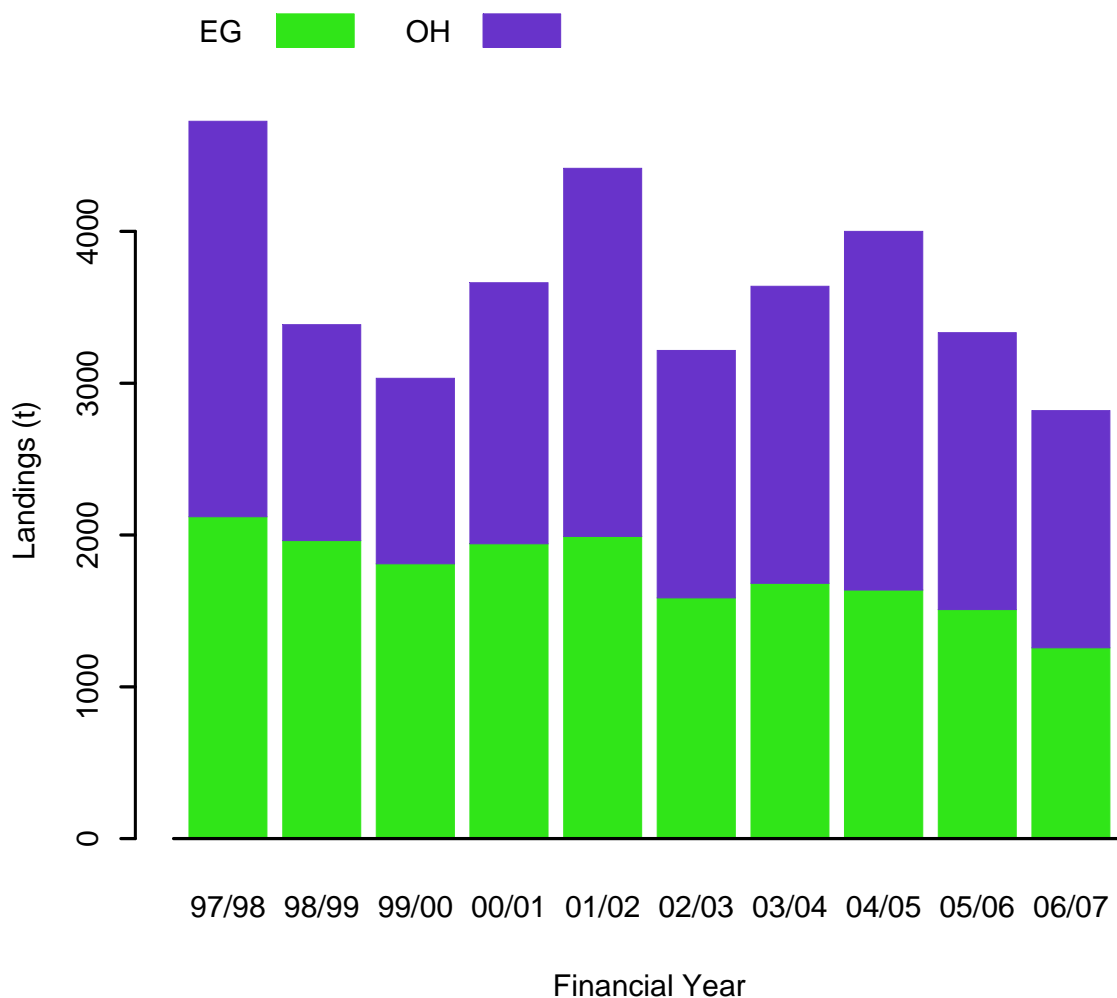


Figure 16: Landings of sea mullet from NSW commercial fisheries from 1997/98.
 *Fisheries which contribute less than 2.5% of the landings are excluded for clarity and privacy.

Table 17: Landings (in tonnes) of sea mullet from NSW commercial fisheries since 1997/98.

Year	Estuary General	Ocean Hauling
1997/98	2120.6636	2603.8515
1998/99	1962.7646	1422.9934
1999/00	1810.1567	1221.9016
2000/01	1941.9794	1719.7133
2001/02	1990.4912	2424.5416
2002/03	1585.6823	1629.7852
2003/04	1681.9571	1956.8449
2004/05	1636.8921	2362.7667
2005/06	1508.2061	1824.0173
2006/07	1256.36738	1562.9258

*Fisheries which contribute less than 1% of the landings are excluded for clarity.

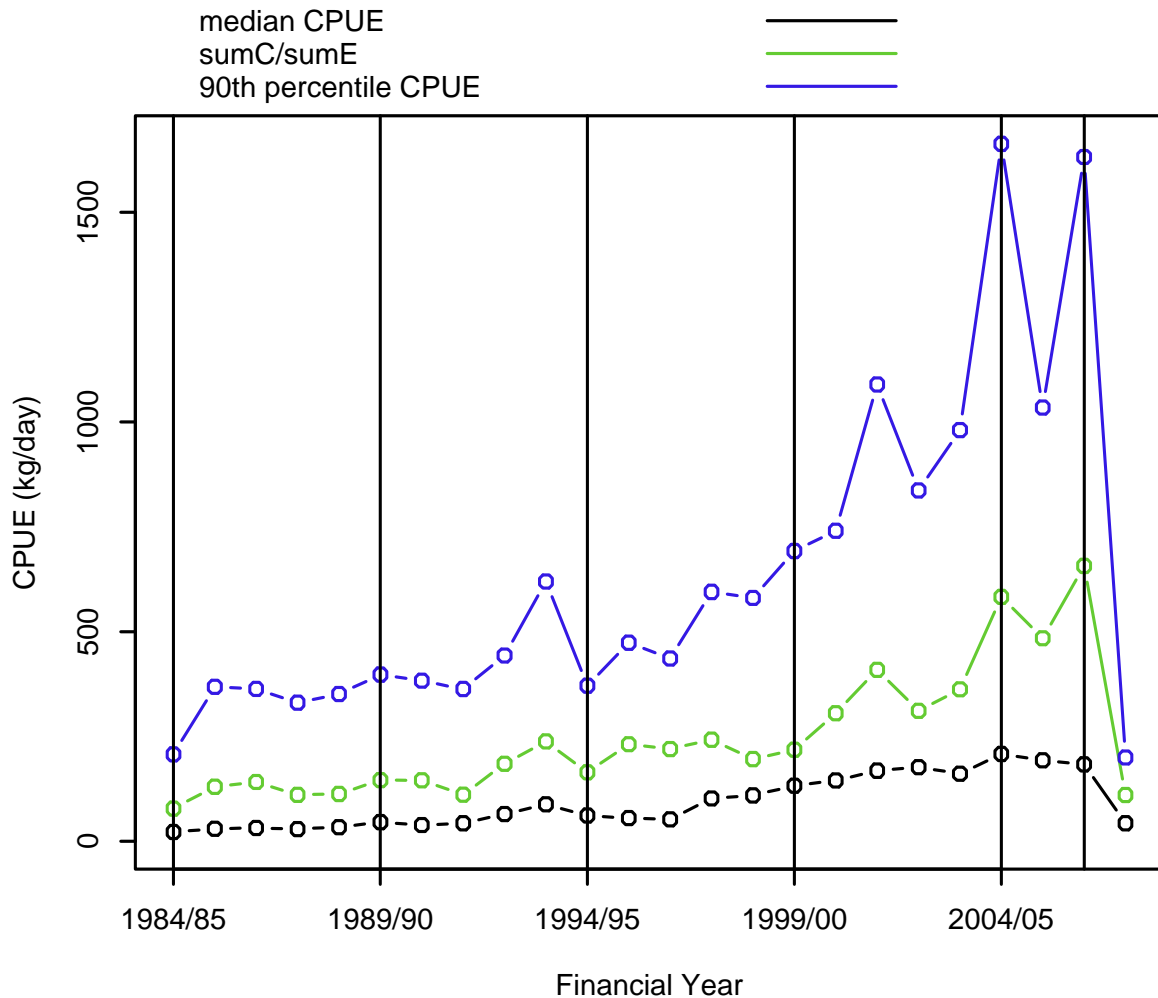


Figure 17: Commercial catch rates of sea mullet harvested using beach hauling for NSW. Two indicators are provided: (1) median catch rate (lower solid line); and (2) 90th percentile of the catch rate (upper dashed line).

*Records with a zero catch rate (i.e. no catch recorded) are not included in these analyses.

Recreational Fishery (Source: The National Recreational and Indigenous Fishing Survey¹⁴)

Table 18: Estimated number and weight of Mullet that were kept by recreational fishers for each major type of water-body in NSW (April 2000 to March 2001).

Waterbody	Estimated Total (000's)	Estimated Weight (tonnes)
Inshore	87	29.6
Estuarine	345.8	117.6
Rivers	10	3.4
Dams	2.3	0.8

*Catch weights are calculated assuming an average weight of 0.34 kg/fish

Silver Trevally (*Pseudocaranx geogianus*)

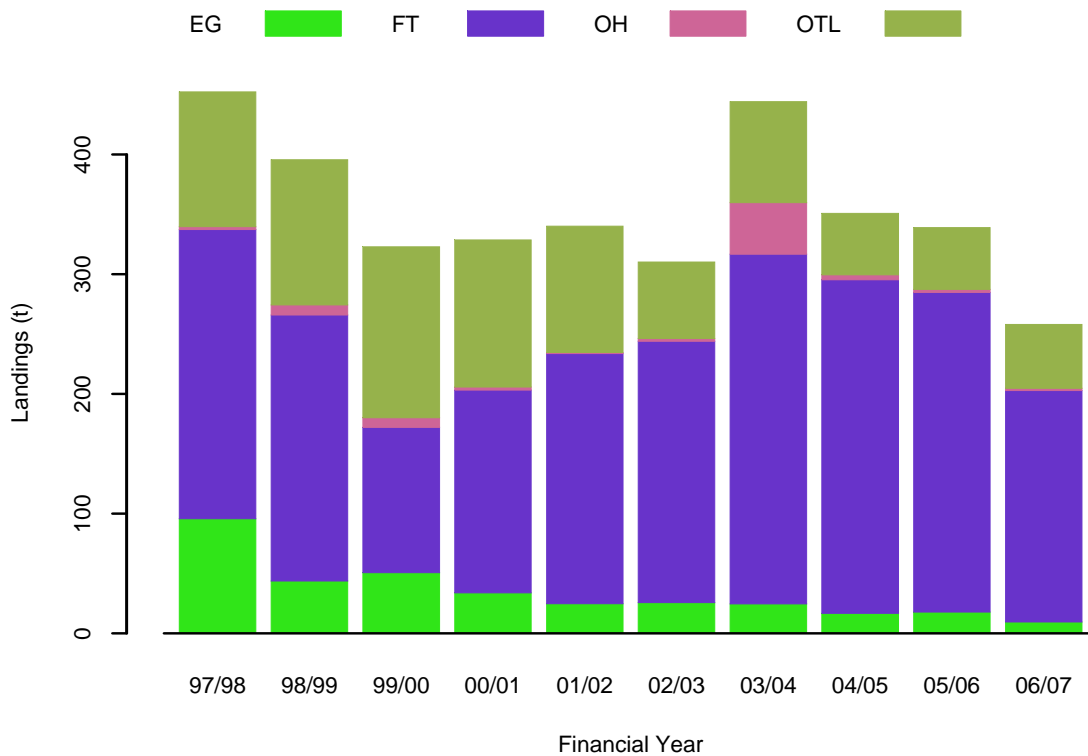


Figure 18: Landings of silver trevally from NSW commercial fisheries from 1997/98.
*Fisheries which contribute less than 2.5% of the landings are excluded for clarity and privacy.

Table 19: Landings (in tonnes) of silver trevally from NSW commercial fisheries since 1997/98.

Year	Estuary General	Fish Trawl	Ocean Hauling	Ocean Trap and Line
1997/98	95.8391	241.4482	2.4048	112.47089
1998/99	43.8291	222.0842	8.4515	121.24176
1999/00	50.5948	121.592	7.868	142.86436
2000/01	33.747	169.4041	2.6939	122.81523
2001/02	24.7026	209.0718	0.865	105.54273
2002/03	25.7586	218.2161	2.3513	63.89103
2003/04	24.65	292.0802	43.032	84.38487
2004/05	16.7173	278.6266	4.1654	51.38348
2005/06	17.8213	266.946	2.5328	51.61693
2006/07	9.5447	193.1906	1.9754	53.3607

*Fisheries which contribute less than 1% of the landings are excluded for clarity.

Recreational Fishery (Source: The National Recreational and Indigenous Fishing Survey¹⁴)

Table 20: Estimated number and weight of Trevally that were kept by recreational fishers for each major type of water-body in NSW (April 2000 to March 2001).

Waterbody	Estimated Total (000's)	Estimated Weight (tonnes)
Offshore	28.1	9.8
Inshore	167.5	58.6
Estuarine	54.6	19.1

*Catch weights are calculated assuming an average weight of 0.35 kg/fish

Sweep (*Scorpius lineolatus*)

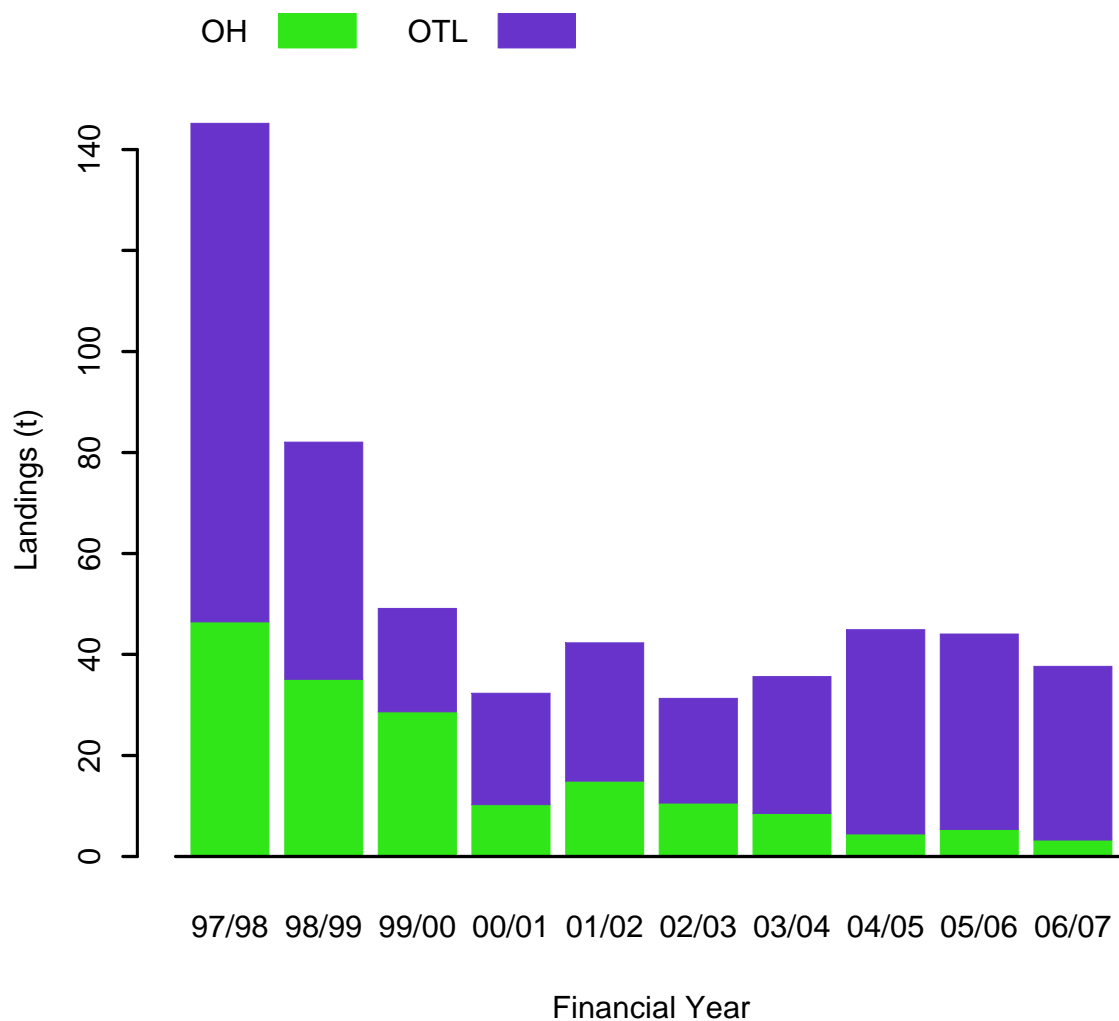


Figure 19: Landings of sweep from NSW commercial fisheries from 1997/98.

*Fisheries which contribute less than 2.5% of the landings are excluded for clarity and privacy

Table 21: Landings (in tonnes) of sweep from NSW commercial fisheries since 1997/98.

Year	Ocean Hauling	Ocean Trap and Line
1997/98	46.473	98.69495
1998/99	35.0953	46.9624
1999/00	28.63	20.5012
2000/01	10.2785	22.05708
2001/02	14.937	27.3573
2002/03	10.606	20.69886
2003/04	8.511	27.09577
2004/05	4.46	40.45005
2005/06	5.3592	38.6832
2006/07	3.2668	34.39

*Fisheries which contribute less than 1% of the landings are excluded for clarity.

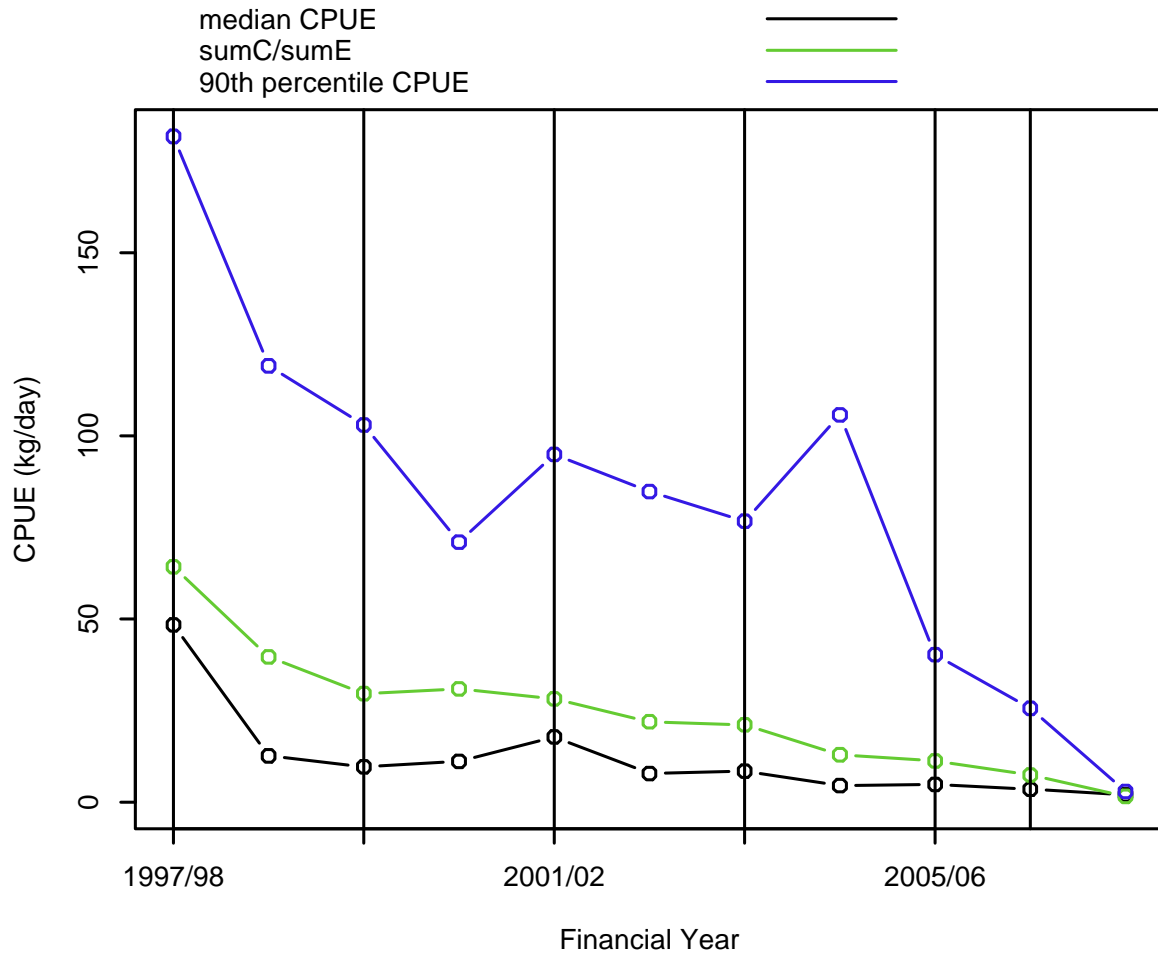


Figure 20: Commercial catch rates of sweep harvested using purse seining for NSW. Two indicators are provided: (1) median catch rate (lower solid line); and (2) 90th percentile of the catch rate (upper dashed line).

*Records with a zero catch rate (i.e. no catch recorded) are not included in these analyses.

Recreational Fishery (Source: The National Recreational and Indigenous Fishing Survey¹⁴)

Table 22: Estimated number of Sweep that were kept by recreational fishers for each major type of water-body in NSW (April 2000 to March 2001).

Waterbody	Estimated Total (000's)
Offshore	0.6
Inshore	89.1
Estuarine	3

Whitebait – Sandy Sprat (*Hyperlophus vittatus*)

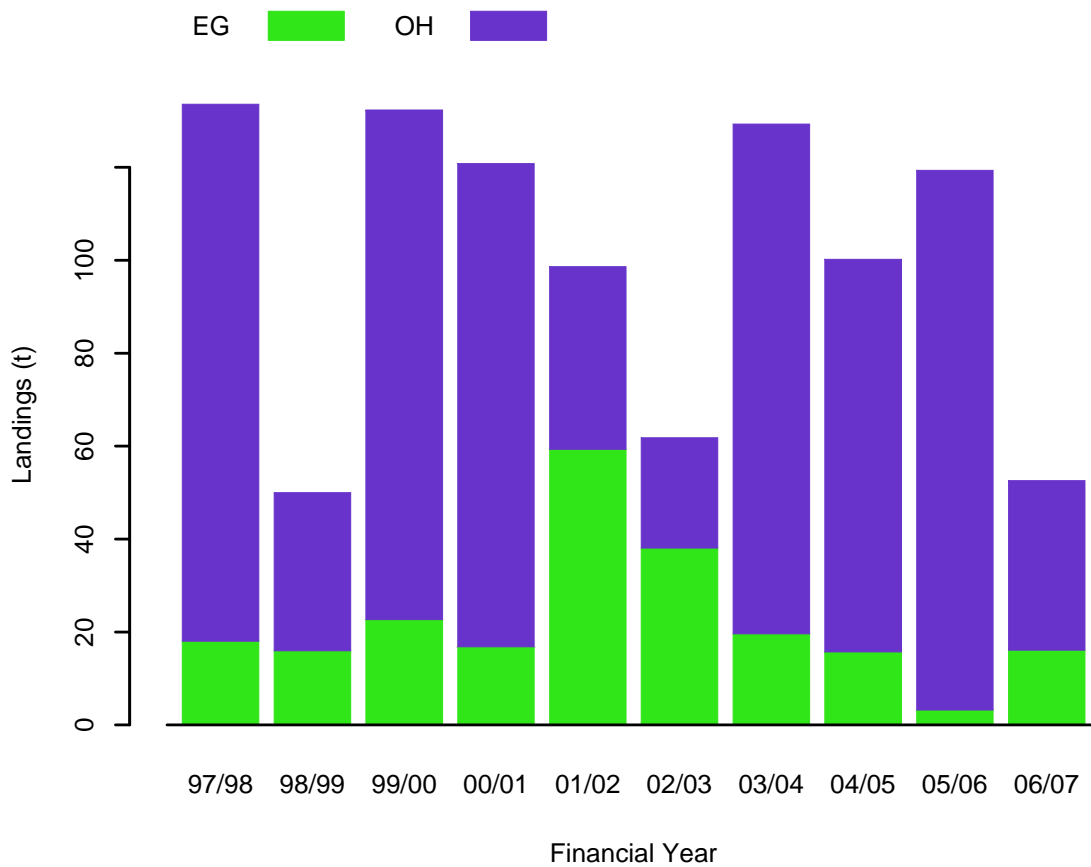


Figure 21: Landings of whitebait - sandy sprat from NSW commercial fisheries from 1997/98.

*Fisheries which contribute less than 2.5% of the landings are excluded for clarity and privacy.

Table 23: Landings (in tonnes) of whitebait - sandy sprat from NSW commercial fisheries since 1997/98.

Year	Estuary General	Ocean Hauling
1997/98	18.0228	115.5345
1998/99	15.9559	34.0185
1999/00	22.6533	109.6805
2000/01	16.8014	103.994
2001/02	59.3172	39.288
2002/03	38.0604	23.73
2003/04	19.5842	109.7113
2004/05	15.7094	84.4822
2005/06	3.2393	116.13
2006/07	16.067	36.4952

*Fisheries which contribute less than 1% of the landings are excluded for clarity.

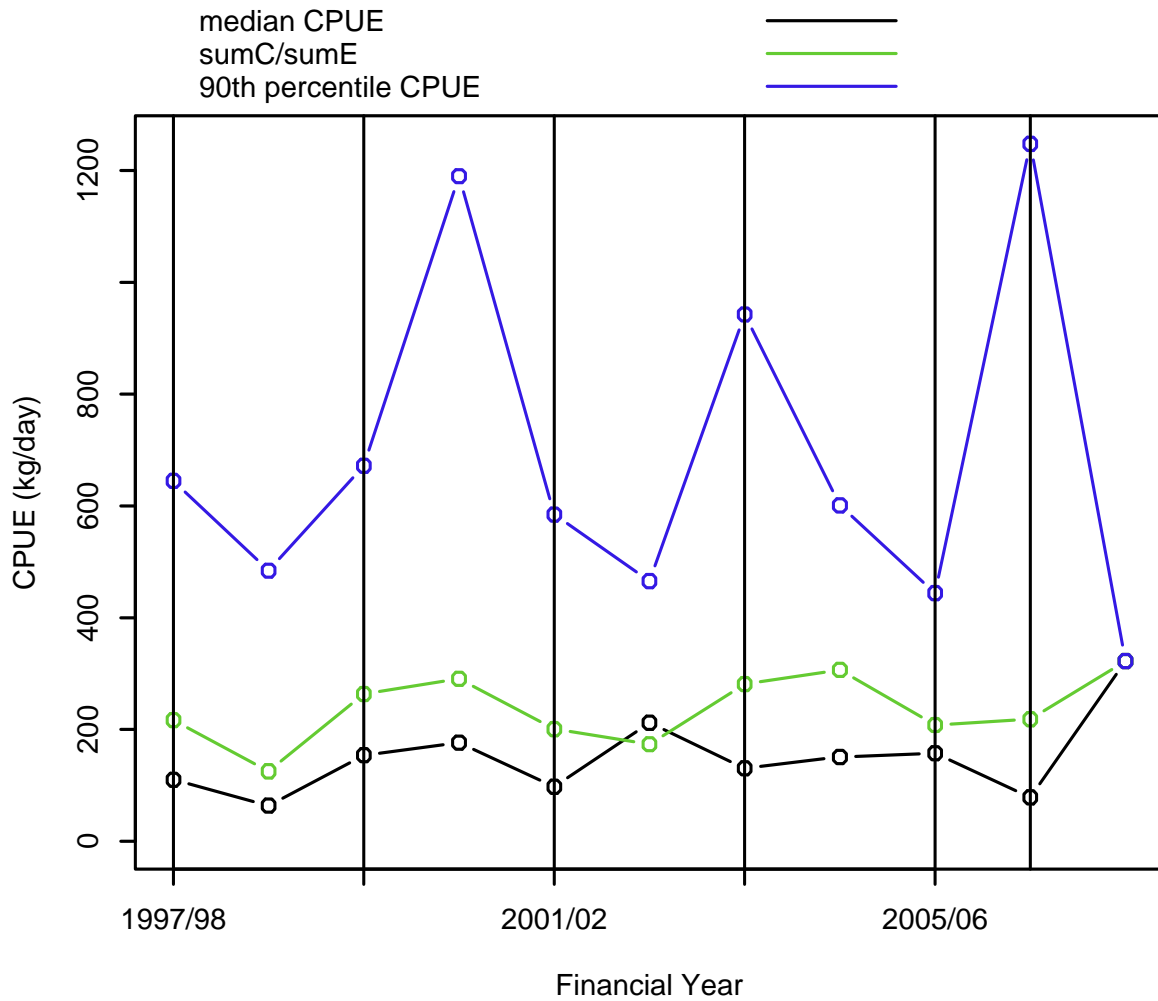


Figure 22: Commercial catch rates of whitebait - sandy sprat harvested using bait netting for NSW. Two indicators are provided: (1) median catch rate (lower solid line); and (2) 90th percentile of the catch rate (upper dashed line).
 *Records with a zero catch rate (i.e. no catch recorded) are not included in these analyses.

Recreational Fishery

No recreational catch estimate available.

Yellowfin Bream (*Acanthopagrus australis*)

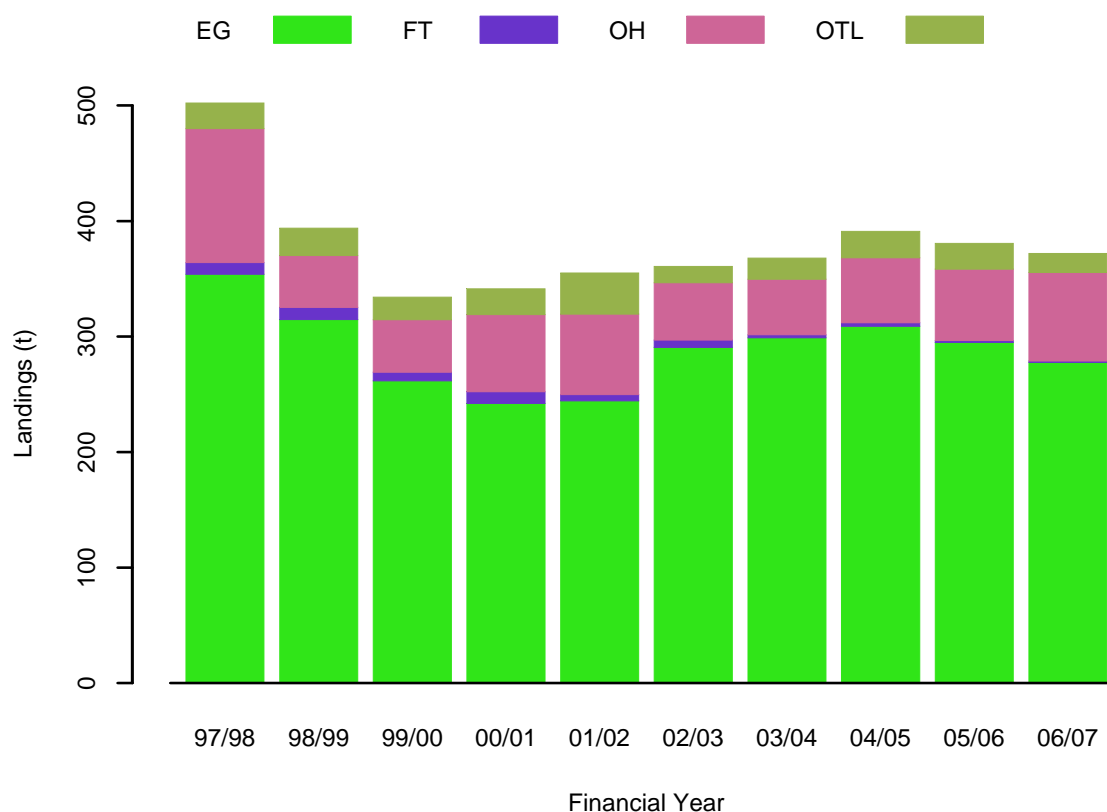


Figure 23: Landings of yellowfin bream from NSW commercial fisheries from 1997/98.
*Fisheries which contribute less than 2.5% of the landings are excluded for clarity and privacy.

Table 24: Landings (in tonnes) of yellowfin bream from NSW commercial fisheries since 1997/98.

Year	Estuary General	Fish Trawl	Ocean Hauling	Ocean Trap and Line
1997/98	353.87904	10.1325	115.9838	22.13556
1998/99	314.7308	10.3829	45.014	23.67529
1999/00	261.6159	7.5162	45.436	19.6189
2000/01	241.9892	10.1991	66.7185	22.31994
2001/02	244.35548	5.3736	69.6259	35.55811
2002/03	290.56555	6.3358	49.7712	14.07811
2003/04	298.8792	2.5804	48.2198	18.1364
2004/05	308.92931	2.9817	56.3245	22.66385
2005/06	294.9604	1.6875	61.6383	22.39025
2006/07	277.6556	1.1208	76.6254	16.60477

*Fisheries which contribute less than 1% of the landings are excluded for clarity.

Recreational Fishery (Source: The National Recreational and Indigenous Fishing Survey¹⁴)

Table 25: Estimated number and weight of Bream that were kept by recreational fishers for each major type of water-body in NSW (April 2000 to March 2001).

Waterbody	Estimated Total (000's)	Estimated Weight (tonnes)
Offshore	0.6	0.2
Inshore	951.7	333.1
Estuarine	1129.9	395.5

*Catch weights are calculated assuming an average weight of 0.35 kg/fish

Yellowtail Scad (*Trachurus novaezelandiae*)

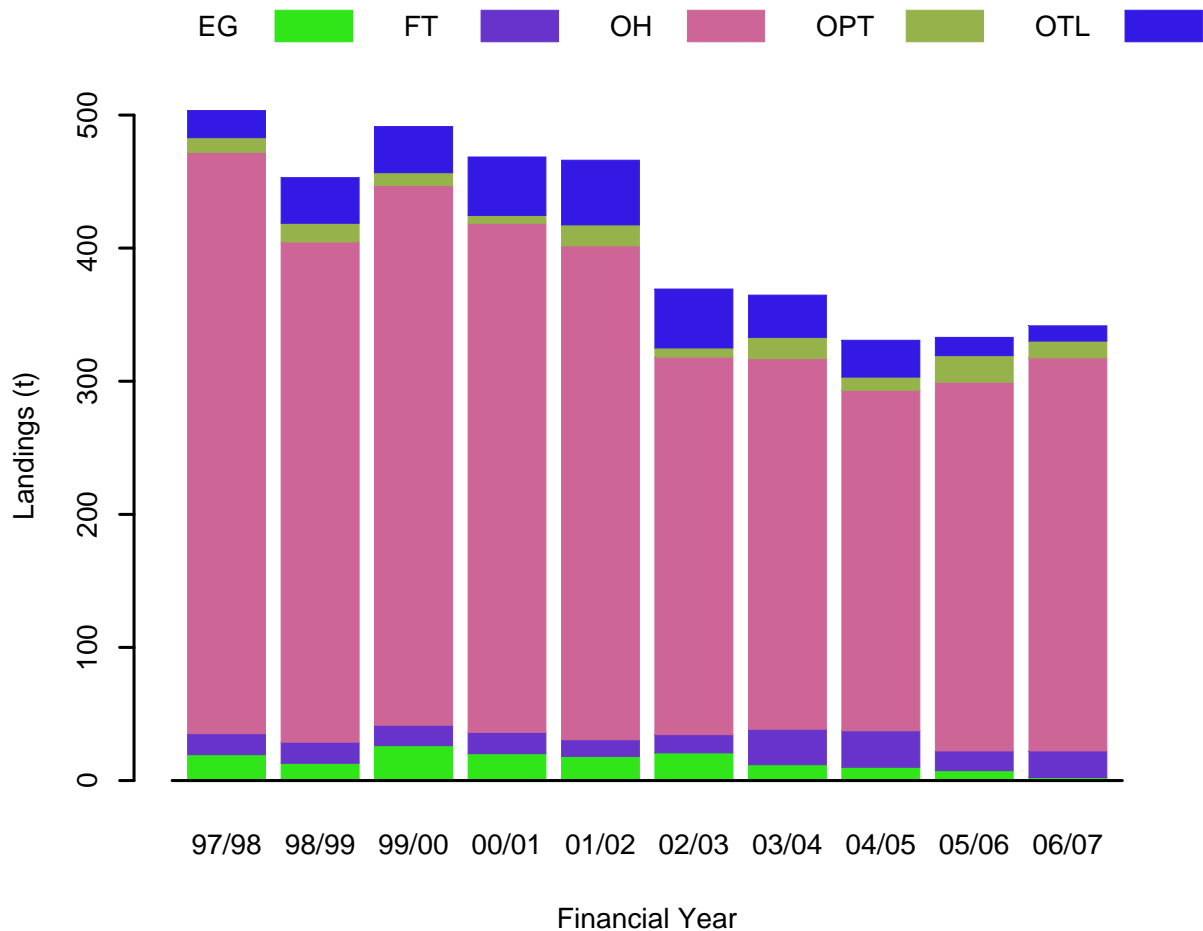


Figure 24: Landings of yellowtail scad from NSW commercial fisheries from 1997/98.
*Fisheries which contribute less than 2.5% of the landings are excluded for clarity and privacy

Table 26: Landings (in tonnes) of yellowtail scad from NSW commercial fisheries since 1997/98.

Year	Estuary General	Fish Trawl	Ocean Hauling	Ocean Prawn Trawl	Ocean Trap and Line
1997/98	19.479	15.6821	436.7429	11.1935	20.1503
1998/99	12.9368	15.8835	375.8864	13.9767	34.18965
1999/00	26.1785	15.4104	405.391	9.6704	34.56438
2000/01	20.1409	15.9561	382.54	5.986	43.8804
2001/02	18.1	12.5613	371.065	15.7102	48.5481
2002/03	20.7382	13.6985	283.6649	6.9223	44.2476
2003/04	11.922	26.6299	278.2944	16.1157	31.7867
2004/05	9.8824	27.476	255.8843	9.8134	27.66245
2005/06	7.3934	14.7867	277.0136	19.9645	13.7825
2006/07	2.2201	19.9433	295.3637	12.6069	11.4368

*Fisheries which contribute less than 1% of the landings are excluded for clarity.

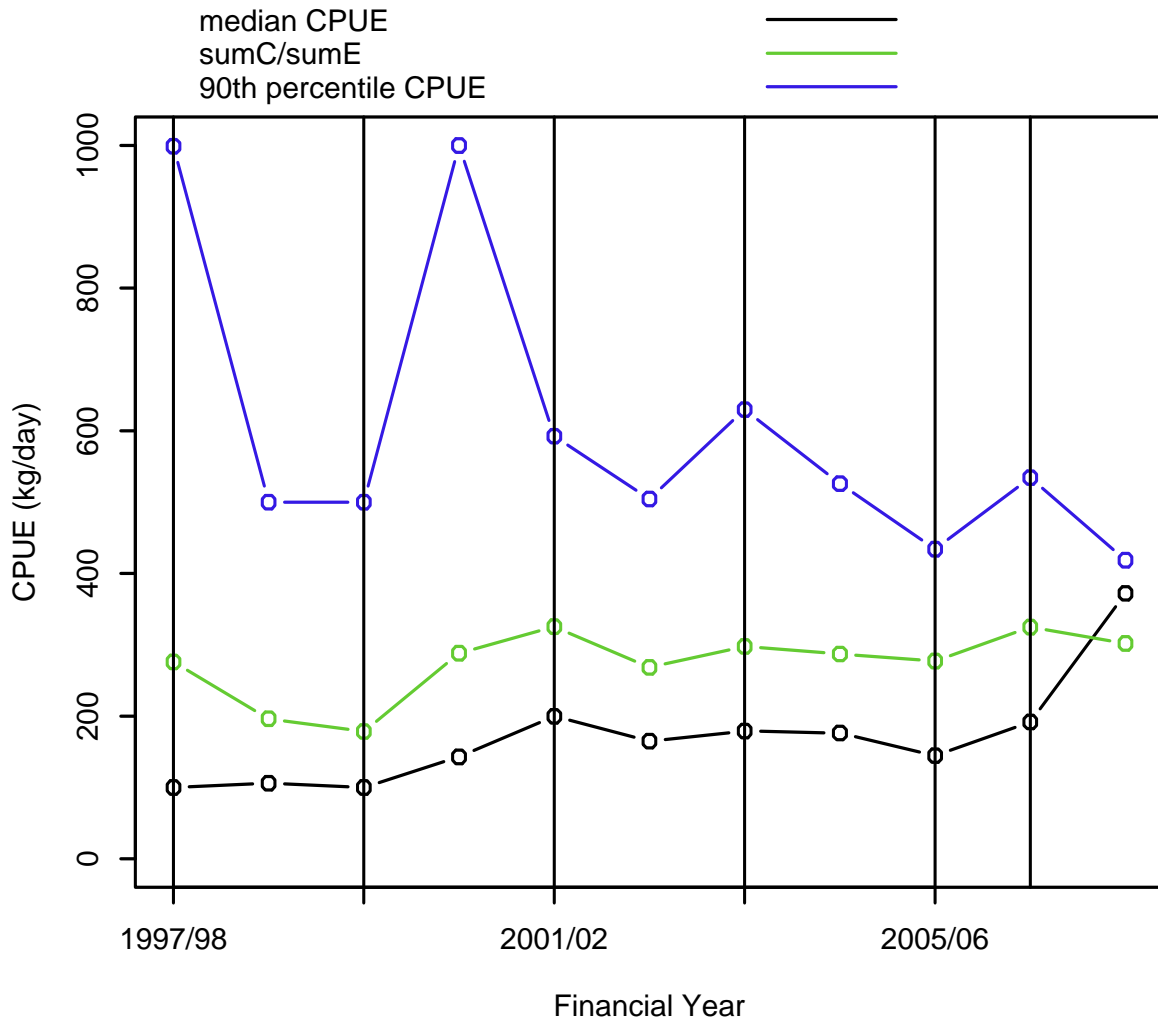


Figure 25: Commercial catch rates of yellowtail scad harvested using purse seining for NSW. Two indicators are provided: (1) median catch rate (lower solid line); and (2) 90th percentile of the catch rate (upper dashed line).
 *Records with a zero catch rate (i.e. no catch recorded) are not included in these analyses.

Recreational Fishery (Source: The National Recreational and Indigenous Fishing Survey¹⁴)

Table 27: Estimated number of Scads/mackerel that were kept by recreational fishers for each major type of water-body in NSW (April 2000 to March 2001).

Waterbody	Estimated Total (000's)
Inshore	117.4
Estuarine	100.8

Australian Sardine / Pilchard (*Sardinops neopilchardus*)

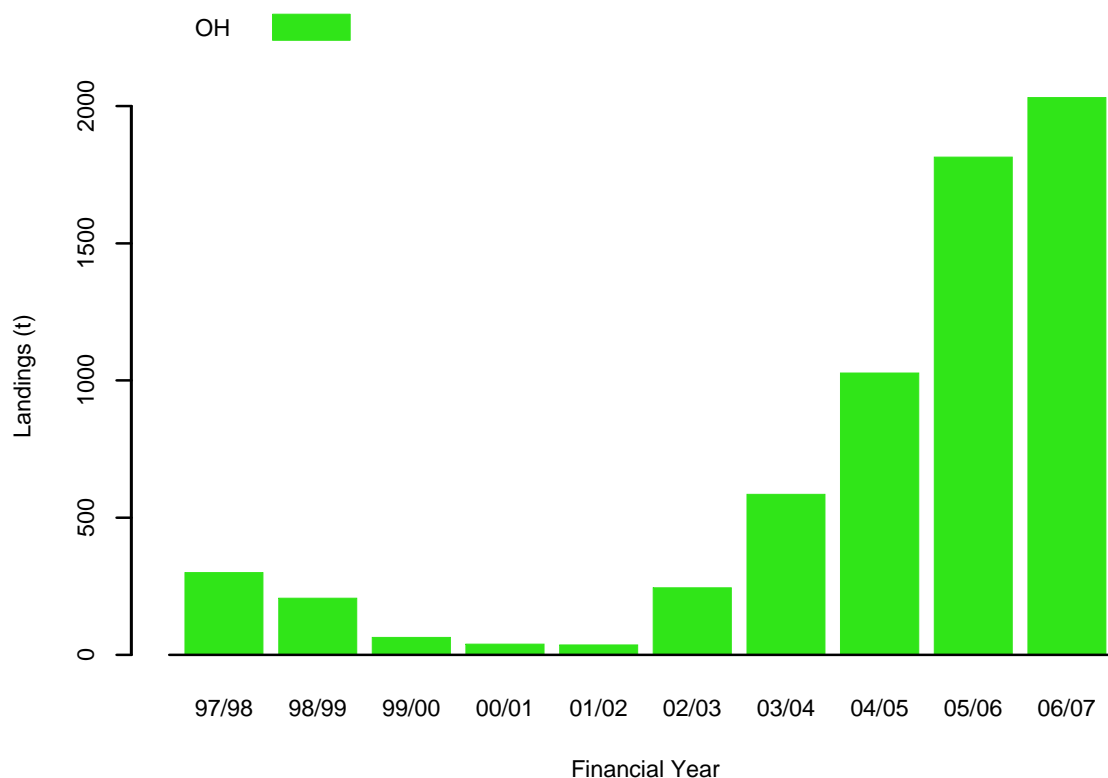


Figure 26: Landings of Australian sardine from NSW commercial fisheries from 1997/98.
*Fisheries which contribute less than 2.5% of the landings are excluded for clarity and privacy.

Table 28: Landings (in tonnes) of Australian sardine from NSW commercial fisheries since 1997/98.

Year	Ocean Hauling
1997/98	300.1165
1998/99	206.7088
1999/00	63.8467
2000/01	39.0134
2001/02	36.1142
2002/03	244.362
2003/04	584.7763
2004/05	1027.005
2005/06	1813.4875
2006/07	2030.2558

*Fisheries which contribute less than 1% of the landings are excluded for clarity.

Recreational Fishery (Source: The National Recreational and Indigenous Fishing Survey¹⁴)

Table 29: Estimated number of Herring/pilchards that were kept by recreational fishers for each major type of water-body in NSW (April 2000 to March 2001).

Waterbody	Estimated Total (000's)
Estuarine	76
Rivers	2.8

Mulloway (*Argyrosomus japonicus*)

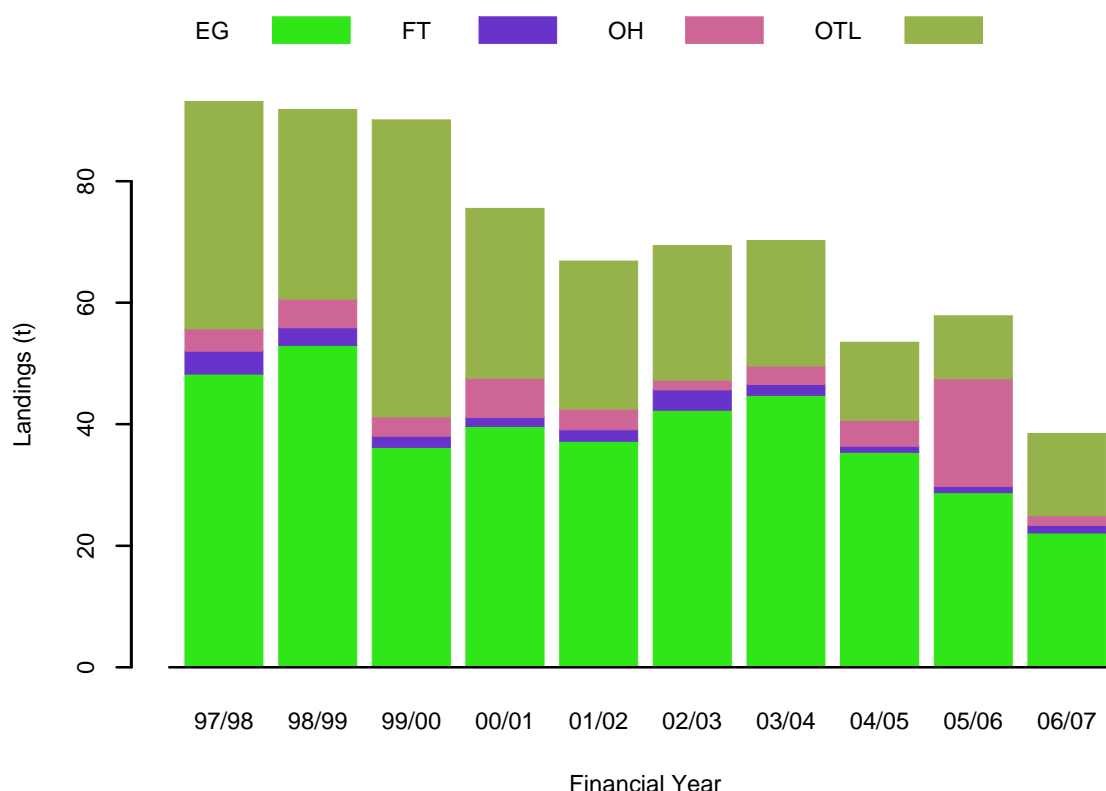


Figure 27: Landings of mulloway from NSW commercial fisheries from 1997/98.
*Fisheries which contribute less than 2.5% of the landings are excluded for clarity and privacy.

Table 30: Landings (in tonnes) of mulloway from NSW commercial fisheries since 1997/98.

Year	Estuary General	Fish Trawl	Ocean Hauling	Ocean Trap and Line
1997/98	48.24106	3.7737	3.6825	37.38546
1998/99	52.96712	2.8784	4.7435	31.20149
1999/00	36.18757	1.8337	3.1625	48.88394
2000/01	39.64154	1.4652	6.44894	27.96421
2001/02	37.18617	1.92165	3.3554	24.38737
2002/03	42.30845	3.318	1.6078	22.17465
2003/04	44.75516	1.7883	3.0365	20.62908
2004/05	35.38833	0.9641	4.2854	12.85511
2005/06	28.72898	1.0238	17.702	10.373
2006/07	22.07069	1.2493	1.6201	13.52619

*Fisheries which contribute less than 1% of the landings are excluded for clarity.

Recreational Fishery (Source: The National Recreational and Indigenous Fishing Survey¹⁴)

Table 31: Estimated number and weight of Mulloway that were kept by recreational fishers for each major type of water-body in NSW (April 2000 to March 2001).

Waterbody	Estimated Total (000's)	Estimated Weight (tonnes)
Offshore	18.6	37.1
Inshore	84.4	168.8
Estuarine	33.9	67.8

*Catch weights are calculated assuming an average weight of 2 kg/fish

Diamondfish (*Monodactylus argenteus*)

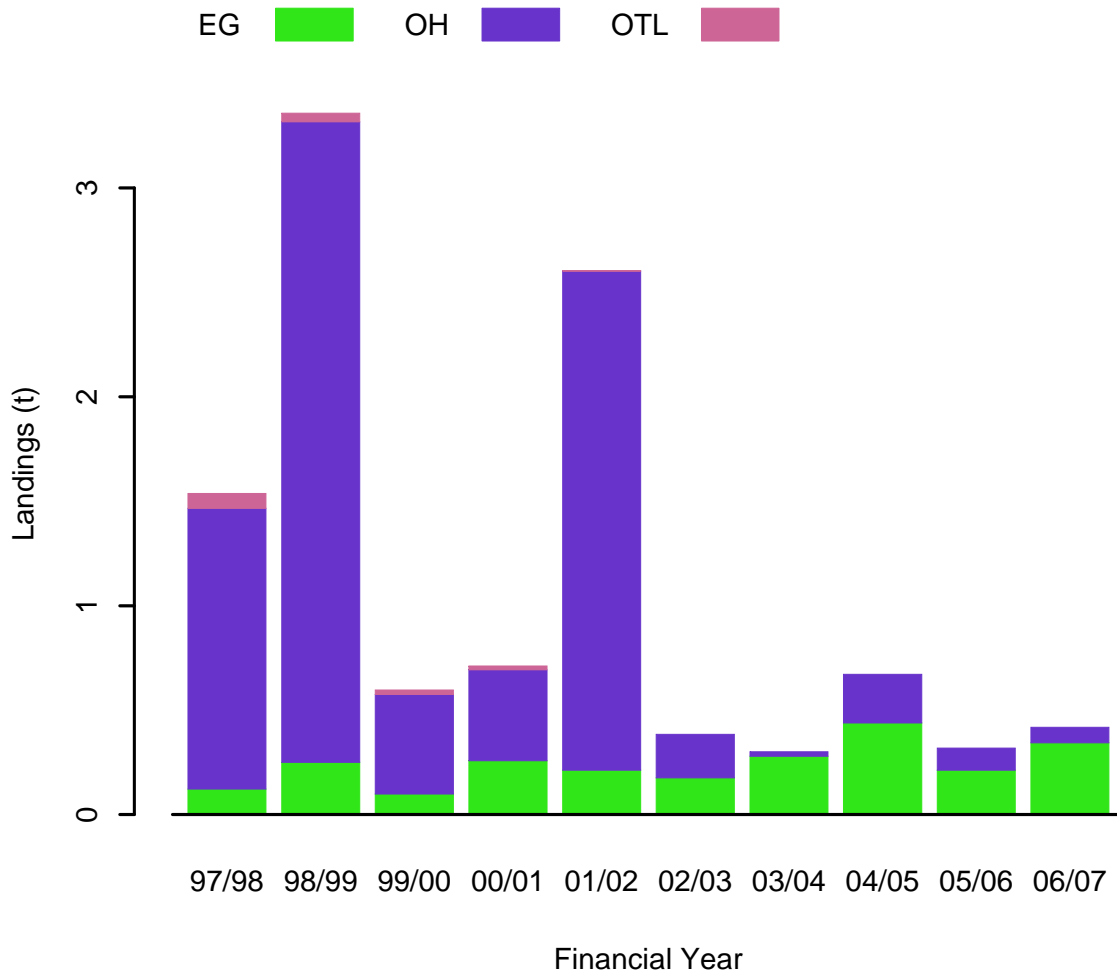


Figure 28: Landings of diamondfish from NSW commercial fisheries from 1997/98.
*Fisheries which contribute less than 2.5% of the landings are excluded for clarity and privacy.

Table 32: Landings (in tonnes) of diamondfish from NSW commercial fisheries since 1997/98.

Year	Estuary General	Ocean Hauling	Ocean Trap and Line
1997/98	0.1223	1.3437	0.071
1998/99	0.25	3.066	0.041
1999/00	0.0988	0.476	0.021
2000/01	0.2582	0.435	0.018
2001/02	0.2124	2.3893	0.002
2002/03	0.1753	0.2085	0
2003/04	0.2795	0.0216	0
2004/05	0.4385	0.2331	0
2005/06	0.2126	0.105	0
2006/07	0.3433	0.074	0

*Fisheries which contribute less than 1% of the landings are excluded for clarity.

Recreational Fishery

No recreational catch estimate available.

Frigate Mackerel (*Auxis thazard*)

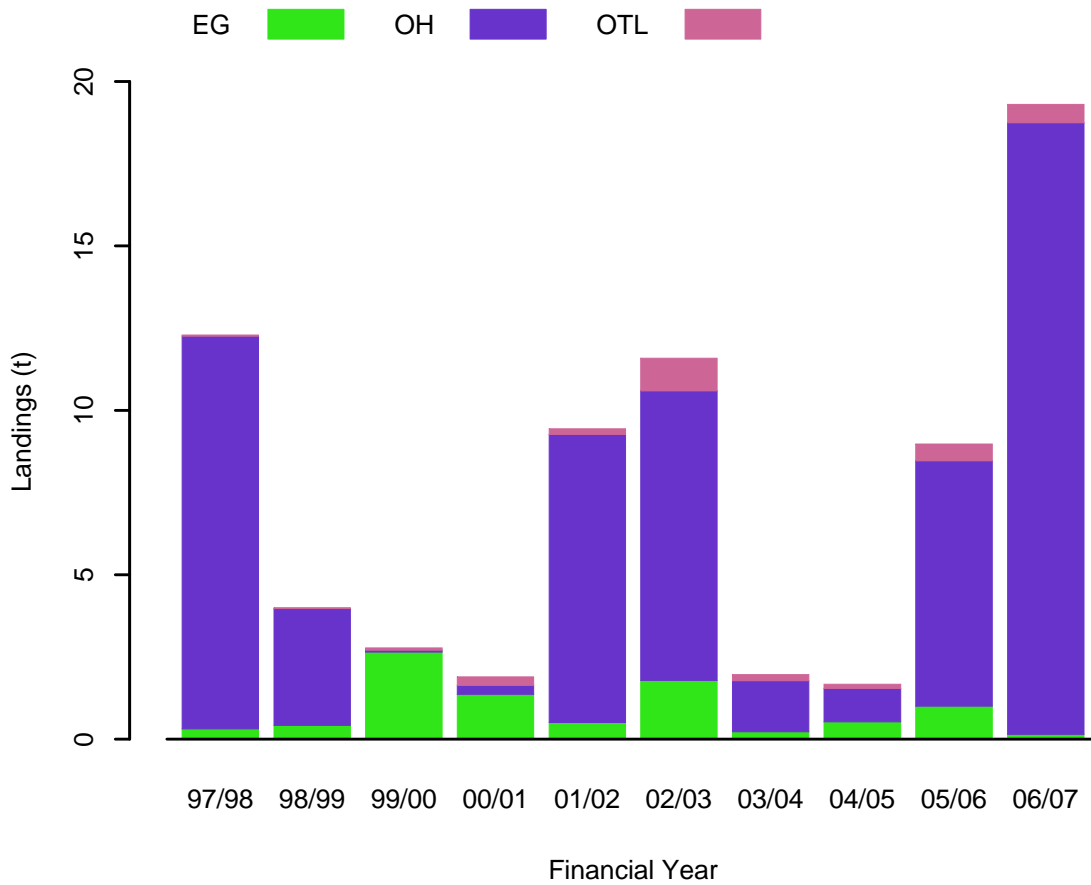


Figure 29: Landings of frigate mackerel from NSW commercial fisheries from 1997/98.
*Fisheries which contribute less than 2.5% of the landings are excluded for clarity and privacy.

Table 33: Landings (in tonnes) of frigate mackerel from NSW commercial fisheries since 1997/98.

Year	Estuary General	Ocean Hauling	Ocean Trap and Line
1997/98	0.3089	11.943	0.037
1998/99	0.419	3.552	0.026
1999/00	2.6439	0.063	0.067
2000/01	1.3609	0.275	0.254
2001/02	0.508	8.761	0.169
2002/03	1.7892	8.8	0.9927
2003/04	0.2199	1.558	0.1836
2004/05	0.5276	1.0137	0.1284
2005/06	1.0034	7.4614	0.5135
2006/07	0.144	18.5982	0.5582

*Fisheries which contribute less than 1% of the landings are excluded for clarity.

Recreational Fishery

No recreational catch estimate available.

Mackerel Tuna (*Euthynnus affinis*)

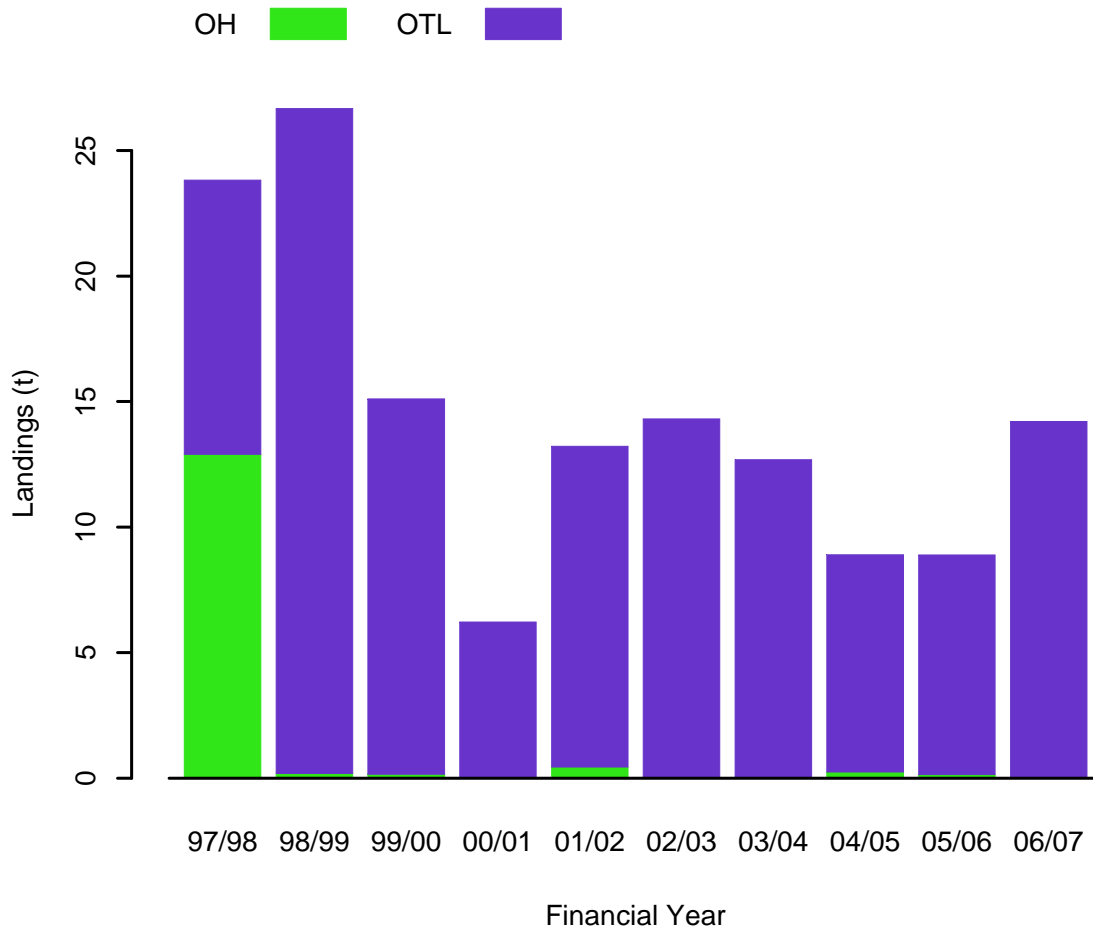


Figure 30: Landings of mackerel tuna from NSW commercial fisheries from 1997/98.
*Fisheries which contribute less than 2.5% of the landings are excluded for clarity and privacy.

Table 34: Landings (in tonnes) of mackerel tuna from NSW commercial fisheries since 1997/98.

Year	Ocean Hauling	Ocean Trap and Line
1997/98	12.903	10.9185
1998/99	0.194	26.4728
1999/00	0.162	14.9473
2000/01	0.0065	6.2168
2001/02	0.447	12.7705
2002/03	0	14.3094
2003/04	0.008	12.6801
2004/05	0.251	8.6492
2005/06	0.146	8.743
2006/07	0	14.2069

*Fisheries which contribute less than 1% of the landings are excluded for clarity.

Recreational Fishery

Estimated number of tuna / bonito provided under Australian bonito above.

Longtail Tuna (*Thunnus tonggo*)

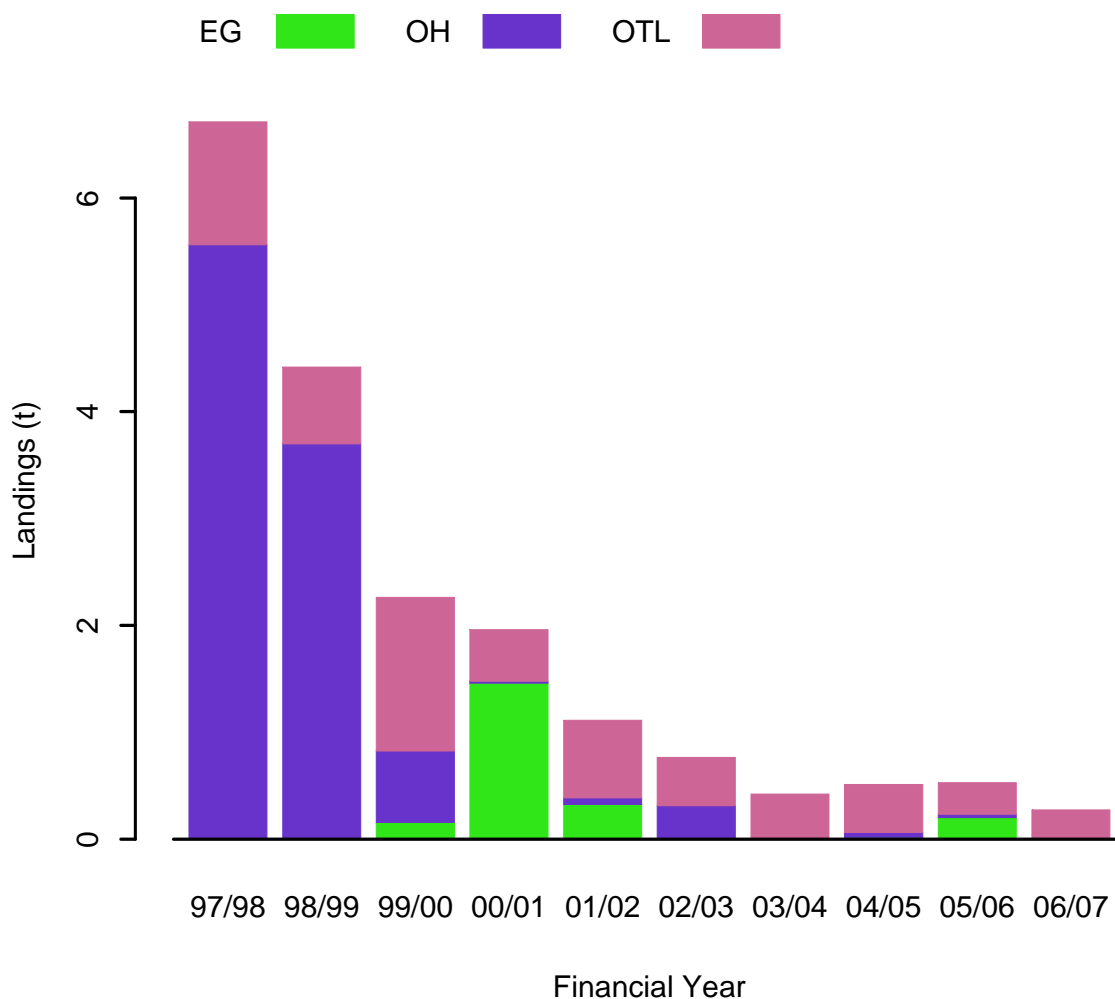


Figure 31: Landings of longtail tuna from NSW commercial fisheries from 1997/98.
*Fisheries which contribute less than 2.5% of the landings are excluded for clarity and privacy.

Table 35: Landings (in tonnes) of longtail tuna from NSW commercial fisheries since 1997/98.

Year	Estuary General	Ocean Hauling	Ocean Trap and Line
1997/98	0	5.5637	1.14764
1998/99	0	3.698	0.7183
1999/00	0.1573	0.667	1.43765
2000/01	1.46	0.019	0.48084
2001/02	0.325	0.06	0.72865
2002/03	0	0.313	0.45252
2003/04	0	0	0.4219
2004/05	0.018	0.0451	0.4477
2005/06	0.2013	0.032	0.2939
2006/07	0	0	0.2737

*Fisheries which contribute less than 1% of the landings are excluded for clarity.

Recreational Fishery

No recreational catch estimate available.

Spanish Mackerel (*Scomberomorus commerson*)

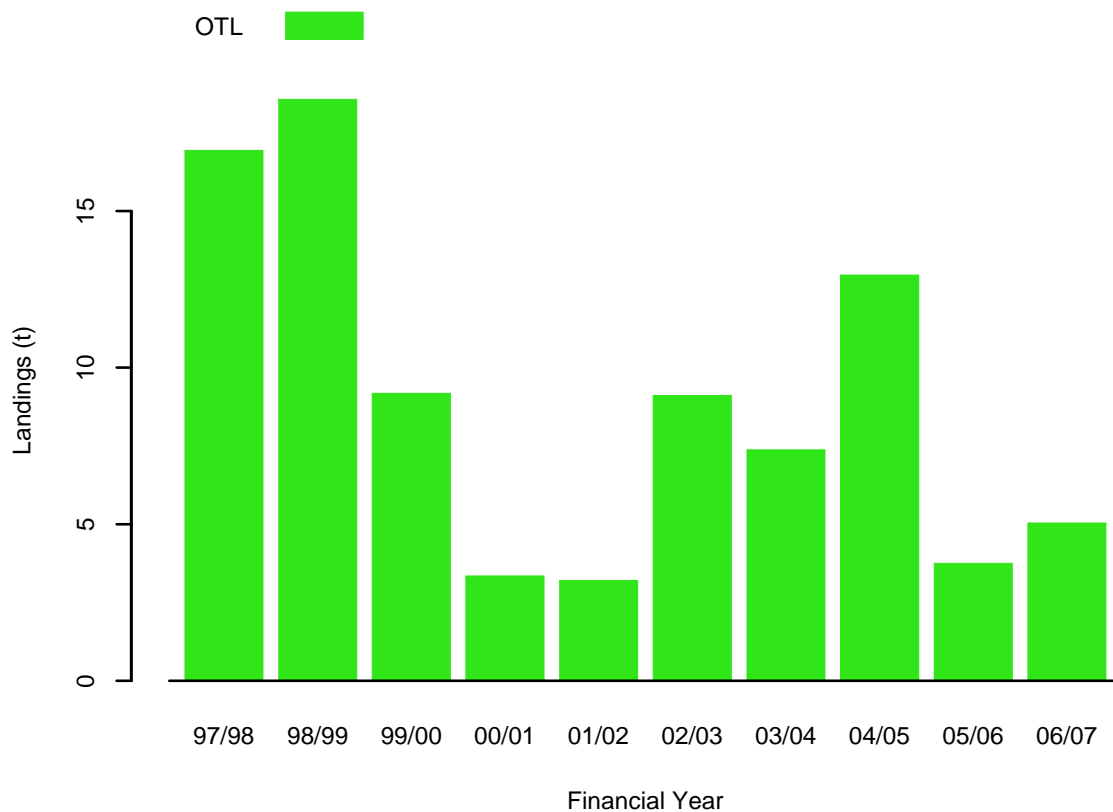


Figure 32: Landings of Spanish mackerel from NSW commercial fisheries from 1997/98.
*Fisheries which contribute less than 2.5% of the landings are excluded for clarity and privacy.

Table 36: Landings (in tonnes) of Spanish mackerel from NSW commercial fisheries since 1997/98.

Year	Ocean Trap and Line
1997/98	16.93361
1998/99	18.56728
1999/00	9.17999
2000/01	3.34605
2001/02	3.19989
2002/03	9.11562
2003/04	7.37725
2004/05	12.95619
2005/06	3.75348
2006/07	5.03801

*Fisheries which contribute less than 1% of the landings are excluded for clarity.

Recreational Fishery (Source: The National Recreational and Indigenous Fishing Survey¹⁴)

Table 37: Estimated number and weight of Mackerels that were kept by recreational fishers for each major type of water-body in NSW (April 2000 to March 2001).

Waterbody	Estimated Total (000's)	Estimated Weight (tonnes)
Offshore	7.2	35.8
Inshore	18.6	92.8

*Catch weights are calculated assuming an average weight of 5 kg/fish

Tarwhine (*Rhabdosargus sarba*)

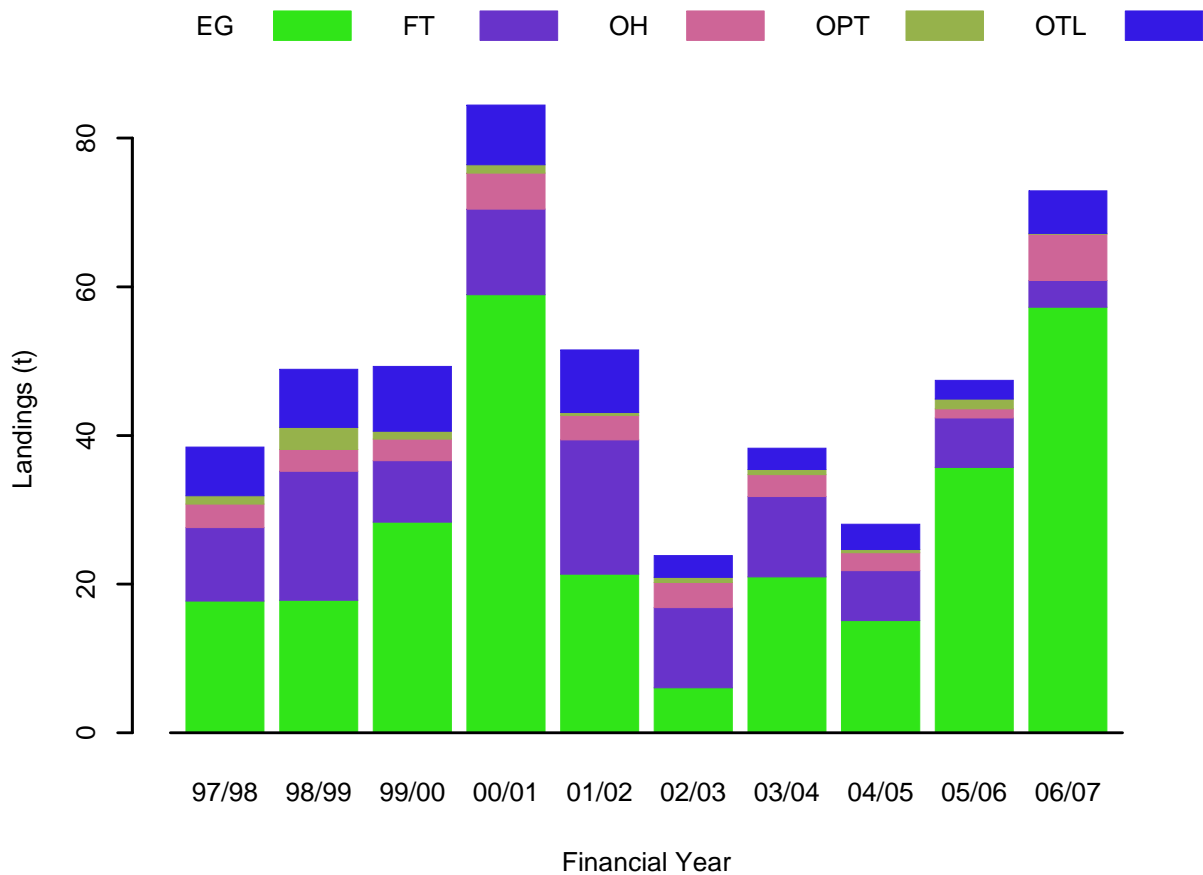


Figure 33: Landings of tarwhine from NSW commercial fisheries from 1997/98.
*Fisheries which contribute less than 2.5% of the landings are excluded for clarity and privacy

Table 38: Landings (in tonnes) of tarwhine from NSW commercial fisheries since 1997/98.

Year	Estuary General	Fish Trawl	Ocean Hauling	Ocean Prawn Trawl	Ocean Trap and Line
1997/98	17.7321	9.8628	3.1647	1.1342	6.5446
1998/99	17.8258	17.3695	2.9173	2.968	7.83575
1999/00	28.3317	8.2813	2.8971	1.0735	8.7117
2000/01	58.9291	11.5205	4.8677	1.11665	8.00805
2001/02	21.3338	18.063	3.3001	0.3787	8.4313
2002/03	6.054	10.793	3.3759	0.6896	2.93605
2003/04	20.969	10.8286	2.9309	0.6849	2.87325
2004/05	15.11	6.7193	2.4046	0.43723	3.3874
2005/06	35.6954	6.6816	1.2153	1.2959	2.53046
2006/07	57.2566	3.5931	6.234	0.0983	5.73212

*Fisheries which contribute less than 1% of the landings are excluded for clarity.

Recreational Fishery

No recreational catch estimate available.

Appendix 7: A Summary Report against Ocean Hauling Fishery Export Approval conditions and recommendations

Condition / Recommendation	Progress
NSW Fisheries to inform Environment Australia of any future amendment to the management regime for the Ocean Hauling Fishery	Substantial changes to the <i>Fisheries Management (General) Regulation 2002</i> applying to the OHF were made commencing 5 February 2007. The changes provided for the implementation of full category 1 share management and a series of positive commercial fishery licensing reforms. A detailed Information Paper summarising the changes was published at that time.
Design and implement an industry funded scientific observer program (MR 1.1(a))	The report: <i>Fishery Management Strategies Performance Report 2004</i> ²¹ presents information on the implementation of the management actions outlined in the OH FMS up to June 2004. Refer to the Appendix 3 for a statement of implementation of management actions in the OH FMS for the period June 2004 to June 2007.
Modify fishing practices to reduce impacts on non-retained fauna (MR 1.1(b))	
Develop a system for formal stock assessment for target species to be developed within 5 years (from 2003) and reviewed at least every 3 years thereafter (MR 2.1.1 (b))	
Develop and implement a policy to manage the harvest of bait for the Commonwealth Tuna Fisheries in NSW waters (MR 2.2(e))	
Establish minimum entry requirements for new entrants at the fishing business level to prevent increases in effort by small businesses by December 2003 (MR 2.3(a))	
Where the fishery is a major harvester of an overfished species, develop and implement a recovery program for the species within a specified timeframe (MR 2.5(a))	

²¹ Available at www.fisheries.nsw.gov.au/commercial/management-strategies

Condition / Recommendation	Progress
<p>Develop an objective system for defining and setting trigger points to detect concerning trends in landings of all species permitted to be taken in the Ocean Hauling Fishery annually from 2003 (MR 8.1(g))</p>	<p>Refer to the Appendix 3 for a statement of implementation of management actions in the OH FMS for the period June 2004 to June 2007.</p>
<p>Conduct a risk assessment of the impacts of the Ocean Hauling Fishery on the ecosystem and initiate appropriate management programs (e.g. monitoring) based on the outcomes of that process by December 2004.</p>	<p>The OH FMS and EIS were prepared prior to the finalisation of the national Ecologically Sustainable Development (ESD) reporting framework by the Sustainability Indicators Working Group of the then Standing Committee on Fisheries and Aquaculture. At that time, the working group was recommending that Australian fisheries management agencies undertake a risk assessment for each fishery to determine the level of management or reporting necessary for component of the ecosystem</p> <p>The national ESD reporting framework has since been finalised and actively applied in recent Environment Protection Biodiversity Conservation assessments (prepared to meet Commonwealth environmental assessment requirements). In comparing the risk assessments conducted through the NSW EIS process to some assessments recently prepared under the national ESD framework approach, it is apparent that the ecosystem risk assessments undertaken in the NSW fishery EISs cover a greater range of ecosystem components and in general provide a more in-depth analysis than those done under the national framework.</p> <p>With regard to the risk assessment process, the national ESD framework adopts a stakeholder and expert workshop based approach. In comparison, the NSW EISs were prepared over a long time frame with significant input from a wide range of stakeholders, subject to expert peer review, and subject to public comment – accordingly; the outcomes can be reasonably expected to be consistent if not better.</p>

