# Commercial fishing in New South Wales

The New South Wales wild harvest commercial fishing industry is a dynamic network of skilled businesses. Commercial fishers, wholesalers, processors and retailers work together with the restaurant and catering industry to supply fresh seafood to communities across the state, as well as to interstate and overseas markets.

## Where do commercial fishers operate?

Commercial fishers operate throughout NSW state waters including estuaries, beaches, bays and ocean. Over three nautical miles (or 5.5km) to sea is generally considered Commonwealth waters, however, under an Offshore Constitutional Settlement, some species of fish and methods of fishing have been given to the state to manage

Commercial fishers are licensed and only operate in a particular fishery/ geographic area for which they have an authority.

## What is the economic value of the seafood industry in NSW?

The seafood industry (including aquaculture such as oyster farmers) and its fishers, wholesalers, processors and retailers generates over half a billion dollars of economic activity each year. Of this, wild harvest component is worth more than $90 million dollars at first point of sale.

## How many people work in the seafood industry?

More than 4000 people work either directly or indirectly in the industry, including approximately 1000 commercial fishers. The NSW fishing industry is primarily made up of small family businesses that rely on high levels of local knowledge and skills learnt over many generations.

## Where are the key commercial fishing fleets located?

The clean and green reputation of the whole NSW seafood industry depends on fisheries being viable, profitable and sustainable. The industry underpins the economy of many coastal towns providing business and employment. Towns and areas such as Maclean and the Clarence River, the Central Coast, Newcastle, Port Stephens, Coffs Harbour, Wollongong, Nowra and Eden are some of the key ports for commercial fishing.

## What are the key wild species harvested by NSW commercial fishers?

The NSW fishery is small, but diverse. We are fortunate to have a well-managed and healthy fishery. Snapper, yellow fin bream, flathead, king and school prawns, sea mullet, mulloway, whiting, yellowtail kingfish, crabs, eastern rock lobsters and deep water reef fish such as blue eye trevalla. Many of the species you see on the menu of fish and chip shops through to the best restaurants are all harvested by our commercial fishing fleet.

## How can I get the best seafood?

Different species are caught at various times of the year, so seeking fresh, seasonal produce from your local fisherman's co-op or fishmonger is the best way to ensure premium local seasonal catch.

Increasingly, consumers are becoming more aware of the importance of eating food that has been harvested or grown in a socially and environmentally responsible manner. Buying Australian seafood is a better choice – consumers know it is fresh and healthy; the fisheries sustainable; and local communities and their fishers are supported.

NSW DEPARTMENT OF **PRIMARY INDUSTRIES**

## What are the primary species?

**WILD HARVEST FISHERIES PRODUCTION IN NSW (05/06)**

| Species | Tonnes |
|---|---|
| Other fish | 19 914 |
| Prawns | 1615 |
| Rock lobster | 100 |
| Abalone | 129 |
| Other crustaceans & molluscs | 1791 |

**AQUACULTURE PRODUCTION IN NSW (05/06)**

| Species | Tonnes |
|---|---|
| Edible oysters | 4 267 |
| Trout | 196 |
| Silver perch | 301 |
| Prawns | 241 |
| Other | 207 |

The production in NSW of wild harvest commercial fisheries and aquaculture in 2005/06 totalled 28 861 tonnes.

## How much is this seafood worth?

**VALUE OF FISH & AQUACULTURE PRODUCTS NSW (05/06)**

| Species | Value |
|---|---|
| Other marine fish | $70.8 million |
| Oysters | $34.1 million |
| Prawns | $20.7 million |
| Abalone | $5.4 million |
| Other | $23.2 million |
| TOTAL | $154.2 million |

## How is wild harvest commercial fishing managed in NSW?

The NSW commercial fisheries are carefully managed by NSW Department of Primary Industries (NSW DPI), in partnership with commercial fishers. The resource is shared amongst over 1000 commercial fishers who catch fish for the whole community to eat and enjoy. The industry has recognised the challenges in making fisheries sustainable and has led many of the changes introduced to improve environmental performance, such as the completion of detailed environmental assessments for the major commercial fisheries in NSW.

Today, the NSW industry uses world-leading bycatch reduction devices and operates under stringent controls regarding fishing times, seasons and gear. The industry is constantly striving to improve its environmental performance and contributes millions of dollars each year to research and compliance programs.

## How are the NSW commercial fisheries categorised?

Fisheries agencies throughout Australia have traditionally categorised fishery resources into distinct segments for ease of management. This is particularly necessary in NSW because of the large variety of commercial species taken for sale, and the range of fishing gear used. Commercial fisheries have historically been defined by the method of capture (e.g. prawn trawl and fish trap); however, some fisheries with one target species are defined by the species itself (e.g. the lobster fishery).

Once each fishery is defined, policies and legislation can be developed to establish specific rules. These rules may then be included in a management plan for each fishery. Developing a fishery management plan involves extensive consultation with the commercial sector, the recreational sector and the community.

**NSW fisheries:**

- Abalone Fishery - Abalone is commercially harvested from rocky reefs by licenced divers.

- Estuary General Fishery - This fishery operates in 76 of the estuarine systems in NSW, and uses a variety of fishing gear including nets and traps. Over 80% of the catch is made up of sea mullet, luderick, yellowfin bream, school prawn, blue swimmer crab, dusky flathead, sand whiting, pipi, mud crab and silver biddy.

- Estuary Prawn Trawl Fishery - The Estuary Prawn Trawl Fishery uses prawn trawl nets to catch mostly school prawns in the Clarence,

Hawkesbury and Hunter rivers. Squid is also an important species for some Hawkesbury River fishers.

- Lobster Fishery - Eastern rock lobster is the main species harvested, but occasionally, southern rock lobster and tropical rock lobster are also caught. Fishers use traps to catch the lobsters.

- Ocean Hauling Fishery - This fishery targets around 20 finfish species including sardines (also known as pilchards), sea mullet, Australian salmon, blue mackerel, yellowtail scad and yellowfin bream.

- Ocean Trawl Fishery - There are two sectors in this fishery: prawn and fish trawl. Both use trawl nets (although the nets are quite different) and the major species caught include school whiting, eastern king, school and royal red prawns, tiger flathead, silver trevally, various species of sharks and rays, squid, octopus and bugs.

- Ocean Trap and Line Fishery - This fishery uses a variety of traps or lines with hooks. The methods used (and the key species taken by each method) include: fish trap (snapper, silver trevally, grey morwong and leatherjackets); setlines (snapper and sharks); driftlines (spotted and Spanish mackerel, yellowtail kingfish, and sharks); hand-held lines (mulloway, yellowtail kingfish and bonito); droplines (blue-eye trevalla and hapuku); leadlining (yellowtail kingfish, mackerel and tuna); and spanner crab traps, known as 'dillies'.

- Inland Restricted Fishery - This is a small commercial fishery that operates primarily in the waters of the Murray-Darling, targeting carp and yabby only.

- Sea Urchin and Turban Shell Restricted Fishery - Sea urchins are the main target species in this fishery with small quantities of turban shell landed at times.

More information on these fisheries can be found at http://www.dpi.nsw.gov.au/fisheries/commercial/fisheries

## What are the main controls used to regulate commercial fishing?

There are two broad types of fishery management tools - input controls and output controls.

**Input controls** limit the amount of effort commercial fishers put into their fishing activities, indirectly controlling the amount of catch. Input controls can include restrictions on the number of licences, the size and engine capacity of boats, the length and mesh size of nets, and the areas and times which can be worked. At some locations, commercial fishers are not permitted to work during weekends or public holidays.

A good example of how input controls work is the juvenile king prawn closure near the mouth of the Richmond River at Ballina. King prawns live in the estuaries as juveniles and migrate to the ocean during the young adult stage of their life cycle. This makes them vulnerable to capture at a small size by prawn trawlers. To protect the stocks of smaller prawns and to increase the value of the prawns sold, prawn boats are prohibited from trawling within an area bounded by a 2.2 nautical mile radius from the mouth of the Richmond River. This management measure also helps to reduce the capture of juvenile fish in prawn trawl nets.

**Output controls**, on the other hand, directly limit the amount of fish which can be taken from the water. The first step in implementing an output control management regime is setting a Total Allowable Catch (TAC) for the species. Once established, the TAC can be either fished on a competitive basis or divided up between the participants in the fishery so that all fishers have an individual quota. A TAC which is divided between the participants means that in any one year a commercial fisher is not able to catch more than their allocated weight of that species.

Output controls are generally regarded as good mechanisms to control the total catch in single species, high value fisheries which are targeted using a single gear type (such as abalone and lobster). However, thorough monitoring schemes such as daily catch logbooks are often required to ensure that individual quotas are not exceeded.

## How do we ensure wild harvest fishing is sustainable?

Fisheries resources must be managed to ensure that stocks are harvested at sustainable levels for the benefit of present and future generations. The fisheries resources of New South Wales are diverse, and many different species are highly regarded by recreational fishers for sport and food; by the commercial sector for their monetary value; and by consumers as fresh, quality seafood.

NSW Department of Primary Industries has the responsibility to manage fish stocks on behalf of the community. The department undertakes ongoing scientific research and monitoring programs to ensure sustainable management of the resource.

In the past, many in the community thought that as the commercial fishing sector catches a large quantity of fish, it needs to be heavily regulated. While this is certainly the case in some circumstances, there is also an increasing recognition that the estimated one million

recreational fishers in NSW also have a significant impact on our fisheries resources. Therefore, NSW DPI also manages the recreational sector.

Each of the commercial fisheries in NSW has undergone a world-class environmental assessment, which looks at the environmental impacts of the fishing activities. The environmental impact statement considers the impact of fishing on the targeted and bycatch species, important fish habitats, the broader ecosystem, and economic and social issues. It also considers the impact on the resource from other fishing activities and other non-fishing activities. Based on this assessment, fisheries management plans have been developed for the commercial fisheries to ensure that harvesting is sustainable.

Fisheries officers are employed by NSW DPI to patrol waterways to ensure commercial and recreational fishers are licenced and are following the rules.

## How do we know fishers are following the rules?

Effective fisheries management needs industry and community cooperation and compliance, education, and active enforcement of the rules. Anglers, commercial fishers and the community need to understand the reasons for, and adhere to, fisheries policies, legislation, regulations and management plans to ensure the resource is harvested at sustainable rates.

NSW DPI has 94 fisheries officer positions across the state, targeting both commercial and recreational fishers to maximise voluntary compliance by education and enforce fishing rules. High value fisheries like abalone and lobster are a particular focus, with fisheries officers regularly working with NSW Police Force in compliance operations.

## What is bycatch?

The term bycatch commonly refers to the part of a fisher's catch that is not the target species. Bycatch includes those fish captured by fishers (both commercial and recreational) that are undersized, prohibited, inedible or unsaleable. Different parts of the bycatch are sometimes called trash, discard and incidental catch.

Major issues in relation to bycatch are the direct impact on the mortality of bycatch species from some fishing techniques; the impact on ecological processes of discarding bycatch at sea; and the cost to industry when bycatch consists of juveniles of commercially important species, in addition to the cost of catching fish with no commercial value.

## When does bycatch occur?

Most recreational and commercial fishing techniques result in bycatch. For example, rod and line or handline methods, commonly used by both commercial and recreational fishers, capture a range of fish, some of which have no particular value to the fisher.

## How can bycatch be reduced?

Bycatch reduction devices have been used voluntarily by commercial fishers for many years and are now compulsory in all ocean and estuary prawn trawl nets. One of the most common modifications has been the use of square-mesh panels in codends. Put simply, they consist of a panel of square-shaped mesh positioned in the upper side of the codend and work by exploiting the behavioural differences between prawns and fish. As the fish are herded together, they try to escape by heading towards the top and sides of the codend and can escape through the open square-shaped meshes. By contrast, prawns have a limited reaction to the trawl and tumble along the bottom of the net into the codend.

The size of square-mesh used in the panel directly determines the size of fish that are allowed to escape. Studies in the oceanic prawn trawl fishery have shown that codends with relatively small panels of square-mesh were effective in removing up to 40% of the total unwanted bycatch. Square-mesh panels have also been used in estuaries to exclude species such as mulloway and catfish. In the Hawkesbury River, square-mesh panels were effective in reducing the numbers of these fish by up to 40% and 50% respectively.

Fishers who seek to remove larger organisms from their trawls may use a separator panel, such as a solid metal or plastic grid located in the codend. In several experiments in the Clarence River, this device removed up to 90% of the total bycatch, and up to 67% of juveniles of commercially important species, with no significant reduction in prawns.

## How are threatened and other special marine species protected?

In NSW, the responsibility for aquatic biodiversity is divided between NSW Department of Primary Industries and the NSW Department of Environment and Climate Change (DECC).

NSW DPI is responsible for all species of fish and marine vegetation. Fish include sharks and rays, aquatic invertebrate animals, such as worms, snails, mussels, corals, sponges, sea urchins, barnacles, crabs, crayfish, aquatic insects and prawns. Marine vegetation includes all seaweeds, seagrasses and marine algae.

Other types of animals, including whales, dolphins, seals and waterbirds, and plants, including freshwater plants, are the responsibility of DECC. The responsibility for threatened species and their management is shared between NSW DPI and DECC.

In NSW, all seahorses, seadragons, pipefish, pipehorses, seamoths, Ballina angelfish, Bluefish, Eastern blue devil fish, Elegant wrasse, Estuary cod, Giant Queensland groper, Herbsts nurse shark and Weedy seadragon are protected. Commercial and recreational fishers play a vital role in ensuring the protection and management of these species by ensuring sightings are reported and rules adhered to.

## How are we protecting marine habitat in NSW?

Fisheries management will only be effective in the long term if fish habitats are protected. The increasing coastal population of NSW has resulted in increased land and water pollution, and greater pressure for coastal development. Much of the increased pressure affects areas near the edges of estuaries and bays, both of which are vital for the survival of juvenile fishes and crustaceans. Under the Fisheries Management Act 1994, NSW DPI has a role in advising whether various developments should proceed.

NSW DPI is also at the forefront of aquatic habitat restoration. NSW DPI plays a lead role in rehabilitating fish habitat and native fish populations in NSW through the aquatic habitat rehabilitation program and the formation of strategic partnerships. Key ways to improve fish habitat are to restore instream woody habitat ("re-snagging"); restore riparian areas by removing weeds, replanting with native plants and fencing; and improve fish passage by installing fishways, making road crossings more fish friendly, removing weirs and actively managing floodgates. In estuarine environments, programs to ensuring the health of mangrove wetlands and seagrass beds are vital. NSW DPI works with landholders and local councils to restore and protect fish habitat for the future of the resource.

## How are research, habitat and management programs funded?

Fees and charges paid by commercial fishers provide a substantial amount of the revenue to finance fisheries research, habitat and management programs. Fees paid by recreational fishers also assist in these programs.

Disclaimer: The information contained in this publication is based on knowledge and understanding at the time of writing (August 2008). However, because of advances in knowledge, users are reminded of the need to ensure that information upon which they rely is up to date and to check currency of the information with the appropriate officer of New South Wales Department of Primary Industries or the user's independent adviser.

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