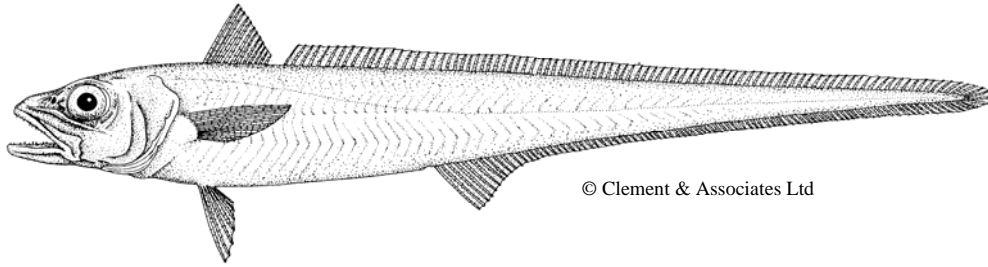


New Zealand Hoki: Management and Sustainability



Hoki (*Macrurus novaezelandiae*)

Hoki are managed under the Quota Management System (QMS) within the New Zealand Exclusive Economic Zone (EEZ). The management target is to maintain stocks at or above a level that will support the Maximum Sustainable Yield (B_{MSY}). For hoki, this has been set at 30-40% of the stock size that would be expected in the absence of fishing (i.e. B_0). There are two separate hoki stocks, the eastern and western stocks, and separate stock assessments are performed for each. The two hoki fisheries have separate catch limits under an overall hoki Total Allowable Commercial Catch (TACC). The QMS, introduced in 1986, allocated the TACC to fishing companies on a proportional basis, in perpetuity. Ownership of quota has resulted in the adoption of a custodial approach to the utilisation of fishery resources in New Zealand and to an active involvement by Industry in the sustainable management of these resources. Quota owners support current management.

Research

Sustainable management of New Zealand's hoki fisheries is supported by a large ongoing investment in research. Commercial stakeholders annually invest about €3.8 million on research into middle-depth species, the bulk of it on hoki research, which includes fishery-independent biomass surveys and a stock assessment every year. The TACC, and the east and west catch limits, are reviewed annually based on information from the stock assessments.

Stock Assessment

Hoki stock management is based on the best available independent science. Stock assessment reviews are undertaken by New Zealand scientists, often in collaboration with international scientists from USA and Canada. The stock assessment process is public, transparent and subject to peer review. The Ministry of Fisheries publishes the outcomes of stock assessments every year and summaries are available on its web site (<http://www.fish.govt.nz/en-nz/SOF/Species.htm?code=HOK&list=name>).

Status of the eastern stock

This stock is currently estimated to be above the B_{MSY} target, at between 37% and 51% of B_0 , and recent recruitment is estimated to be close to the long-term average. The catch limit for the eastern stock has been increased from 60,000 tonnes to 65,000 tonnes for the 2007-08 fishing year.

Status of the western stock

This stock is currently estimated to be between 15% and 24% of B_0 and below the B_{MSY} target. This stock experienced an extended period of very low recruitment from 1995 to

2001, driven by environmental conditions (warm winter temperatures). There is some evidence of improved recruitment in recent years (2001 to 2005).

Model projections estimate that the stock biomass will only slowly increase unless recruitment improves or catches are reduced. The management response has been to reduce the western stock catch limit from 40,000 tonnes to 25,000 tonnes for the 2007-08 year, to provide for stock rebuild in the event that recruitment remains at low levels.

Stock rebuilding

Hoki is a reasonably fast growing, medium-lived species. Juveniles reach about 27-35 cm at the end of their first year. Spawning commences at a length of 60-70 cm at 3-5 years of age. Males and females grow to lengths of about 115 cm and 130 cm respectively (up to 7 kg in weight) and live for around 20-25 years. The fishery targets hoki at sizes of 60 cm and above. Given its productivity and the reduced catch limit of 25,000 tonnes or below, the western stock is poised to rebuild to the B_{MSY} target. A return of environmental conditions favouring average recruitment levels will significantly enhance the rate of rebuild.

Operational Procedures for the hoki fisheries, agreed between the Industry and the Ministry of Fisheries, have closed the main spawning areas for the eastern and western stocks (Cook Strait and Hokitika Canyon) during part of the spawning season to enhance the prospects of spawning success. The main nursery grounds for juvenile hoki have been delineated and are closed to trawlers targeting hoki. Vessels may target other species in those areas, subject to a "move-on" rule should juveniles in the hoki by-catch component comprise more than 10% by number. The spawning area closures, any fishing activities within the nursery areas, and catches taken from the eastern and western sub-areas, are monitored by the Industry through the Deepwater Group Limited (DWG).

Mitigating the effects of hoki fishing on the environment

Hoki fishing is subject to agreed Operational Procedures to minimise incidental captures of marine mammals and seabirds. These include the deployment of mitigation devices (e.g. bird bafflers and Tori lines) and other measures (e.g. management of offal discards) to reduce interactions with seabirds.

While some of the hoki catch is taken in the mid-water, most is taken by bottom trawling and on flat ground comprised of soft sediments. The hoki fishery does not overlap areas with sensitive benthic communities, such as corals, and the impact of fishing on the soft seabed is currently under assessment. Trawl gear is rigged to ensure as little contact with the seabed as possible to reduce drag and to optimise fuel consumption.

Over 32% of the New Zealand EEZ is closed to bottom trawling, including areas of hoki habitat. The vast majority of this area was closed following a proposal by the fishing industry and is the largest single protection measure ever designated within a nation's EEZ.

Marine Stewardship Certification (MSC)

Both New Zealand hoki fisheries were certified as being managed sustainably under the MSC program in 2001 and they were re-certified in 2007. Two NGOs raised objections to the re-certification. After detailed and lengthy consideration, the independent review panel set these concerns aside as being either addressed in the management of this fishery or of having no merit.