

Seabird-safe longline fishing at Heard Island

Bullers and white-capped albatrosses fight over fish lost from a longline.

Australia manages a fishery in the waters around Heard Island and the McDonald Islands (HIMI) for the valuable Patagonian toothfish, which lives near the seabed 500–2500 m deep. Patagonian toothfish are usually caught in nets towed from trawlers, or by baited hooks attached to longlines set on the seabed. When the HIMI fishery commenced in 1997, longlining was banned because of its potential threat to the survival of seabirds.

In 2003, however, a scientific licence was granted to the Australian company Petuna Seafoods Ltd, of Devonport, Tasmania. This decision was based on an increased knowledge of the dynamics of the fishery from scientific observations made on trawl vessels since 1997, the need by industry to access deeper waters (trawling is usually limited to 800 m depth), and improved knowledge of measures to avoid seabird bycatch. The licence was granted under a provisional arrangement that required assessment of the possible impacts of fishing on the fishery and other components of the marine environment.

Petuna operate a single longline vessel in the fishery – the FV *Janas* – under a joint venture agreement with the vessel owners, Sealord Group, New Zealand. The licence agreement required that the *Janas* operate in a manner that would minimise the risks to seabirds. In the first year of fishing the requirements were:

- restriction of fishing to the period 1 May–31 August to

avoid the summer breeding season for seabirds, when risks increase;

- retention on board of fish offal and waste (the *Janas* converts offal into fish meal for subsequent sale);
- use of lines bearing streamers (trailed behind vessels to deter seabirds from baited hooks) during line setting operations;
- the setting of longlines only at night, when risks to many seabird species are reduced;
- the sinking of longlines at no less than 0.3 m/s to reduce the chances of fatal interactions with gear (achieved by attaching weights to longlines); and
- use of a curtain of streamer lines around the line hauling area of the vessel, to deter seabirds from attacking baited hooks during line hauling operations.

This combination of measures was the strictest for any legal longline vessel operating in waters managed through the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR). However, our aim is to take an adaptive approach to management whereby requirements can be relaxed, step-wise, if empirical or circumstantial evidence suggests change would be unlikely to increase risks to seabirds. It is also important that the vessel is not forced to use measures that are not required, especially if they are operationally difficult or reduce fishing efficiency. This approach provides for the continual assessment of risk to seabirds, the



These white-chinned petrels (*Procellaria aequinoctialis*) are the commonest seabird killed by longlines in the CCAMLR area and one of the most difficult species to deter worldwide.

Seabird-safe fishing measures are allowing longline vessels to fish for the lucrative Patagonian toothfish in the waters around Heard Island. This 2.1 m-long monster of the deep, shown beside a scientific observer, was caught by longline in 1700 m-deep water off southern Chile in December 2004. The fish is estimated to be at least 50 years old.



contribution of individual mitigation measures to total mitigation response and the performance of the vessel. It also creates incentives for industry without compromising conservation values.

In 2003 the *Janas* set 630 000 hooks and caught no seabirds. In 2004 the vessel set 2.2 million hooks and again caught no seabirds. Clearly, efforts to protect Heard Island seabirds were successful. This success was partly due to the low incidence of longline-vulnerable seabirds on the fishing grounds in winter and partly to the professional approach by the ship's crew to the use of conservation measures.

As part of the adaptive approach to management, changes have been made to the conservation measures. Prior to the 2004 season, the Threat Abatement Plan team approved the use of integrated weight (IW) longlines in the fishery. These lines sink fast, reducing the time available for seabirds to snatch baited hooks (see *Australian Antarctic Magazine* 5:14–15). They sink with a more even profile than normal lines with clip-on weights, increase fish catch rates and improve operational efficiency.

Other changes to the conservation measures, approved by Australia and CCAMLR and effective from May 2005, are the extension of the fishing season to 14 September and removal of the requirement for night time setting of longlines. This allows the setting of lines at any stage in the day/night cycle. While night setting is a proven seabird conservation measure,

the case for the change was supported by the success of experiments on the effectiveness of seabird-friendly techniques (IW longlines, streamer lines) conducted off southern New Zealand. These experiments occurred under conditions that presented a far higher risk to seabirds (in daylight hours during the seabird breeding season) than those that occur in the HIMI region.

Appropriate safeguards have been established. Licence conditions stipulate that during the two-week season extension, if three birds are caught, fishing must cease. Also, if three seabirds are caught during day setting operations the vessel must revert to night setting. With these changes there is scope for discretion by the fishing master. For example, if the number of longline-vulnerable seabirds in the vicinity of the vessel is judged to be high, or birds are thought likely to interact with gear, the onus is on the skipper to delay the onset of day setting until the situation improves.

It will be interesting to see how the vessel performs in the winter of 2005. Naturally we are hoping for a zero score card, not only in the interests of the conservation of Heard Island seabirds, but to be able to promote proven conservation practices to other fisheries in the southern hemisphere where longline-vulnerable seabirds occur.

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