



Australian Government

Department of Sustainability, Environment, Water, Population and Communities

Assessment of the
Macquarie Island Toothfish Fishery

March 2011

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This document is an assessment carried out by the Department of Sustainability, Environment, Water, Population and Communities of a commercial fishery against the Australian Government *Guidelines for the Ecologically Sustainable Management of Fisheries – 2nd Edition*. It forms part of the advice provided to the Minister for Sustainability, Environment, Water, Population and Communities on the fishery in relation to decisions under Parts 13 and 13A of the *Environment Protection and Biodiversity Conservation Act 1999*. The views expressed do not necessarily reflect those of the Minister for Sustainability, Environment, Water, Population and Communities or the Australian Government.

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Table 1: Summary of the Macquarie Island Toothfish Fishery.

Fishery description	<p>The Macquarie Island Toothfish Fishery harvests Patagonian toothfish, using demersal trawl and demersal longline fishing gear, in Commonwealth waters surrounding Macquarie Island. Macquarie Island is a sub-Antarctic island approximately 1500 kilometres south east of Tasmania.</p> <p>The number of vessels accessing the fishery at any one time is limited to three. The Fishery is managed by the Australian Fisheries Management Authority under Commonwealth fisheries legislation. It is managed consistently with the Convention on the Conservation of Antarctic Marine Living Resources (although the fishery is outside the area of application of the Commission for the Conservation of Antarctic Marine Living Resources [CCAMLR]¹).</p>
Publicly available information relevant to the fishery	<ul style="list-style-type: none"> • <i>Fisheries Management Act 1991</i> • <i>Fisheries Management Regulations 1992</i> • <i>Macquarie Island Toothfish Fishery Management Plan 2006</i> • Australian Bureau of Agricultural and Resource Economics – Bureau of Rural Sciences: <i>Fishery status reports 2009</i> • Australian Fisheries Management Authority: <i>Annual Status Report - Macquarie Island Toothfish Fishery – November 2010</i> • Australian Fisheries Management Authority: <i>Assessment of longline fishing in the Macquarie Island Toothfish Fishery – November 2010</i> • Australian Fisheries Management Authority: <i>Ecological risk management report for the Macquarie Island Toothfish Fishery demersal trawl sub-fishery - December 2009</i> • Australian Fisheries Management Authority: <i>Assessment Report – Macquarie Island Toothfish Fishery - November 2005</i> • Department of the Environment and Heritage: <i>Assessment of the Macquarie Island Toothfish Fishery - November 2005</i> • <i>Threat Abatement Plan for the incidental catch (or bycatch) of seabirds during oceanic longline fishing operations (1998)</i> • <i>Threat Abatement Plan 2006 for the incidental catch (or bycatch) of seabirds during oceanic longline fishing operations</i>
Area	<p>The Macquarie Island Toothfish Fishery operates in Commonwealth waters surrounding Macquarie Island; i.e. from three nautical miles to 200 nautical miles offshore.</p> <p>For management purposes the fishery is divided into two sectors - the Aurora Trough immediately to the west of Macquarie Island (the major trawl fishing zone) and the Macquarie Ridge, approximately 40 nautical miles to the north east.</p> <p>The area of the fishery includes the Macquarie Island Commonwealth Marine Reserve. Under the reserve's management arrangements, demersal trawling is not permitted within the reserve. Other commercial fishing activities within the reserve may only be undertaken in accordance with an individual approval issued by the Director of National Parks. No fishing is currently approved in the reserve.</p>

¹ See the Australian Fisheries Management Authority's 2010 submission for more information on the application of conservation measures adopted by CCAMLR

Target Species	<p>Patagonian toothfish (<i>Dissostichus eleginoides</i>).</p> <p>Patagonian toothfish are found in sub-Antarctic waters on shelves around islands and sub-marine banks. They are primarily bottom dwelling, in ocean depths of 300 to 2000 metres. They are slow to reach sexual maturity (at about ten years of age) and are believed to be long lived.</p> <p>Further information on the biology of this species can be found in the Department of the Environment and Heritage's <i>Assessment of the Macquarie Island Toothfish Fishery November 2005</i> located on the Department of Sustainability, Environment, Water, Population and Communities' website.</p>
Gear	<p>Demersal otter board trawl and demersal longlining. A demersal longline fishing trial was undertaken in the fishery from 2007 to 2010. The Australian Fisheries Management Authority proposes to introduce demersal longlining as a permitted fishing method under the fishery management plan from 15 April 2011.</p> <p>Demersal trawl nets used in the fishery are limited to a maximum mesh size of 120 millimetres to allow juveniles of the target species to escape the net.</p> <p>To avoid interactions with seabirds, a number of restrictions apply to the use of demersal longline gear in the fishery, including:</p> <ul style="list-style-type: none"> - mandatory use of integrated weight line (with an internal lead core rather than use of external weights) capable of achieving the CCAMLR standard sink rate of 0.2 metres per second (this is consistent with requirements imposed in Australia's other sub-Antarctic fishery, the Heard Island and McDonald Island Fishery)²; and - mandatory use of a "brickle curtain" (a vertical barrier of protective streamers, developed and used during the four year fishing trial) to discourage birds from accessing bait during longline hauls. <p>As a result of experience gained during the longline fishing trials, stronger integrated weight line has been adopted, reducing the potential for gear loss.</p>
Season	<p>The fishing season runs for twelve months commencing on 15 April each year³. However the demersal trawl fishery typically only operates for up to six weeks each year.</p> <p>The longlining season is restricted to the period between 1 May and 31 August each year.</p>
Fishery status	<p>Patagonian toothfish in the Macquarie Island Toothfish Fishery in 2009 was assessed by the Bureau of Rural Sciences⁴ as not overfished and not subject to overfishing (Patterson <i>et al</i> 2010).</p>

² CCAMLR management measures are informed by recommendations from its scientific committee. Seabird experts from the department's Australian Antarctic Division provide input to the scientific committee through Australia's representation as a member of CCAMLR.

³ Prior to 15 April 2010, the fishing season extended from 1 July to 30 June. The change allows for the annual total allowable catch to be set well in advance of the season commencing, by allowing the Australian Fisheries Management Authority more time to undertake and review the annual stock assessment for the fishery.

⁴ Now Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES)

Commercial harvest	<p>Since 2007, annual catches in the Aurora Trough sector have ranged from 66 tonnes to 307 tonnes and in the Macquarie Ridge sector from 139 to 146 tonnes.</p> <p>More information on catch trends is available in the Australian Fisheries Management Authority's <i>Annual Status Report - Macquarie Island Toothfish Fishery – November 2010</i>.</p>
Commercial licences issued	Up to three vessels operate in the fishery. In the 2007-08 and 2008-09 fishing seasons, only two vessels were active in the fishery.
Value of commercial harvest	To maintain operator confidentiality the Australian Fisheries Management Authority does not publish this information.
Take by other sectors	<p>Due to the remote location of the Macquarie Island Toothfish Fishery, there is no recreational or Indigenous sector in the fishery.</p> <p><i>New Zealand exclusive economic zone</i> Patagonian toothfish are taken in the New Zealand exclusive economic zone which adjoins the Macquarie Island Toothfish Fishery in the east. The Australian Fisheries Management Authority considers that Macquarie Island's Patagonian toothfish may be a shared or trans-boundary stock.</p> <p>Catches in the New Zealand exclusive economic zone over the past 15 years have been low, with a maximum of 20 tonnes taken per season. The New Zealand Government has set an annual total allowable catch of 50 tonnes of Patagonian toothfish from 1 October 2010.</p> <p>The Australian Government through the Department of Agriculture, Fisheries and Forestry liaises with the New Zealand Government on complementary management of shared fish stocks.</p> <p><i>Illegal, unreported and unregulated (IUU) fishing</i> Illegal, unreported and unregulated fishing is considered not to be an issue for management of Patagonian toothfish stocks in the Macquarie Island Toothfish Fishery. The Australian Fisheries Management Authority considers that the presence of a permanently staffed research station on Macquarie Island acts as a deterrent to possible IUU fishing.</p> <p>In addition, the catch disposal scheme for <i>Dissostichus sp.</i>, required for all CCAMLR members, has been implemented in the Macquarie Island Toothfish Fishery since 2000. The catch disposal scheme is designed to track landings and trade flows for all toothfish caught in the area of CCAMLR. It also assists in identifying trade in IUU catch of Patagonian toothfish.</p> <p>The Australian Fisheries Management Authority has indicated that should IUU activities become apparent, the estimated catch will be factored into the stock assessment consistent with the Heard Island and McDonald Island Fishery and other CCAMLR fisheries.</p>
Export	Patagonian toothfish are exported primarily to the United States of America, Japan and other parts of Asia.

Byproduct species	<p>To limit the potential for interactions with marine mammals and seabirds, the <i>Macquarie Island Toothfish Fishery Management Plan 2006</i> requires that all non-target species caught be retained, with the exception of species that:</p> <ul style="list-style-type: none"> • have a high chance of post-release survival; • do not attract seabirds or marine mammals; or • cannot be effectively processed. <p>A byproduct limit of 200 tonnes combined applies to all finfish species other than the target species, crab species and shark species, with a limit of 50 tonnes for any one species. If the limit is reached, the management arrangements dictate that the fishery would be closed for the remainder of the season.</p> <p>The Australian Fisheries Management Authority reports that to date a small number of non-target species have been encountered in the fishery, with the maximum annual total catch being 34 tonnes of which 31 tonnes was finfish. Patterson <i>et al</i> (2010) report that byproduct is comprised primarily of finfish such as grenadier and violet cod.</p>
Management arrangements	<p>The Macquarie Island Toothfish Fishery is managed by the Australian Fisheries Management Authority under the <i>Fisheries Management Act 1991</i>, <i>Fisheries Management Regulations 1992</i>, the <i>Macquarie Island Toothfish Fishery Management Plan 2006</i> and supporting legislative instruments.</p> <p>The Heard Island and McDonald Island Fishery, Australia's other sub-Antarctic fishery, and the Macquarie Island Toothfish Fishery are managed similarly and in accordance with the conservation measures adopted by CCAMLR.</p> <p>Total allowable catch</p> <p>For the purposes of managing the target species in fishery, the fishery is divided into two sectors - the Aurora Trough (the major trawl fishing zone) and the Macquarie Ridge. A total allowable catch for Patagonian toothfish for each sector of the fishery is set annually.</p> <p>Assessment of the Patagonian toothfish stock in the Aurora Trough is undertaken in accordance with the approach adopted by CCAMLR. A stock assessment is undertaken each year and an annual yield, meeting agreed biological reference points, is calculated. Further details on the process for setting the annual total allowable catch can be found in the Australian Fisheries Management Authority's <i>Annual Status Report Macquarie Island Toothfish Fishery – November 2010</i>.</p> <p>A precautionary total allowable catch is set for the developing Macquarie Ridge sector. Information collected from trial fishing in the Macquarie Ridge is being used to improve knowledge of the fishery's Patagonian toothfish stock. The Australian Fisheries Management Authority considers it likely that Patagonian toothfish around Macquarie Island constitute a single stock. The Australian Fisheries Management Authority has indicated that if this is confirmed, a single overall stock assessment and total allowable catch will be developed for the fishery as a whole.</p> <p>An overall limit on catch of byproduct species also applies - see <i>Byproduct species</i> section above.</p>

Bycatch

Bycatch not subject to the requirement to be retained includes sharks, jellyfish, sponges, crabs and coral.

Input controls help to minimise bycatch. These include:

- limiting the number of vessels accessing the fishery to three at any one time; and
- gear restrictions for trawl (bobbin [ground clearance gear] diameter and mesh size) and longline (integrated weight line).

Discharge of offal and other bycatch is prohibited to avoid incidental interactions with seabirds and mammals - the prohibition on the dumping of offal, which is applied to all Australian vessels operating in sub-Antarctic and Antarctic waters, was adopted in the Macquarie Island Toothfish Fishery.

Seabirds

Macquarie Island is considered particularly important to Antarctic seabird ecology. It provides the only breeding habitat in Australia for wandering albatross and grey-headed albatross. The wandering albatross is listed as vulnerable under the EPBC Act and the grey-headed albatross is listed as endangered. Macquarie Island is listed on the Register of Critical Habitat under the EPBC Act as critical habitat for these species.

Specific management measures addressing seabird bycatch

As well as the general measures described above, minimisation of lighting on fishing boats is required as darkness effectively conceals baited hooks from most foraging seabirds. High levels of vessel lighting may also temporarily blind seabirds, increasing the risk of them colliding with the boat.

The *Threat Abatement Plan 2006 for the incidental catch (or bycatch) of seabirds during oceanic longline fishing operations* includes objectives, actions and performance measures to address the threats to seabirds posed by longline fishing. The actions specified in the plan apply to longline fishing in all fisheries managed by the Australian Fisheries Management Authority.

Additional measures have been specified by the Australian Fisheries Management Authority to apply to the use of demersal longline gear in the Macquarie Island Toothfish Fishery; including:

- a limited longline fishing season, from 1 May to 31 August only;
- use of paired streamer lines to scare birds away from gear;
- use of a “brickle curtain” to discourage birds from accessing bait; and
- two full time observers on each fishing trip.

Performance criteria for seabird bycatch in longline fisheries

The threat abatement plan contains criteria to measure the performance of the plan in regards to levels of seabird bycatch. For Antarctic fisheries, the criterion is that seabird bycatch in all fishing areas is less than 0.01 birds per 1000 hooks set. The Australian Fisheries Management Authority has advised that this criterion will apply in the Macquarie Island Toothfish Fishery and will apply retrospectively over a season to the fishery as a whole.

	<p>Given the importance of Macquarie Island and its surrounds for seabirds, the Australian Fisheries Management Authority proposes to implement an additional trigger limit for a group of seabirds including:</p> <ul style="list-style-type: none"> - wandering albatross (listed as vulnerable under the EPBC Act); - black-browed albatross (vulnerable); - grey-headed albatross (endangered); - grey petrel (listed as migratory under the EPBC Act); and - soft-plumaged petrel (vulnerable). <p>If one seabird from this group of species was killed as a result of an interaction with the fishing gear then the vessel involved would be required to cease fishing in the fishery for the remainder of the season.</p> <p><i>Wandering albatross</i></p> <p>The breeding wandering albatross population at Macquarie Island is the smallest in the world. Five to ten pairs breed annually. Because of these low numbers, the loss of one individual could pose a serious risk to this population.</p> <p>In recognition of this, the two holders of statutory fishing rights in the fishery have proposed a voluntary arrangement whereby if a vessel interacts with a wandering albatross, all longline fishing vessels operated by that statutory fishing rights holder will immediately cease operations for the remainder of the fishing season.</p> <p>Ecological risk assessment/ ecological risk management</p> <p>The ecological risk assessment process used in the fishery was designed to assess and rank the ecological effects of fishing in Commonwealth fisheries. Details of the process can be found in the Australian Fisheries Management Authority's <i>Ecological risk management report for the Macquarie Island Toothfish fishery demersal trawl sub-fishery - December 2009</i>.</p> <p>The ecological risk assessment process for the demersal trawl sub-fishery of the Macquarie Island Toothfish Fishery analysed the effect of commercial fishing, based on the effects on all organisms (protected species, bycatch, byproduct and target species) that occur in the area of the fishery.</p> <p>The Australian Fisheries Management Authority's ecological risk management report concluded that there are no target, bycatch, byproduct or protected species considered to be at high risk from the effects of fishing in the demersal trawl sub-fishery given the suite of management and conservation initiatives that are in place for the fishery.</p> <p>The Australian Fisheries Management Authority has advised that the Commonwealth Scientific and Industrial Research Organisation has been engaged to undertake a Sustainability Assessment of Fishing Effects Level 3 risk assessment of the Macquarie Island Toothfish Fishery demersal longline sub-fishery. The report of this assessment is expected by June 2011.</p>
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	<p>Monitoring</p> <p>Two observers are deployed on all trips to the fishery to monitor compliance with management arrangements and collect environmental, ecological and fisheries data.</p>
Interaction with Protected Species⁵	<p>Details of management measures adopted in the fishery to avoid interactions with protected species are outlined in the Australian Fisheries Management Authority's 2010 submission. Key mitigation measures have been summarised earlier in this report in the <i>Management arrangements</i> section.</p> <p>No deaths of protected species as a result of interactions with fishing gear have been recorded since the fishery commenced in 1994. Consistent with the Australian Fisheries Management Authority's ecological risk management process, all protected species potentially at risk of interaction within the fishery are managed to minimise interactions and fatalities.</p> <p>The Australian Fisheries Management Authority's <i>Ecological risk management report for the Macquarie Island Toothfish fishery demersal trawl sub-fishery - December 2009</i> concludes that, given the suite of management and conservation initiatives that are in place for the demersal trawl fishery, no protected species were considered to be at high risk. An ecological risk management report for the demersal longline sub-fishery is expected to be available in mid 2011.</p> <p>Fishing in the Macquarie Island Toothfish Fishery operates in accordance with the requirements of relevant threat abatement plans and recovery plans under the EPBC Act, including:</p> <ul style="list-style-type: none"> • <i>Threat Abatement Plan 2006 for the incidental catch (or bycatch) of seabirds during oceanic longline fishing operations;</i> • <i>Recovery Plan for threatened Albatrosses and Giant Petrels;</i> and • <i>Sub-Antarctic Fur Seal and Southern Elephant Seal Recovery Plan.</i>
Ecosystem Impacts	<p>A range of management measures implemented by the Australian Fisheries Management Authority minimise the risk of fishing having a significant impact on ecosystems and their components. Most management measures were established to protect target species and their habitats, although some actions are specifically designed to protect the broader environment.</p> <p>As discussed above, the ecological risk management report concluded that there were no target, bycatch, byproduct or protected species considered to be at high risk from the effects of fishing in the demersal trawl sub-fishery. Also as discussed above, an ecological risk management report for the demersal longline sub-fishery is expected to be available in mid 2011.</p> <p>While habitats were not assessed in the ecological risk assessment for this fishery, the Australian Fisheries Management Authority notes that the Aurora Trough sector is the main trawl ground where the majority of the catch is taken. The sector covers a total of 130 square kilometres of a total fishery area of 476,000 square kilometres.</p>

⁵ 'Protected species' means all species listed under Part 13 of the EPBC Act, including whales and other cetaceans and threatened, marine and migratory species.

	<p>The Australian Fisheries Management Authority also notes that the Macquarie Island Marine Park, where demersal trawling is not permitted, comprises almost one third of the exclusive economic zone around Macquarie Island.</p> <p>The final report of the Fisheries Research and Development Corporation funded project <i>Demersal fishing interactions with marine benthos in the Australian EEZ in the southern ocean: an assessment of the vulnerability of benthic habitats to damage by demersal gears</i> is due in July 2011. The Australian Fisheries Management Authority advises that the report and the applicability of the project results to the Macquarie Island Toothfish Fishery will be discussed by the Sub-Antarctic Resource Assessment Group and the Sub-Antarctic Fisheries Management Advisory Committee (SouthMAC) later in 2011.</p> <p>Limited entry into the fishery, to a maximum of three vessels, is considered important to limit the amount of bycatch and the impact of fishing on benthic communities.</p> <p>The Macquarie Island region receives further buffering from any potential impacts from the fishery as a result of areas closed to fishing in the Macquarie Island Commonwealth Marine Reserve.</p> <p>The department considers that the fishery is conducted in a manner that minimises the impact of fishing operations on the ecosystem generally.</p>
World Heritage properties	<p>The Macquarie Island Toothfish Fishery operates from three nautical miles outside the Macquarie Island World Heritage Area.</p> <p>Under the EPBC Act, a person may not take an action that has, will have or is likely to have a significant impact on the World Heritage values of a declared World Heritage property.</p> <p>SouthMAC membership includes representatives from the department's Australian Antarctic Division which helps ensure the fishery operates in accordance with requirements of the <i>World Heritage Convention 1972</i>. For this reason, and taking into account management measures employed in the fishery, in particular, mitigation measures to avoid interactions with wildlife, the department considers that fishing activities in the Macquarie Island Toothfish Fishery in the next five years are unlikely to have a significant impact on the World Heritage values of the Macquarie Island World Heritage Area.</p>

Table 2: Progress in the implementing the recommendations from the 2005 assessment of the Macquarie Island Toothfish Fishery.

Recommendation	Progress	Recommended Action
<p>1. The Australian Fisheries Management Authority (AFMA) to advise the Department of the Environment and Heritage (DEH) of any material change to the Macquarie Island Toothfish Fishery management arrangements that could affect the criteria on which the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC) Act decisions are based, within 3 months of that change being made</p>	<p>The Australian Fisheries Management Authority has advised the Department of Sustainability, Environment, Water, Population and Communities of upcoming changes to the fishery management arrangements on each occasion.</p>	<p>The department considers that this recommendation has been met.</p> <p>The department recommends that this recommendation continues (see Recommendation 1, Table 4).</p>
<p>2. AFMA to identify and implement management responses to fishing impacts identified from the Ecological Risk Assessment (ERA) process, with the timeframe for implementation commensurate with the level of risk identified by the ERA or other relevant research on target, byproduct, bycatch or protected species interactions.</p>	<p>The Australian Fisheries Management Authority prepared an ecological risk management report for the demersal trawl sub-fishery of the Macquarie Island Toothfish fishery in December 2009. This report was based on:</p> <ul style="list-style-type: none"> • the results of the ecological risk assessment completed in September 2007; • a residual risk assessment completed in July 2009; and • a rapid Sustainability Assessment of Fishing Effects (SAFE) Level 3 risk assessment completed in July 2009. <p>The report concluded that, given the suite of management and conservation initiatives that are in place for the demersal trawl fishery, there were no target, bycatch, byproduct or protected species considered to be at high risk from the effects of fishing in the Macquarie Island Toothfish Fishery demersal trawl sub-fishery.</p> <p>The Australian Fisheries Management Authority has advised that the Commonwealth Scientific and Industrial Research Organisation has been engaged to undertake a Sustainability Assessment of Fishing Effects Level 3 assessment of the Macquarie Island Toothfish Fishery demersal longline sub-fishery. The report of this assessment is expected by June 2011.</p>	<p>The department considers that this recommendation has been met.</p>

Recommendation	Progress	Recommended Action
<p>3. AFMA to monitor interactions with protected species, in particular seabirds, to ensure that risk of interactions do not increase due to changes in the levels of effort, fishing capacity or methods such as additional boats entering the fishery or the use of longlines. In the event that risk levels increase or cumulative effects are detected then AFMA should develop and implement further mitigation measures as a matter of highest priority. In the event of an interaction occurring with a Critically Endangered species then additional mitigation measures should be immediately adopted to prevent further interactions.</p>	<p>The Australian Fisheries Management Authority's ecological risk management report indicates that two full time observers are deployed on all voyages in the fishery. Observers collect comprehensive information including on any wildlife interactions. The Australian Fisheries Management Authority's submission indicates that these results are monitored by the Sub-Antarctic Resource Assessment Group and the Sub-Antarctic Fisheries Management Advisory Committee (SouthMAC). SouthMAC membership includes the department's Australian Antarctic Division, which contributes scientific expertise on seabird ecology and best practice seabird bycatch mitigation.</p> <p>The department's 2005 assessment of the fishery identified that wandering albatross, black browed albatross, grey headed albatross and blue petrels were listed as Critically Endangered under IUCN⁶ criteria. The assessment noted that the populations of these seabirds at Macquarie Island were small. The assessment recommended that, in the event of an interaction occurring with a Critically Endangered species then additional mitigation measures should be immediately adopted to prevent further interactions.</p> <p>The Australian Fisheries Management Authority reports that there have been no interactions with protected species. The ecological risk management report indicates that any interaction with a protected species would be considered by the Sub-Antarctic Resource Assessment Group.</p>	<p>The department considers that this recommendation has been met.</p>
<p>4. AFMA to continue to pursue best practice in the mitigation of interactions with protected species by monitoring the effectiveness of mitigation measures, in all sectors, and implement where relevant, any new mitigation measures in the Macquarie Island Toothfish Fishery that may be developed in other fisheries.</p>	<p>In conjunction with trials of longline fishing undertaken in the fishery from 2007 to 2010, the Australian Fisheries Management Authority has implemented a suite of measures to avoid interactions with seabirds. These mitigation measures were developed in conjunction with seabird experts in the department's Australian Antarctic Division, and are considered best practice.</p>	<p>The department considers that this recommendation has been met.</p>

⁶ International Union for Conservation of Nature

Table 3: The Department of Sustainability, Environment, Water, Population and Communities' assessment of the Macquarie Island Toothfish Fishery against the requirements of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) related to decisions made under Parts 13 and 13A.

Please Note – the table below is not a complete or exact representation of the EPBC Act. It is intended as a summary of relevant sections and components of the EPBC Act to provide advice on the fishery in relation to decisions under Parts 13 and 13A. A complete version of the EPBC Act can be found on the department's website.

Part 13

Division 1 Listed threatened species Section 208A Minister may accredit plans or regimes	The department's assessment of the Macquarie Island Toothfish Fishery
<p>(1) Minister may, by instrument in writing, accredit for the purposes of this Division:</p> <p>(a) a plan of management within the meaning of section 17 of the <i>Fisheries Management Act 1991</i>;</p> <p>if satisfied that:</p> <p>(f) the plan, regime or policy requires persons engaged in fishing under the plan, regime or policy to take all reasonable steps to ensure that members of listed threatened species (other than conservation dependent species) are not killed or injured as a result of the fishing; and</p> <p>(g) the fishery to which the plan, regime or policy relates does not, or is not likely to, adversely affect the survival or recovery in nature of the species.</p>	<p>The Macquarie Island Toothfish Fishery will be managed according to the <i>Macquarie Island Toothfish Fishery Management Plan 2006</i> in force under the Commonwealth <i>Fisheries Management Act 1991</i> and the <i>Fisheries Management Regulations 1992</i>.</p> <p>The <i>Macquarie Island Toothfish Fishery Management Plan 2006</i> was previously accredited in March 2006. The department considers that the management plan still requires persons engaged in fishing under the plan to take all reasonable steps to ensure that members of listed threatened species (other than conservation dependent species) are not killed or injured as a result of the fishing.</p> <p>The Australian Fisheries Management Authority has proposed to introduce demersal longline fishing as a permitted fishing method under the plan from 15 April 2011. The following additional mitigation measures are to be adopted by all vessels engaged in longlining:</p> <ul style="list-style-type: none"> • limited longline fishing season from 1 May to 31 August; • night setting - setting can only occur during the hours of darkness between the times of nautical twilight; • integrated weight line – all longline vessels will be required to use integrated weight line which is capable of achieving the Convention on the Conservation of Antarctic Marine Living Resources standard sink rate (currently greater than 0.2 metres per second);

Division 1 Listed threatened species Section 208A Minister may accredit plans or regimes	The department's assessment of the Macquarie Island Toothfish Fishery
	<ul style="list-style-type: none"> • use of paired streamer lines (with specifications regarding type and dimensions of streamer line) to scare birds away from gear; • a 'brickle curtain' will be deployed to discourage birds from accessing baits during the haul of longlines; and • trigger limits and associated management responses, including the cessation of fishing in some circumstances. <p>Given the additional seabird bycatch mitigation measures employed in the fishery, the department considers that the current operation of the Macquarie Island Toothfish Fishery is not likely to adversely affect the survival or recovery in nature of any listed threatened species.</p>

Division 2 Migratory species Section 222A Minister may accredit plans or regimes	The department's assessment of the Macquarie Island Toothfish Fishery
<p>(1) Minister may, by instrument in writing, accredit for the purposes of this Division:</p> <p>(a) a plan of management within the meaning of section 17 of the <i>Fisheries Management Act 1991</i>;</p> <p>if satisfied that:</p> <p>(f) the plan, regime or policy requires persons engaged in fishing under the plan, regime or policy to take all reasonable steps to ensure that members of listed migratory species are not killed or injured as a result of the fishing; and</p> <p>(g) the fishery to which the plan, regime or policy relates does not, or is not likely to, adversely affect the conservation status of a listed migratory species or a population of that species.</p>	<p>The Macquarie Island Toothfish Fishery will be managed according to the <i>Macquarie Island Toothfish Fishery Management Plan 2006</i> in force under the <i>Commonwealth Fisheries Management Act 1991</i> and the <i>Fisheries Management Regulations 1992</i>.</p> <p>The <i>Macquarie Island Toothfish Fishery Management Plan 2006</i> was previously accredited in March 2006. The department considers that the management plan still requires persons engaged in fishing under the plan to take all reasonable steps to ensure that members of listed migratory species are not killed or injured as a result of the fishing.</p> <p>The Australian Fisheries Management Authority has proposed to introduce demersal longline fishing as a permitted fishing method under the plan from 15 April 2011. The following additional mitigation measures are to be adopted by all vessels engaged in longlining:</p> <ul style="list-style-type: none"> • limited longline fishing season from 1 May to 31 August; • night setting - setting can only occur during the hours of darkness between the times of nautical twilight; • integrated weight line – all longline vessels will be required to use integrated weight line which is capable of achieving the Convention on the Conservation of Antarctic Marine Living Resources standard sink rate (currently greater than 0.2 metres per second); • use of paired streamer lines (with specifications regarding type and dimensions of streamer line) to scare birds away from gear; • a 'brickle curtain' will be deployed to discourage birds from accessing baits during the haul of longlines; and • trigger limits and associated management responses, including the cessation of fishing in some circumstances.

Division 2 Migratory species Section 222A Minister may accredit plans or regimes	The department's assessment of the Macquarie Island Toothfish Fishery
	Given the additional seabird bycatch mitigation measures employed in the fishery, the department considers that the current operation of the Macquarie Island Toothfish Fishery is not likely to adversely affect the conservation status of a listed migratory species or a population of that species.

Division 3 Whales and other cetaceans Section 245 Minister may accredit plans or regimes	The department's assessment of the Macquarie Island Toothfish Fishery
<p>(1) Minister may, by instrument in writing, accredit for the purposes of this Division:</p> <p>(a) a plan of management within the meaning of section 17 of the <i>Fisheries Management Act 1991</i>;</p> <p>if satisfied that:</p> <p>(f) the plan, regime or policy requires persons engaged in fishing under the plan, regime or policy to take all reasonable steps to ensure that cetaceans are not killed or injured as a result of the fishing; and</p> <p>(g) the fishery to which the plan, regime or policy relates does not, or is not likely to, adversely affect the conservation status of a species of cetacean or a population of that species.</p>	<p>The Macquarie Island Toothfish Fishery will be managed according to the <i>Macquarie Island Toothfish Fishery Management Plan 2006</i> in force under the <i>Commonwealth Fisheries Management Act 1991</i> and the <i>Fisheries Management Regulations 1992</i>.</p> <p>The <i>Macquarie Island Toothfish Fishery Management Plan 2006</i> was previously accredited in March 2006. The department considers that the management plan still requires persons engaged in fishing under the plan to take all reasonable steps to prevent the killing or injuring of cetaceans.</p> <p>Given the mitigation measures employed in the fishery, the department considers the current operation of the Macquarie Island Toothfish Fishery is not likely to adversely affect the conservation status of a species of cetacean or a population of that species.</p>

Division 4 Listed marine species Section 265 Minister may accredit plans or regimes	The department's assessment of the Macquarie Island Toothfish Fishery
<p>(1) Minister may, by instrument in writing, accredit for the purposes of this Division:</p> <p>(a) a plan of management within the meaning of section 17 of the <i>Fisheries Management Act 1991</i>;</p> <p>if satisfied that:</p> <p>(f) the plan, regime or policy requires persons engaged in fishing under the plan, regime or policy to take all reasonable steps to ensure that members of listed marine species are not killed or injured as a result of the fishing; and</p> <p>(g) the fishery to which the plan, regime or policy relates does not, or is not likely to, adversely affect the conservation status of a listed marine species or a population of that species.</p>	<p>The Macquarie Island Toothfish Fishery will be managed according to the <i>Macquarie Island Toothfish Fishery Management Plan 2006</i> in force under the <i>Commonwealth Fisheries Management Act 1991</i> and the <i>Fisheries Management Regulations 1992</i>.</p> <p>The <i>Macquarie Island Toothfish Fishery Management Plan 2006</i> was previously accredited in March 2006. The department considers that the management plan still requires persons engaged in fishing under the plan to take all reasonable steps to prevent the killing or injuring of listed marine species.</p> <p>Given the mitigation measures employed in the fishery, the department considers the current operation of the Macquarie Island Toothfish Fishery is not likely to adversely affect the conservation status of a species of listed marine species or a population of that species.</p>

Part 13 (*cont.*)

Section 303AA Conditions relating to accreditation of plans, regimes and policies	The department's assessment of the Macquarie Island Toothfish Fishery
(1) This section applies to an accreditation of a plan, regime or policy under section 208A, 222A, 245 or 265.	The department recommends that the Macquarie Island Toothfish Fishery be accredited under sections 208A, 222A, 245 and 265.
<p>(2) The Minister may accredit a plan, regime or policy under that section even though he or she considers that the plan, regime or policy should be accredited only:</p> <ul style="list-style-type: none"> (a) during a particular period; or (b) while certain circumstances exist; or (c) while a certain condition is complied with. <p>In such a case, the instrument of accreditation is to specify the period, circumstances or condition.</p>	The department considers that no condition need be specified for the recommended accreditation of the Macquarie Island Toothfish Fishery to satisfy sections 208A, 222A, 245 and 265 under Part 13.
(7) The Minister must, in writing, revoke an accreditation if he or she is satisfied that a condition of the accreditation has been contravened.	

Part 13A

Section 303BA Objects of Part 13A

(1) The objects of this Part are as follows:

- (a) to ensure that Australia complies with its obligations under CITES⁷ and the Biodiversity Convention;
- (b) to protect wildlife that may be adversely affected by trade;
- (c) to promote the conservation of biodiversity in Australia and other countries;
- (d) to ensure that any commercial utilisation of Australian native wildlife for the purposes of export is managed in an ecologically sustainable way;
- (e) to promote the humane treatment of wildlife;
- (f) to ensure ethical conduct during any research associated with the utilisation of wildlife; and
- (g) to ensure the precautionary principle is taken into account in making decisions relating to the utilisation of wildlife.

Section 303DC Minister may amend list

(1) Minister may, by instrument in published in the Gazette, amend the list referred to in section 303DB (list of exempt native specimens) by:

- (a) including items in the list;
- (b) deleting items from the list; or
- (c) imposing a condition or restriction to which the inclusion of a specimen in the list is subject; or
- (d) varying or revoking a condition or restriction to which the inclusion of a specimen in the list is subject; or
- (e) correcting an inaccuracy or updating the name of a species.

⁷ Convention on International Trade in Endangered Species of Wild Fauna and Flora

Section 303DC Minister may amend list	The department's assessment of the Macquarie Island Toothfish Fishery
<p>(1A) In deciding whether to amend the list referred to in section 303DB (list of native specimens) to include a specimens derived from a commercial fishery, the Minister must rely primarily on the outcomes of any assessment in relation to the fishery carried out for the purposes of Division 1 or 2 of Part 10.</p>	<p>The Macquarie Island Toothfish Fishery was assessed under Part 10 of the EPBC Act in November 2005. As a result of that assessment, the department considered that actions taken under the management regime for the fishery would not have an unacceptable or unsustainable impact on the environment in a Commonwealth marine area.</p> <p>The Australian Fisheries Management Authority Commission at its meeting of 25-26 October 2010 recommended that demersal longline fishing become an approved fishing method in the Macquarie Island Toothfish Fishery.</p> <p>The department considers that the impacts of actions included in the Macquarie Island Toothfish Fishery:</p> <ul style="list-style-type: none"> • have; • will have; or • are likely to have <p>on a matter of national environmental significance are not significantly greater than the impacts identified in the previous assessment.</p>

Section 303DC Minister may amend list	The department's assessment of the Macquarie Island Toothfish Fishery
(1C) The above does not limit the matters that may be taken into account in deciding whether to amend the list referred to in section 303DB (list of exempt native specimens) to include a specimen derived from a commercial fishery.	<p>It is not possible to list exhaustively the factors that you may take into account in amending the list of exempt native specimens. The objects of Part 13A provide general guidance in determining factors that might be taken into account. A matter that is relevant to determining whether an amendment to the list is consistent with those objects is likely to be a relevant factor.</p> <p>The department considers that the amendment of the list of exempt native specimens to include product taken in the Macquarie Island Toothfish Fishery for five years would be consistent with the objectives of Part 13A, as:</p> <ul style="list-style-type: none"> • the fishery will not harvest any CITES listed species; • there are management arrangements in place to ensure that the resource is being managed in an ecologically sustainable way (see Table 1); • as a result of management arrangements in place for target, byproduct and bycatch species and the ecosystem generally, the operation of the Macquarie Island Toothfish Fishery for the next five years is unlikely to threaten biodiversity (see Table 1); and • the <i>Environment Protection and Biodiversity Conservation Regulations 2000</i> do not specify fish as a class of animal in relation to the welfare of live specimens.
(3) Before amending the list referred to in section 303DB (list of exempt native specimens), the Minister: <ul style="list-style-type: none"> (a) must consult such other Minister or Ministers as the Minister considers appropriate; and (b) must consult such other Minister or Ministers of each State and self-governing Territory as the Minister considers appropriate; and (c) may consult such other persons and organisations as the Minister considers appropriate. 	The department considers that the consultation requirements have been met. The Australian Fisheries Management Authority was consulted as part of the assessment process. The public comment period on the Australian Fisheries Management Authority submission sought comment on the submission for the Macquarie Island Toothfish Fishery and provided sufficient opportunity for consultation with other persons and organisations. The submission was released for public comment from 23 December 2010 to 28 January 2011. Three public comments were received.
(5) A copy of an instrument made under section 303DC is to be made available for inspection on the Internet.	The instrument for the Macquarie Island Toothfish Fishery made under section 303DC will be gazetted and made available on the department's website.

Part 16

Section 391 Minister must consider precautionary principle in making decisions	The department's assessment of the Macquarie Island Toothfish Fishery
(1) The Minister must take account of the precautionary principle in making a decision under section 303DC and/or section 303FN, to the extent he or she can do so consistently with the other provisions of this Act.	The department has taken account of the precautionary principle in preparing its advice to you in relation to amendment of the list of exempt native specimens under section 303DC.
(2) The precautionary principle is that lack of full scientific certainty should not be used as a reason for postponing a measure to prevent degradation of the environment where there are threats of serious or irreversible environmental damage.	

**The Department of Sustainability, Environment, Water, Population and
Communities' final recommendations to the Australian Fisheries Management
Authority for the Macquarie Island Toothfish Fishery**

The material submitted by the Australian Fisheries Management Authority indicates that the Macquarie Island Toothfish Fishery operates in accordance with the Australian Government *Guidelines for the Ecologically Sustainable Management of Fisheries - 2nd edition*.

Entry to the fishery is limited and subject to minimum quota holdings. The *Macquarie Island Toothfish Fishery Management Plan 2006* requires the setting of an annual total allowable catch in the fishery. The total allowable catch is based on annual stock assessments, using a process consistent with the approach adopted by the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR). The department considers that the range of management measures are sufficient to ensure that the fishery is conducted in a manner that does not lead to over-fishing and that stocks are not currently overfished.

Taking into account management measures including:

- limited entry;
- gear restrictions;
- implementation of an ecological risk assessment/ecological risk management process;
- a suite of measures designed to avoid interactions with non-target species, including specific seabird bycatch mitigation measures; and
- comprehensive compliance and monitoring arrangements,

the department considers that fishing operations are managed to minimise their impact on the structure, productivity, function and biological diversity of the ecosystem.

The department believes that product taken in the fishery should be exempt from the export controls of Part 13A of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), with that exemption to be reviewed in 5 years. To contain and minimise the risks in the longer term the recommendations listed in Table 4 have been made. Unless a specific time frame is provided in the recommendation each recommendation should be addressed during the five year period.

Part 13 (protected species)

The *Macquarie Island Toothfish Fishery Management Plan 2006* was first accredited under Part 13 of the EPBC Act in March 2006. At that time, demersal otter trawling was the only permitted gear type in the fishery. The Australian Fisheries Management Authority proposes to introduce demersal longline fishing as an approved fishing method under the plan from 15 April 2011.

A longline fishing trial was conducted in the Macquarie Island Toothfish Fishery from 2007 to 2010. Under the range of mitigation measures employed in the trial, no wildlife interactions were reported.

Given the management measures applying to the introduction of longlining as an approved fishing method under the *Macquarie Island Toothfish Fishery Management Plan 2006*, the department considers it unlikely that fishing operations conducted in accordance with the plan will adversely affect the conservation status of protected species, or affect the survival and recovery of listed threatened species. The department also considers that under the plan, operators are required to take all reasonable steps to avoid the killing or injuring of protected species.

The department therefore believes it appropriate to reaccredit *Macquarie Island Toothfish Fishery Management Plan 2006* under Part 13 of the EPBC Act.

Table 4: Macquarie Island Toothfish Fishery Assessment – Summary of Issues and Recommendations, March 2011

ISSUE	RECOMMENDATION
<p><u>General Management</u></p> <p>Export decisions relate to the arrangements in force at the time of the decision. To ensure that these decisions remain valid and export approval continues uninterrupted, the Department of Sustainability, Environment, Water, Population and Communities needs to be advised of any changes that are made to the management regime and make an assessment that the new arrangements are equivalent or better, in terms of ecological sustainability, than those in place at the time of the original decision. This includes operational and legislated amendments that may affect sustainability of the target species or negatively impact on byproduct, bycatch, protected species or the ecosystem.</p>	<p>Recommendation 1:</p> <p>Operation of the fishery will be carried out in accordance with the management regime in force under the <i>Fisheries Management Act 1991</i> and the <i>Fisheries Management Regulations 1992</i>.</p> <p>Recommendation 2:</p> <p>The Australian Fisheries Management Authority to inform the Department of Sustainability, Environment, Water, Population and Communities of any intended amendments to Macquarie Island Toothfish Fishery management arrangements that may affect the assessment of the fishery against the criteria on which <i>Environment Protection and Biodiversity Conservation Act 1999</i> decisions are based.</p>
<p><u>Annual Reporting</u></p> <p>It is important that reports be produced and presented to the department annually in order for the performance of the fishery and progress in implementing the recommendations in this report and other managerial commitments to be monitored and assessed throughout the life of the declaration.</p> <p>Annual reports should include: a description of the fishery; management arrangements in place; research and monitoring outcomes; recent catch data for all sectors of the fishery; status of target stock; interactions with protected species; impacts of the fishery on the ecosystem in which it operates; and information outlining progress in implementing recommendations resulting from the previous assessment of the fishery (for a complete description of annual reporting requirements see Appendix B of the <i>Guidelines for the Ecologically Sustainable Management of Fisheries - 2nd Edition</i> available from the department's website at: http://www.environment.gov.au/coasts/fisheries/publications/guidelines.html.</p>	<p>Recommendation 3:</p> <p>The Australian Fisheries Management Authority to produce and present reports to the Department of Sustainability, Environment, Water, Population and Communities annually as per Appendix B to the <i>Guidelines for the Ecologically Sustainable Management of Fisheries - 2nd Edition</i>.</p>

References

Patterson, H, Wilson, D and Mazur K (2010) Macquarie Island Toothfish Fishery in Wilson DT, Curtotti, R and Begg, GA (eds) *Fishery status reports 2009: status of fish stocks and fisheries managed by the Australian Government*. Australian Bureau of Agricultural and Resource Economics – Bureau of Rural Sciences, Canberra.

Acronyms

AFMA	Australian Fisheries Management Authority
CCAMLR	Commission for the Conservation of Antarctic Marine Living Resources
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DEH	Department of the Environment and Heritage
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
IUU	Illegal, unregulated and unreported fishing
SouthMAC	Sub-Antarctic Fisheries Management Advisory Committee