Implementation of Australia's Threat Abatement Plan for the Incidental Catch of Seabirds During Oceanic Longline Fishing Operations

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ABSTRACT

This paper describes the development and implementation of Australia's key policy document to address the impact of longline bycatch of seabirds, the Threat Abatement Plan (TAP), since it was finalised in 1998. The implementation of the TAP has been reviewed and a revised draft TAP 2006 is expected to enter into force within the next few months.

Since the TAP came into effect significant progress has been made in mitigating seabird bycatch. Night-setting of longlines and the use of bird scaring lines is now mandatory in high risk areas, and development and trialing of new mitigation measures has been undertaken over the last three years. A number of fisheries have recorded incidental catch rates well below the maximum permissible rate of 0.05 birds per 1000 hooks. However, for some pelagic fisheries it has become clear that another approach is needed to assist fisheries to achieve the target. The revised TAP, rather than prescribing mandatory mitigation measures as before, sets the performance indicators for each fishery and requires fishery managers and the fishing industry to adopt 'proven mitigation measures' to achieve this. Failure to achieve the performance indicator will require the adoption of a defined management response to reduce bycatch to the specified level, and ultimately closure of all or part of a fishery if revised management approaches are not successful.

This information is provided to assist the Commission in the further development and implementation of bycatch mitigation measures.

BACKGROUND

The incidental catch (or bycatch) of seabirds during oceanic longline fishing operations was listed under Australian legislation as a key threatening process on 24 July 1995. A key threatening process is one which adversely affects a threatened species, or could cause a species to become endangered.

As required under this legislation, a *Threat Abatement Plan for the Incidental Catch (or By-catch) of Seabirds During Oceanic Longline Fishing Operations* was prepared and approved by the Minister for the Environment on 2 August 1998. The Threat Abatement Plan (TAP) expired in August 2003, necessitating a review. The provisions of the current TAP continue to apply to all fisheries managed by the Australian Government until such time as the new TAP is in place.

The attached *Threat Abatement Plan 2006* is a result of that review. It was prepared to meet the requirements of the Environment Protection and Biodiversity Conservation Act 1999 — EPBC Act and to coordinate national action to alleviate the impact of longline fishing activities on seabirds in Australian waters. It applies to all fisheries under Commonwealth jurisdiction.

The first TAP (TAP1) aimed to significantly reduce the by-catch of seabirds during oceanic longline operations in the Australian Fishing Zone within 5 years. It prescribed various modifications to fishing practices or equipment (mitigation measures) to minimise seabird bycatch. In particular, it prescribed mandatory measures for the setting of longlines south of latitude 30 degrees south, the principal measure being night-setting of lines. This reflected the knowledge at the time TAP1 was prepared that seabird bycatch in longline fishing was mainly a problem in southern Australian waters, and there was no need for mandatory mitigation measures to be applied to fishers operating north of latitude 30 degrees south. The performance indicator set by TAP1 to measure the success of the Plan was a maximum permissible bycatch rate that did not exceed 0.05 birds per 1000 hooks in any fishery.

Over the life of TAP1, substantial progress toward reducing the key threatening process was achieved. A number of fisheries recorded incidental catch rates well below 0.05 birds per 1000 hooks. However, it became apparent that some of the prescriptions in TAP1 were insufficient to achieve the performance indicator in pelagic tuna fisheries. Particular problems encountered were:

- Seabird bycatch in one fishery in particular, the Eastern Tuna and Billfish Fishery, extended further north than originally anticipated, to around 25 degrees south (north of Mooloolaba, Queensland);
- Whereas albatross species were once the principal species caught in the Australian Fishing Zone prior to 1998, changes in the distribution of fishing effort in eastern Australian waters had led to significant problems with bycatch of flesh-footed shearwaters in pelagic fisheries;
- Night-setting of longlines, although effective in substantially reducing bycatch of shearwaters, was not capable of reducing seabird bycatch to less than 0.05 birds per 1000 hooks when used in isolation of other mitigation measures;
- The use of prescriptive approaches to modify fishing gear to minimise bycatch led to inflexibility which did not permit rapid response to emerging problems. This was causing considerable difficulties for the Australian fisheries managers which ultimately had responsibility for implementing much of TAP1.

The prescriptions in the revised Plan recognise the substantial progress made and seek to further reduce the incidental capture of seabirds. However, this plan takes a different approach to managing seabird bycatch than that used in the first document. For most fisheries, rather than prescribing mandatory mitigation measures, it sets the performance indicators for each fishery and requires fishery managers and the fishing industry to adopt ‘proven mitigation measures’ to achieve this. Failure to achieve the performance indicators will require the adoption of a defined management response to reduce bycatch to the specified level. If adoption of further measures still fails to reduce bycatch to a satisfactory level, closure of all or part of a fishery is prescribed.

The revised plan acknowledges that the ultimate aim of the threat abatement process is to achieve a zero bycatch of seabirds in all longline fisheries. It also recognises that, using currently available mitigation methods, this goal is not realistic in the short term. The objective of this Plan is therefore to significantly reduce the bycatch of seabirds during oceanic longline operations in the Australian Fishing Zone at current fishing levels.

The Plan aims to achieve the objective through six key areas:— mitigation, data collection and analysis, education, international initiatives, research and development,

and recognition of innovation through individual accreditation of fishers where appropriate.

Implementation of the Threat Abatement Plan is managed through a TAP Team, which comprises represents from relevant State and Commonwealth Departments, the fishing industry and relevant conservation Non Government Organisations (NGOs). The TAP Team meets annually to review progress on the TAP, permitting regular consultation with all relevant stakeholders. The draft *Threat Abatement Plan 2006* is expected to enter into force within the next few months.

Attachment: Draft *Threat Abatement Plan 2006 for the Incidental Catch (or By-catch) of Seabirds During Oceanic Longline Fishing Operations*

THREAT ABATEMENT PLAN 2006
for the incidental catch (or bycatch) of seabirds during oceanic longline fishing operations

Background

Oceanic longline fishing is a technique used to target pelagic and demersal finfish and shark species. Longline fishing commenced in the southern oceans in the 1950's, and longline fisheries operate in almost all Australian waters today. The impact of longline fishing activities on seabirds was not fully realised until the 1980's when seabird bycatch was first reported and then documented.

The incidental catch (or bycatch) of seabirds during oceanic longline fishing operations was listed as a key threatening process on 24 July 1995. As required under Commonwealth legislation (now the Environment Protection and Biodiversity Conservation Act 1999 — EPBC Act), a *Threat Abatement Plan for the Incidental Catch (or By-catch) of Seabirds During Oceanic Longline Fishing Operations* was prepared and approved by the Minister for the Environment on 2 August 1998. The Threat Abatement Plan (TAP) expired in August 2003, necessitating a review under subsection 279(2) of the EPBC Act. The provisions of the current TAP continue to apply to all fisheries managed by the Australian Government until such time as the new TAP is in place.

This threat abatement plan (2005) is a result of that review. It was prepared to meet the requirements of the EPBC Act and to coordinate national action to alleviate the impact of longline fishing activities on seabirds in Australian waters. It applies to all fisheries under Commonwealth jurisdiction.

Over the life of the first plan, substantial progress toward reducing the key threatening process has been achieved. A number of fisheries recorded incidental catch rates well below 0.05 birds per 1000 hooks, the maximum permissible level set by the plan as a performance indicator. The draft prescriptions in this Plan recognise this success and seek to further reduce the incidental capture of seabirds.

Despite considerable effort involving trials of various weighting regimes and other mitigation measures in the Eastern Tuna and Billfish Fishery (ETBF), areas of this fishery recorded seabird bycatch levels that exceeded 0.05 birds per 1000 hooks. This occurred until 2004/2005, when it fell below 0.05 birds per 1000 hooks. However, bycatch in this fishery appears variable across years, and the 2004/2005 levels may not be indicative. The original prescription of allowing night setting throughout the year in isolation of other mitigation measures was not sufficiently effective for flesh-footed shearwaters in particular, although it dramatically reduced the capture of albatrosses.

To date industry has largely funded the costs of the trials, with the major cost being the provision of observer coverage. There has been minimal research and development funded by non-industry sources, despite the public interest in this issue and the need to develop a technological solution to the seabird bycatch problem.

Despite the substantial progress made in the first plan, further work is required to solve the problem of seabird bycatch in fisheries. Whereas albatross species were once the principal species caught in the Australian Fishing Zone (AFZ), changes in the distribution of fishing effort in eastern Australian waters have since led to significant problems with bycatch of flesh-footed shearwaters in pelagic fisheries operating in these waters, and a similar situation is likely to exist in western Australian waters.

Although there are a number of longline fisheries operating in the Australian Fishing Zone, only five have been identified as having significant or potential seabird bycatch problems. These are the Eastern Tuna and Billfish Fishery, the Western Tuna and Billfish Fishery, the Antarctic Longline Fishery, the Coral Sea Fishery and the Southern and Eastern Scalefish and Shark Fishery (Scalefish Hook Sector).

Information on the level and nature of interactions between seabirds and fishing gear is still incomplete in all domestic pelagic tuna fisheries, the Coral Sea Fishery and the Southern and Eastern Scalefish and Shark Fishery (Scalefish Hook Sector). There are also longline fisheries for Patagonian toothfish in subantarctic waters with potential for seabird bycatch. Information on the level and nature of interactions between seabirds and fishing gear in these fisheries is extensive and well-documented.

Detailed background information on the key threatening process, the Australian longline fisheries that impact upon seabirds, and the species of seabirds impacted by longline fishing can be found at http://www.aad.gov.au/default.asp?casid=20587

This Plan is closely linked to recovery plans for threatened seabirds which are caught on longlines and Australia's NPOA-Seabirds prepared to meet Australia's commitment to the *FAO International Plan of Action for Reducing the Incidental Catch of Seabirds in Longline Fisheries*. The Threat Abatement Plan relies on these recovery plans to collect specific data on population trends in the breeding populations of those threatened species found breeding in Australia. Of particular relevance is the *Recovery plan for Albatrosses and Giant-Petrels* which can be found at http://www.deh.gov.au/biodiversity/threatened/publications/recovery/albatross/index.html

This Plan represents Australia's domestic contribution to the global conservation of seabirds by managing the threat from longline fishing by-catch. However, conservation of migratory seabird species relies on more than Australian action. Mitigation strategies such as those outlined in the plan should be pursued in international waters and the Exclusive Economic Zones of other Southern Hemisphere nations. The Australian Government is actively pursuing such action through the *Agreement on the Conservation of Albatrosses and Petrels*, an international Agreement that aims to achieve and maintain a favourable conservation status for albatrosses and petrels. ACAP has been developed under the auspices of another international Agreement, the *Convention on the Conservation of Migratory Species of Wild Animals* (CMS).

The following sets out the Threat Abatement Plan for this key threatening process.

Objective: (EPBC Act 271(2)(a)

The ultimate aim of the threat abatement process is to achieve a zero bycatch of seabirds, especially threatened albatross and petrel species, in all longline fisheries. However, using currently available mitigation methods, this goal is not realistic in the short term.

Therefore the objective of this Plan is to significantly reduce the bycatch of seabirds during oceanic longline operations in the Australian Fishing Zone at current fishing levels.

As many seabird species have large distributional ranges actions by the Australian fishing industry alone may not be sufficient to prevent any decline in some populations. Hence Australian government agencies will pursue the global adoption of by-catch mitigation strategies through international conservation and fisheries management fora.

The TAP objectives are to be achieved through six key areas:

1. Mitigation — Effective measures will be put in place, both through legislative frameworks and fishing practices, to ensure the rate of seabird bycatch is continually reduced.
2. Data collection and analysis — Data will be collected and analysed to assess the performance of mitigation measures and to improve knowledge of seabird–longline interactions.
3. Education — Results from data analysis will be communicated throughout the community, stakeholder groups and international forums, and programs will be established that provide information and education to longline operators.
4. International initiatives— global adoption of seabird by-catch mitigation targets and methods will be pursued through international conservation and fisheries management fora.
5. Research and Development — Research into new mitigation measures and their development, trialling and assessment will be supported through the granting of individual permits and the potential certification of new measures to apply throughout a fishery.
6. Innovation — Potential individual accreditation of longline operators who are able to demonstrate 'bird friendly' fishing practices will be supported.

Actions to Achieve the Objectives (EPBC Act 271(2)(c)

This Threat Abatement Plan requires that the government agencies identified below implement the following actions:

Mitigation

1. AFMA will require all pelagic longline tuna fishers operating within the Eastern Tuna and Billfish Fishery south of latitude 25^0 South to adopt one of two options:

   — a line-weighting strategy that enables the bait to be rapidly taken below the reach of most seabirds; or

   — set all hooks during the night.

   In both options vessels shall also employ at least one bird-scaring line constructed to a specified standard, not use bait that is still frozen and retain all offal during line setting.

2. AFMA will require all pelagic longline tuna fishers operating within the Western Tuna and Billfish Fishery south of latitude 30^0 South to set all hooks during the night. In addition vessels shall also employ at least one bird-scaring line constructed to a specified standard, not use bait that is still frozen and retain all offal during line setting.

3. AFMA will continue to require domestic and foreign longline vessels in all demersal fisheries operating within Australian jurisdiction to adopt proven mitigation measures that ensure the performance criteria for each fishery are achieved in all areas and seasons.

4. AFMA will implement an appropriate management response (described below) if data analysis indicates that the Criteria, defined elsewhere in this plan, have not been met in any area, season and fishery, or that observer coverage has dropped below acceptable levels.

Problem	Management Response within 3 months
Criterion for a longline fishery exceeded in an area during one season	AFMA will: 1. review mitigation currently deployed in area/season and the relevant circumstances — environmental conditions, fishing practices — within 1 month of the criteria being exceeded. 2. implement a revised mitigation regime to address bycatch problem within 3 months of the criteria being exceeded.
Criterion for a fishery exceeded in an area during one season within 12 months of introduction of new arrangements	3. AFMA will close the area/fishing season until the Minister for Environment and Heritage is satisfied that mitigation methods are available for implementation to enable the Criteria to be achieved. In areas where there are less than 3 operators, consideration will be given to limiting closure of an area/ fishing season to individual vessels.
Observer coverage of a fishery in an area and/or season does not meet coverage levels in Action 5 (below).	4. AFMA will increase observer levels to meet specified levels.

Data Collection and Analysis

5. AFMA will collect data on the bycatch of seabirds on longline vessels using observer programs. The level of observer effort shall be commensurate with the nature and level of bycatch in each area, season and fishery and shall be in accordance with the guidelines below:
   - ETBF and WTBF 5% of all hooks set and hauled in all areas;
   - SESSF 10% of all hooks set and hauled;
   - Coral Sea Fishery 10% of all hooks set and hauled;
   - Antarctic Fisheries 20% of all hooks set and 40% of all hooks hauled.

6. AFMA will continue to require that all seabirds killed on pelagic or demersal longlines in the AFZ are:
   - brought aboard the vessel;
   - reported to AFMA;
   - reported to the Australian Bird and Bat Banding Schemes if banded;
   - collected for scientific analysis and stored on board the vessel in manner which will limit decay of the specimen and meet AQIS requirements; and
   - transported to a storage and analysis facility nominated by DEH.

DEH will provide seabird collection kits to facilitate appropriate handling of dead seabirds in preparation for analysis.

DEH will analyse the collected seabirds to determine species, subspecies, provenance (where possible), age, sex and breeding status.

7. AFMA and DEH will analyse and review the seabird–fisheries interactions data to assess seabird bycatch levels by area, season, fishery and fishing method to monitor compliance with the Criteria. These analyses will be prepared annually and show, for each area and season, the bycatch rate with confidence intervals, together with the species composition of any bycatch.
8. AFMA will ensure that all longline fisheries' logbooks and VMS information collection procedures accurately record:
   - the number of seabirds caught;
   - the species of seabirds caught;
   - the life status of seabirds caught;
   - the type of bait used;
   - the fishing gear and mitigation measures used and stage of operation when the catch occurred;
   - the time of day/night of the line setting and haul;
   - the date and location of the catch; and
   - external factors (weather conditions, moon phase) that may influence bycatch.
9. AFMA will use longline observer programs to validate seabird bycatch data collected by the logbook system and identify deficiencies in existing programs.
10. DEH, AFMA, DAFF, relevant experts and representatives of key stakeholders will collaborate to assess the impact of TAP actions on other marine species.

Education and Compliance

11. AFMA and DEH will report as appropriate to key stakeholders on the analysis of bycatch data and seabirds collected in relation to achieving the objectives of the Threat Abatement Plan.
12. AFMA will implement extension and training programs for longline fishers where appropriate.
13. AFMA will implement a risk based compliance strategy to ensure that requirements relevant to the mitigation of seabird bycatch are complied with.
14. DAFF and AFMA will communicate the results of implementing the Threat Abatement Plan and promote seabird bycatch mitigation to foreign fishers through international fisheries forums.
15. DEH will communicate the results of implementing the Threat Abatement Plan and will promote bycatch mitigation through relevant international conservation forums including ACAP and CMS.

Research and Development

16. AFMA, DAFF and DEH will promote and support research and development of new mitigation measures by facilitating access to and awareness of fisheries research funding programs.

Innovation

17. AFMA will support the trialling of new mitigation measures and devices under operational conditions by granting individual scientific permits to operators. AFMA will ensure the experimental design of trials will be robust and properly complied with. Measures will be tested across all seasons, on different boats and for a minimum number of hooks. Once a new measure or device has been demonstrated to consistently and effectively meet the TAP criteria, it may be included in the management arrangements for fisheries.
18. AFMA will support innovation and/or effective bycatch mitigation practices through individual accreditation of longline operators able to demonstrate mitigation measures that consistently and effectively achieve the TAP criteria on their vessels. This will be done through a formally agreed set of criteria under which approval to operate would be granted. The basis for the criteria would be to demonstrate an ability to meet bycatch standards on their vessel.

Criteria to Measure Performance of the Plan (EPBC Act 271(2)(b)

Seabird bycatch in all fishing areas and seasons is less than the following bycatch rates:

— Eastern Tuna and Billfish Fishery 0.05 birds per 1000 hooks;
— Western Tuna and Billfish Fishery 0.05 birds per 1000 hooks;
— Southern and Eastern Scalefish and Shark Fishery (Scalefish Hook Sector) 0.01 birds per 1000 hooks;
— Antarctic Fishery 0.01 birds per 1000 hooks; and
— all other fisheries (including new and developing fisheries) 0.01 birds per 1000 hooks.

These criteria have been set on the basis of annual fishing levels at the time this Plan is approved. Trends in fishing effort will be reviewed annually and, if fishing levels increase or decrease significantly (>20%), DEH and AFMA will review the bycatch rates identified above, taking into account spatial and temporal trends, and the vulnerability of seabird species encountered.

Major Ecological Matters that will be affected by the Plan (EPBC Act 271(2)(f)

This threat abatement plan is unlikely to affect other ecological matters, but all actions undertaken will take into account any impacts on the conservation status of non-seabird species including fish, sharks, marine mammals and marine reptiles.

Duration and Cost of the Threat Abatement Plan (EPBC Act 271(2)(d)

This plan should be reviewed in five years time.

The cost of this plan should be covered under the core business expenditure of the affected organisations.

Organisations/Persons Involved in Evaluating the Performance of the Threat Abatement Plan (EPBC Act 271(2)(e)

The Department of the Environment and Heritage, in consultation with relevant seabird experts and key stakeholders, will evaluate the performance of this plan and report the results of their review to the Minister for the Environment and Heritage, through the Threatened Species Scientific Committee.

Definitions and Acronyms

ACAP — Agreement on the Conservation of Albatrosses and Petrels

AFMA — Australian Fisheries Management Authority

Antarctic fishery — fisheries defined by the *Heard Island and McDonald Islands Fishery Management Plan 2002*, the *Macquarie Island Management Plan 2005*, and new and exploratory fisheries operated under the framework of the *Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR)*.

Bycatch — the unintentional catch of a species of animal during fishing operations

CMS — Convention for the Conservation of Migratory Species of Wild Animals, or Bonn Convention.

Coral Sea Fishery — a fishery defined under the *Fisheries Management Regulations 1992.*

DAFF — Dept of Agriculture, Fisheries and Forestry

Dead seabird — a seabird caught by a longline shall be considered to be dead if:

1. it is obviously dead (i.e. shows no muscle movement or corneal reflex); or
2. is landed alive but displays any of the following pathologies that may lead to death on its release:

— fracture of a wing bone, a leg bone or beak;

— more than two primary feathers on either wing that have broken feather shafts;

— substantial damage to the patagial tendon (indicated by a drooping wing or the inability to fly upon release);

— an open wound (other than superficial injuries in which there is no subcutaneous muscle damage);

— waterlogged or hydrocarbon-soiled plumage; or

— any bird released with a hook in situ.

DEH — Department of the Environment and Heritage, Australian Antarctic Division

ETBF — Eastern Tuna and Billfish Fishery, a fishery defined in the *Eastern Tuna and Billfish Fishery Management Plan 2005*.

Fishing areas — areas divided, for the purposes of the Criteria, into 5 degree latitudinal bands within the AFZ. This means that the bycatch rates will apply separately to each of these bands. For the ETBF the waters between 30 and 35 degrees latitude south will be further divided into two zones by the meridian of longitude 156 degrees east.

Fishing seasons — seasons defined, for the purposes of the Criteria, into two: Summer 1 September — 30 April; Winter 1 May—31 August.

Interaction — an interaction with a seabird where a bird is observed caught under one of the following situations;

(i) Dead not landed on board – birds observed to be killed by direct interaction with fishing gear but not landed on the fishing vessel.

(ii) Dead landed on board – birds landed on the vessel that are dead.

(iii) Alive landed on board following direct interaction with fishing gear
(a) injured, or
(b) released uninjured.

Longline fishing — the setting one or more single lines (mainline) containing many individual hooks on branch lines or snoods. The mainline can either be anchored or drifting. It can be oriented vertically or horizontally and vary considerably in length and number of hooks.

Night — the time between nautical dusk and nautical dawn.

Night setting — the setting of all hooks deployed by a vessel during the night.

Observer programs, observer coverage and observer levels — includes the use of appropriate video technology capable of independently monitoring fishing activities.

Operator — a person who holds a fishing concession as defined under the *Fisheries Management Act 1991.*

Seabird — means, for the purposes of the Criteria, all species in the Class Aves that are caught by any part of the fishing gear and observed to be either dead or alive.

SESSF — Southern and Eastern Scalefish and Shark Fishery (Scalefish Hook Sector), a fishery defined in the *Southern and Eastern Scalefish and Shark Fishery Management Plan 2003*.

WTBF — Western Tuna and Billfish Fishery, a fishery defined in the *Western Tuna and Billfish Fishery Management Plan 2005*.

This threat abatement plan is obtainable from:

http://www.aad.gov.au/default.asp?casid=20587

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