

ALBATROSS AND PETREL MORTALITY FROM LONGLINE FISHING
REPORT ON AN INTERNATIONAL WORKSHOP HELD IN HONOLULU,
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Edited by

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EXECUTIVE SUMMARY

The Workshop on Albatross and Petrel Mortality from Longline Fishing, held in Honolulu, Hawaii, USA May 2000, and attended by approximately 75 biologists, resource managers and conservationists from many countries, reviewed the effects of longlining on albatrosses and petrels on a global scale. The workshop recognised that effective progress required a range of complementary and interlinked actions to:

- a) Develop and use appropriate multilateral, inter-governmental instruments, mechanisms and fora;
- b) Develop and improve practical means to reduce seabird bycatch and promote their wide and effective use; and
- c) Enhance science-based monitoring of seabird bycatch and population trends, complemented by relevant research into population structure, dynamics and foraging ecology.

To these ends, the workshop recommended that:

International agreements and initiatives

1. States proceed as a matter of urgency to conduct assessments of seabird bycatch in their longline fisheries and develop National Plans of Action in accordance with the International Plan of Action for Reducing Incidental Catch of Seabirds in Longline Fisheries (IPOA-Seabirds) of the Food and Agriculture Organization of the United Nations;

2. Range states for the three North Pacific albatross species collaborate by way of relevant existing and new international and regional instruments, to reduce mortality of these birds in their longline fisheries;
3. Range states support the development of and become parties to a Southern Hemisphere Albatross and Petrel Agreement, in accordance with the Convention on the Conservation of Migratory Species of Wild Animals;
4. States, entities and international bodies and fora develop and implement appropriate diplomatic and legal means to regulate illegal, unregulated and unreported (IUU) fishing so that seabird bycatch is minimised;

Practical action

5. It was important to stimulate technological development of new and improved mitigation measures to reduce and, if possible, eliminate seabird bycatch;
6. It was essential to encourage effective use of these measures, particularly amongst developing states and high seas fleets;
7. It was important to promote awareness of problems and their solutions in all states operating or licensing longline fishing;

Research and monitoring

8. Priorities for sustaining existing research and monitoring work, and developing new studies were:
 - a) Monitoring of status and trends of albatross populations, complemented by demographic research;
 - b) Undertaking genetic studies to understand structure and stock identity within albatross species and populations;
 - c) Collecting comprehensive data on bycatch rates and fishing effort; and
 - d) Defining foraging ranges by age, sex and season, using new technologies, devices and analytical approaches.

In addition to the above suggested actions, in order to facilitate co-operation and information exchange throughout the international seabird research and conservation communities, it was concluded that the issue of seabird mortality in longline fisheries be addressed by means of further national and international workshops and conferences. BirdLife International was invited, in the context of its "Save the Albatross Campaign", to sponsor a workshop in 2001 among Latin-American states to address the issue of seabird bycatch in longline fisheries in that region.

INTRODUCTION

In September 1995 a workshop on the incidental mortality of albatrosses in longline fisheries was held in Hobart, Australia, as part of the First International Conference on the Biology and Conservation of Albatrosses (Alexander *et al.* 1997, Robertson & Gales 1998). The workshop reviewed the effects of longlining on albatrosses and drew important conclusions and recommendations for action. Since then, much has happened to address the problem, but seabirds are still substantially at risk of drowning on hooks in many parts of the world's oceans (Brothers *et al.* 1999). Initiatives at the inter-governmental level by the Food and Agriculture Organization of the United Nations (FAO) and the Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention or CMS), by regional bodies such as the Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR), by individual nations and by non-governmental organizations such as BirdLife International, hold promise to reduce considerably, if not to solve, the problem (Cooper *et al.* in press).

With such initiatives underway, it seemed timely to hold a second international workshop on the issue, again linked to an international conference on albatrosses and (this time) petrels, to review the effects of longlining, what is currently being done or planned to be done about it, and to make suggestions and recommendations for action. Following the findings of a workshop on Black-footed Albatrosses *Phoebastria nigripes* held in Honolulu, Hawaii, USA in October 1998 (Cousins & Cooper 2000), it was decided that the effects of longlining on all the albatross species of the North Pacific was in particular need of review. Further, progress with international initiatives needed to be reviewed as did research on mitigation measures. Accordingly, four presentations covering these subjects were solicited from experts in their fields to "set the scene" for the workshop. The written texts of these presentations, appended to this report, and ensuing discussions, coupled with a detailed discussion on research needs led by JP Croxall and H Weimerskirch, form the basis of the conclusions and recommendations of this workshop report.

The workshop was attended by approximately 75 biologists, resource managers and conservationists working with albatrosses and petrels from many countries, allowing for a global perspective to be developed. A number of papers and posters addressing seabird mortality in longline fisheries presented at the conference immediately before the workshop helped set the scene for the workshop deliberations.

FAO INTERNATIONAL PLAN OF ACTION

All longlining states were strongly encouraged to conduct assessments of bird bycatch, and, where warranted, proceed towards the production and adoption of National Plans of Action (NPOA-Seabirds) in accordance with the International Plan of Action for Reducing Incidental Catch of Seabirds in Longline Fisheries (IPOA-Seabirds) of the

Food and Agriculture Organization of the United Nations by the next (24th) Session of FAO's Committee on Fisheries (COFI) in February-March 2001.

The lack of progress by most states in developing NPOA-Seabirds, including but not restricted to those within the European Union and in the developing world, was noted with concern. The workshop participants hoped that some states would be able to report significant progress with their NPOA-Seabirds at the 24th Session of COFI. In this regard it was noted that Paragraphs 22 and 23 of the IPOA-Seabirds allowed for technical and financial support to States. This opportunity should be taken up, especially by developing countries in the southern hemisphere. It was also noted that developing states could seek funding to produce their NPOA-Seabirds from the Global Environmental Facility (GEF). Progress reported to the workshop towards the production and adoption of NPOA-Seabirds by Australia, Canada, Japan, New Zealand, Norway and the USA was welcomed.

Lastly, the workshop participants took note of the Seabird Conservation Programme of BirdLife International and its initiation in 2000 of a global "Save the Albatross Campaign" designed to reduce the mortality of seabirds in longline fisheries. The workshop suggested that BirdLife International, working through its global partnership and with other concerned non-governmental organizations, could produce "shadow plans" that would assist countries to produce their NPOA-Seabirds. BirdLife International should also endeavour to obtain and circulate copies of existing NPOA-Seabirds as examples of "best practice" to help countries prepare their own.

NORTH PACIFIC ALBATROSSES AND PETRELS

All states with breeding and non-breeding populations of North Pacific Albatrosses (Short-tailed *Phoebastria albatrus*, Laysan *P. immutabilis* and Black-footed) should collaborate by way of relevant existing and new international and regional instruments, including those managing fisheries, to reduce bycatch of these species by their longlining activities, consistent with Paragraphs 19 and 20 of the IPOA-Seabirds.

The proposed Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean was recognized as a potential instrument to address albatross and petrel bycatch by longline fisheries in the western part of the North Pacific. The April 2000 draft of the Convention makes reference to assessing the impacts of and adopting measures to minimize "catch of non-target species, both fish and non-fish species...in particular endangered species and promote the development and use of selective, environmentally safe and cost-effective fishing gear and techniques" (Article 5(e), Multilateral High Level Conference 2000). However, the proposed area to be covered by this convention does not extend east of 150°W north of the Equator, and thus does not cover longline fisheries in the Gulf of Alaska and Bering Sea where seabird mortality of North Pacific albatrosses also occurs (Brothers *et al.* 1999). The Seventh and Final Session of the Convention is due to be held in August-September 2000.

Another potential instrument to address albatross and petrel bycatch in longline fisheries in the North Pacific is the Fisheries Working Group (FWG) of the Asian-Pacific Economic Cooperation (APEC), a group of 21 member economies in the Pacific region. The FWG aims to promote the conservation and sustainable use of fisheries resources and it is in this capacity that seabird mortality could be raised. The FWG is currently addressing a project that would encourage all member economies to implement the FAO's International Plan of Action for the Conservation and Management of Sharks, so could presumably undertake a similar initiative for IPOA-Seabirds

Consideration could also be given to a North Pacific Albatross range-state Agreement under the terms of the Bonn Convention, since all three North Pacific albatrosses are listed in its appendices. It was noted that at least one state in the region would need to be a party to the CMS before such an Agreement could be advanced.

Publicly-available information on levels of albatross and petrel bycatch by North Pacific fishing nations was currently only available for the USA, from Alaskan and Hawaiian waters. There is a pressing need for such information to be collected and made available by the other nations undertaking longline fishing in the region.

SOUTHERN HEMISPHERE ALBATROSS AND PETREL AGREEMENT

The workshop participants commended South Africa for its successful nomination of seven *Procellaria* and *Macronectes* petrels to Appendix II of the Bonn Convention at its 6th Conference of Parties held in South Africa in 1999. It was noted that this meant that all procellariiform seabirds considered to be seriously at risk from longlining in the southern hemisphere were now listed in Appendices of the CMS, since all albatross species had been previously listed.

The 6th COP recommended that all range states for southern hemisphere albatrosses actively participate in the development and successful conclusion of an Agreement. Australia offered to facilitate further discussions and it was noted that Australia was hosting a meeting, involving all range states, to develop agreed text for an Agreement in Hobart, in July 2000. This initiative was strongly supported and it was recommended that the seven petrel species included in Appendix II of the CMS be included within the Agreement from the outset. The 6th COP also adopted a resolution on by-catch emphasizing the "significant and continuing mortality of albatrosses and other species" in longline fisheries.

It was noted with approval that a Southern Hemisphere Albatross and Petrel Agreement would address conservation concerns broader than just longlining, and was intended, *inter alia*, to address habitat protection and management, both at sea and on land; human-bird interactions, such as those resulting from scientific research and eco-tourism; collaborative research and monitoring requirements; information dissemination to both

the technical and wider global community; and collaboration with other international and regional instruments, including fishery organizations.

The workshop encouraged the prioritization of on-ground conservation actions under the terms of the proposed Agreement and further noted the importance of the collection, analysis and public dissemination of findings. Duplication of work already undertaken and available (e.g. reviews of albatross and petrel status and of mortality rates in longline fisheries) should be avoided, so as to concentrate efforts on achieving effective action, both politically and on-the-ground, to address the two most pressing problems: longline mortality at sea and predation by introduced species at breeding grounds.

All range states, including high-seas nations fishing in the southern hemisphere, as well as breeding and non-breeding range states, were strongly encouraged to attend the July inter-governmental meeting and contribute to the early completion of an Agreement. Further, such states were encouraged to join to the Agreement as soon as it was open for signature.

It was considered that the Agreement should include recommendations for the transfer of technical knowledge and financial support between parties, to facilitate especially the enhanced protection of the listed albatrosses and petrels by developing countries.

ILLEGAL, UNREPORTED AND UNREGULATED FISHING

Workshop participants were extremely concerned by the likely high levels of albatross and petrel mortality caused by illegal, unreported and unregulated (IUU) longline fishing, especially for Patagonian Toothfish *Dissostichus eleginoides* in the Southern Ocean. The workshop urged states, entities and international bodies and fora to implement (and where necessary develop) appropriate diplomatic and legal means to regulate these fishing activities so that seabird bycatch is minimized.

The efforts of CCAMLR both to assess and control IUU fishing in the Southern Ocean and its adoption of a catch-documentation scheme for toothfish from 1 May 2000 that should lead to the halting of international trade in IUU-caught toothfish by CCAMLR nations was noted. Whether such a scheme can reduce trade involving non-parties to CCAMLR or whether other mechanisms will be necessary to address the issue was unclear.

The holding of an Expert Consultation on Illegal, Unreported and Unregulated Fishing Organized by the Government of Australia in Cooperation with the FAO from 15-19 May 2000 soon after this workshop was noted with approval. It was noted that the consultation aimed to produce an International Plan of Action (IPOA) to combat IUU fishing that would be adopted at the 24th Session of COFI in 2001. It was hoped that bycatch in longline fisheries, including of albatrosses and petrels, would be reduced by this development. Nations are urged to adopt the provisions of the IPOA once it is finalized.

MITIGATION OF SEABIRD MORTALITY IN LONGLINE FISHERIES

Recent and ongoing research, including by way of controlled experiments, into reducing seabird mortality from longlines was noted with approval. It was agreed that further research and outreach was required on two broad fronts:

- a) in the area of technological development and refinement of mitigation measures, including their applicability to individual fisheries and to the species at risk; and
- b) in the non-technical area, addressing the continuing lack of awareness of seabird conservation issues and the reluctance to change practices to reduce seabird mortality, in both developed and developing countries.

A holistic approach was considered desirable, with a “top-down” approach via governments and international and regional agreements and other instruments and a “bottom-up” approach via fishers and fishing gear companies. For the former approach, consumer markets demanding fish products captured using techniques which significantly reduce or avoid seabird mortality was recognized as an additional tool to encourage fishers to adopt mitigation measures, with the consequence that observer programmes will be needed to check for compliance. For the latter, direct links should be made and fostered between concerned scientists and conservationists and with fishers. In this regard the several mitigation measures that had been first developed and voluntarily adopted by fishers (e.g. use of bird-scaring “tori” lines, blue-dyed bait and towed “buoy bags”) showed the value of such an approach.

It was noted that many longline fisheries did not currently have on-board observer programmes to collect information on seabird mortality and use and effectiveness of mitigation measures. Although it was noted that running such schemes was expensive, and might thus be beyond the ability of some developing countries, in some fisheries the “user-pays” principle had been adopted so that the fishery itself paid for the observer scheme.

The benefits of maintaining teams of well-trained observers was noted. The development of scientific observer programmes has led not only to improved collaboration between fishery organizations and scientists in reducing seabird mortality by longline fisheries, but also to the improved management of the fisheries themselves. The absence of observer programmes in some developing countries, including in South America, was noted with concern. Countries with established observer programmes, such as Australia and New Zealand, could help in this regard by providing training. For a number of southern hemisphere nations, the Valdivia Group of Temperate Southern Hemisphere Countries on the Environment could provide a framework for such cooperation. A similar approach would be of value elsewhere, including in the North Atlantic and North Pacific Oceans.

It was noted that independent observer programmes were the only reliable way to collect data on bycatch rates. In order to obtain statistically rigorous results, such programmes needed to cover an adequate sample of vessels and allow for the collection of accurate data on the fine-scale distribution of both fishing effort and bird mortality. In this regard, it was noted with regret that local media reports at the time of the workshop stated that the mandatory observer programme operating within the Hawaiian-based pelagic longline fishery since 1994 was to be reduced in size (by the elimination of 12 of 14 posts) due to a lack of funding.

Lastly, it was agreed that observer programmes should return representative samples of seabird corpses to port, both for validation of specific identifications and to collect data on such characteristics as gender and age-class ratios, body condition, moult and for genetic studies. To this purpose, concerned scientists and institutions needed to ensure that there was an efficient and effective means of collecting specimens from ports of landing and processing and/or storing them as necessary.

RESEARCH ISSUES AND PRIORITIES

Population studies

It was considered vital to maintain and sustain existing long-term population studies since these are unique as sources from which to identify problems, disentangle potentially confounding causal effects and monitor progress towards management targets, including success of remedial measures. Those conducting and/or commissioning these studies should ensure that results are made available as promptly and as widely as possible.

Whenever possible these studies should be designed so as to accompany estimates of population size and trends with other demographic data, especially annual adult survival and recruitment rates.

For many purposes, including population models and assessment of threatened status under IUCN criteria, population trends and generation time are essential data. For calculating the latter, estimates of mean age of first breeding and adult annual survival are required. These data should be a high priority for acquisition and publication.

There is a need to explore more rigorously and state more explicitly the objectives of management action, taking account of:

- a) current best practices with precautionary management approaches in marine and terrestrial systems; and
- b) the need to restore the populations of the many seabird species which have globally or regionally threatened status under the IUCN criteria.

The utility of population models in expressing many of the most urgent problems relevant to conservation and management of seabirds was emphasized, particularly including seabird bycatch. One topic considered of potential interest was to evaluate the relevance of approaches to fisheries bycatch management involving bycatch limitation based on precautionary population models.

The proposal to hold a workshop to explore the issue of matrix population models, using long-term data for studies of albatrosses and petrels was endorsed and commended, especially for those species actually or potentially affected by seabird bycatch.

The importance was recognized, including amongst threatened species, of review and prioritization of management options, including (but not limited to) commencing new population studies, developing models using analogue (e.g. congener) data and taking direct action to address the major perceived threats.

The importance of maintaining and developing national and regional systems for retention, analyses (and archiving where appropriate) of specimens, material and data from seabird bycatch was recognized. Data on age and sex were considered to be of particular interest. Special note was taken of the importance of recording the details of banded birds caught as bycatch. In some circumstances it might be appropriate to make recording these data a condition of permits issued within licensed fisheries.

Genetics

The importance of recent and current genetic studies in illuminating species limits and defining population structure within species for conservation and management was recognized. For seabird bycatch the potential for determining the provenance (e.g. to island group, island population, colony) of individual seabirds is considerable. However, the currently detectable levels of genetic variation differ greatly amongst species and it would be optimistic to expect that allocation to island “population” would be possible for some species.

Careful evaluation of genetic data, in conjunction with morphometric, ecological and behavioural data, combined with a pragmatic approach, would be prudent in any redefinition of species limits.

Notwithstanding whatever species limits are recognized, there is a need for enhanced focus on the management and conservation of albatrosses and petrels at the most appropriate levels (e.g. management stock or unit). For some species at least this will be on an infra-specific basis (e.g. island or colony).

It was agreed that the following practical steps were needed:

- a) formulate and circulate recommended sampling and storage protocols for genetic material for seabirds;

- b) establish and manage an electronic and open-access database inventory of the nature and location of relevant samples for albatrosses and petrels; and
- c) consider the feasibility and desirability of establishing international, national and regional repositories for samples of genetic material of albatrosses and petrels.

At-sea studies of foraging and diet

In order effectively to study interactions between longline fisheries and seabirds it is essential to have available data on:

- a) species-specific seabird bycatch rates (i.e. from scientific observer programmes) from a reasonable sample of (ideally all) vessels in all relevant longline fisheries; and
- b) data on fishing effort at as fine a scale as possible for a reasonable sample of (ideally all) vessels in all relevant longline fisheries.

The importance of collecting data by both shipboard observational and remote-sensing techniques was recognized for delimiting ranges and foraging areas of seabirds at sea.

It was recommended that practitioners of both types of data collection should collaborate at regional and global levels to define ranges of seabirds at sea (including by age, sex and season) and to identify areas of intensive use and migration pathways within these.

The urgent need for review and elaboration of statistical methods for use in analyses of satellite tracking was recognized, especially in relation to generating range, density-distribution and trip-specific phenomena. A workshop should be held to facilitate this.

Development and use of miniaturized devices and improved attachment methods should be promoted to facilitate the long-term, relatively inexpensive collection of data on at-sea range and movements of seabirds outside their breeding seasons and of age-groups other than adults.

Research, particularly into feeding methods, especially diving depth, bait attractiveness, etc. should be encouraged, with respect to:

- a) susceptibility of species to being caught; and
- b) developing methods of avoiding seabird bycatch.

The effects of enhanced availability of offal to seabird demography as a result of fishing needs to be studied.

THE FUTURE

It was considered that there was a need for future meetings on the subject of albatross and petrel mortality by longline fisheries, especially in developing countries such as on the South American continent. However, it was noted that, at present, no formal structure existed to convene them. Such a structure would allow for a wide group of biologists and conservationists working with albatrosses and petrels to provide advice, for example, to a Southern Hemisphere Albatross and Petrel Agreement. Several options were noted as how this could best be achieved. These included the resuscitation of an international Seabird Specialist Group, as previously run by BirdLife International; a formal collaboration between existing regional seabird groups; or the formation of a new body. Because many attendees at the workshop hold influential positions in their respective organizations, all were asked to consider the way forward with their colleagues and circulate their suggestions. The Seabird Conservation Programme of Birdlife International and the internet Seabird Listserver could act as enabling mechanisms in this regard.

It was recommended that seabird mortality from longlining should be discussed again at the Third International Conference on the Biology and Conservation of Albatrosses and Petrels. Lastly, BirdLife International was encouraged to sponsor a workshop among Latin-American states undertaking longlining during 2001, both to assess the levels of mortality of albatrosses and petrels in that region and to encourage the production of NPOA-Seabirds and the development and adoption of a Southern Hemisphere Albatross and Petrel Agreement.

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APPENDIX: PAPERS PRESENTED AT THE WORKSHOP

- COUSINS, K.L., DALZELL, P. & GILMAN, E. Managing pelagic longline-albatross interactions in the North Pacific Ocean.
- HALL, R. & HAWARD, M. International legislation and agreements: what is being done and what more is needed?
- MELVIN, E.F. & ROBERTSON, G. Seabird mitigation research in longline fisheries: status and priorities for future research and actions.
- RIVERA, K.S. The FAO International Plan of Action: what are nations doing?