

Report of the

**FAO/BIRDLIFE SOUTH AMERICAN WORKSHOP ON
IMPLEMENTATION OF NPOA-SEABIRDS AND
CONSERVATION OF ALBATROSSES AND PETRELS**

Valdivia, Chile, 2-6 December 2003



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PREPARATION OF THIS DOCUMENT

This is the report of the FAO/BirdLife South American Workshop on Implementation of NPOA–Seabirds and Conservation of Albatrosses and Petrels, held in Valdivia, Chile, from 2 to 6 December 2003.

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ABSTRACT

The International Plan of Action for Reducing Incidental Catch of Seabirds in Longline Fisheries (IPOA–Seabirds) was developed by FAO in response to the growing concern. The IPOA–Seabirds requests countries with longline fisheries that interact with seabirds to develop a national plan (NPOA–Seabirds) to reduce the incidental seabird catch in their fisheries. Several countries in the South American region have large populations of albatrosses and petrels, and existing assessments and data indicate that significant numbers of seabirds are caught annually in several longline fisheries in this region. Thus FAO and BirdLife International organized this joint workshop to discuss albatross and petrel conservation and to initiate the development of NPOA–Seabirds in the regional countries.

Representatives of different disciplines (research institutes, fishing industry, non-governmental organizations (NGOs), governmental agencies) from Argentina, Brazil, Chile, Peru and Uruguay met to discuss topics related to implementation of NPOA-Seabirds. National reports were presented giving an overview of the problem and the status of the progress in the development of their NPOA-Seabirds. Experts representing the United States of America and New Zealand, which have finalized the development of their NPOA-Seabirds, gave presentations of these works. Presentations were also given of regional agreements such as the South American Strategy for the Conservation of Albatrosses and Petrels (ESCAPE), the Agreement on the Conservation of Albatrosses and Petrels (ACAP) and the Southern Seabird Solution (SSS). Discussion groups were set up to discuss mitigation measures, priorities, projects and potential funding sources.

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BACKGROUND

In response to the growing concern about incidental catch of seabirds, FAO developed the International Plan of Action for reducing incidental catch of seabirds in longline fisheries (IPOA–Seabirds). The IPOA–Seabirds requests countries with longline fisheries to conduct an assessment of these fisheries to determine if a problem exists with respect to the incidental catch of seabirds. If a problem exists, the country should adopt a National Plan of Action for Reducing Incidental Catch of Seabirds in Longline Fisheries (NPOA–Seabirds). Some FAO Members informed the twenty-fifth session of the Committee on Fisheries (COFI), held in February 2003 in Rome, that their efforts to develop NPOA–Seabirds had not progressed to a significant extent, and indicated that a lack of technical assistance from FAO had been partly the cause for this lack of progress, while others noted that they did not yet have enough data to complete their assessments.

Several countries in the South American region have significant populations of albatrosses and petrels. Overlap in the foraging areas of these seabird populations with the fishing grounds of longline fisheries in the southwestern Atlantic and southeastern Pacific indicates that interactions occur between seabirds and longliners along the coast of South America. Information on seabird mortality in fisheries in this region was brought together and discussed at the first South American Workshop on the Conservation of Albatrosses and Petrels organized by BirdLife International in September 2001 in Punta del Este, Uruguay. The workshop presented assessments and data on levels of seabird mortality which indicated that significant numbers of seabirds are caught annually in several longline fisheries in the region. Accordingly, several countries in South America stated in their reports to the twenty-fifth COFI meeting that the assessments of their fisheries indicated a need for developing NPOA–Seabirds.

The two organizations, FAO and BirdLife International, originally planned to organize a workshop in South America to discuss albatross and petrel conservation and to initiate the development of NPOA–Seabirds in the regional countries. Recognizing significant overlap in the agendas and potential participants of the two meetings, it was agreed to organize a joint workshop on interactions between seabirds and longline fisheries in the South American region. Thus representatives of different disciplines (research institutes, fishing industry, non-governmental organizations (NGOs), governmental agencies) from Argentina, Brazil, Chile, Ecuador (was not represented), Peru and Uruguay were invited to discuss topics related to implementation of NPOA–Seabirds and conservation of albatrosses and petrels.

1. INTRODUCTION

Dr Carlos Moreno (Universidad Austral de Chile) opened the meeting and welcomed all the participants. He expressed his satisfaction at the large number of participants from nearly all the relevant countries in the region. This showed progress even with respect to the previous meeting, which had been so successful. He was particularly grateful with participants from outside the region, which gave the meeting a truly international flavour and showed the close links between continents, tied up by seabirds crossing the oceans and interacting with fisheries in various regions.

Dr Moreno thanked the two main convenors, BirdLife International and FAO, for the support they provided which made this meeting possible. BirdLife partners in Spain (SEO/Birdlife), in the UK (RSPB) and in The Netherlands (Vogelbescherming Nederland) had provided financial and human resources for the organizational aspects and to pay for travel costs for attendees. FAO's financial and technical support had made it possible that government and industry representatives from key countries, as well as a few reknown experts from other regions, had joined the meeting, providing sound scientific input and fishermen's views and experiences for the common goal of seabird conservation in the context of sustainable fisheries.

In the first talk, Carles Carboneras (SEO/Birdlife) presented an overview of the main news and events that had happened since the previous workshop in September 2001. In that meeting, there had been little involvement of the fishing industry or government authorities but the participation of scientists and other experts had been high. This allowed for a first regional review of the problem of seabird bycatch and the drafting of the South American Strategy for the Conservation of Albatrosses and Petrels (ESCAPE). A number of projects, subsequently developed in Argentina, Brazil and Chile, also had their origin in that meeting.

Since 2001, there had been significant progress in Brazil and Argentina, and a number of activities in Chile. Ecuador had ratified Agreement for the Conservation of Albatrosses and Petrels (ACAP). Falkland Islands (Malvinas) had completed NPOA–Seabirds for its longline and its trawler fisheries. Peru and Uruguay had been least active but equally supported some initiatives. There had been some exploratory fishing for *Dissostichus* sp. in both those two countries.

In the international arena, there had been a number of relevant international meetings, including FAO–COFI 25 and IFF–2, the International Fishers' Forum. A new independent coalition, called Southern Seabird Solutions (SSS), had been set up with the continuing support of the Department of Conservation of New Zealand. It focused on the international connections of the conservation of New Zealand seabirds. On another front, BirdLife's work had succeeded in the International Commission for the Conservation of Atlantic Tunas (ICCAT) adopting a resolution on seabird bycatch. The Convention on the Conservation of Antarctic Living Resources (CCAMLR) had also adopted new resolutions on seabird bycatch avoidance. Other interesting initiatives included a conference on illegal, unreported and unregulated (IUU) fishing in Spain, the setting up of the company-based Coalition of Legal Toothfish Operators (COLTO) and actions against “pirate” fishing in Chile.

Mr Carboneras also reviewed the proposed new structure for the Seabird Programme within BirdLife International, including external collaborations (such as with FAO and SSS) and new linkages in countries like Peru and Brazil. Finally, he went on to present the ESCAPE strategy and proposed a revision of its contents, in order to adapt it to the current needs.

2. NATIONAL REPORTS

Status and trends in the Argentinean longline fisheries, evaluation of mitigation measures and its efficiency

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Demersal longline fishing in Argentine waters began in 1992, targeting Argentine hake (*Merluccius hubbsi*), South American kingclip (ling) (*Genypterus blacodes*), and Patagonian toothfish (*Dissostichus eleginoides*) from the Patagonian Shelf and in deeper waters within the Argentine Exclusive Economic Zone (AEEZ). This activity report an important income during the 1990s with estimations for the Patagonian toothfish fishery of US\$ 80 million for 10 000–12 000 tonnes landed in Argentine ports. The fishery has consisted of eight vessels operating within the AEEZ, one targeting Skates (*Raja* sp.) and seven targeting ling and Patagonian toothfish. Main landing ports are located in Patagonian waters (Puerto Deseado and Ushuaia) compromising approximately 85 percent of the landed fish.

During the mid 90's in San Matías gulf (northern Patagonia, Rio Negro province), a specific longline fishery was developed under provincial jurisdiction whose target species is Argentine Hake. The quality of the fish caught encouraged the Province to develop this fishery in contrast to the hake obtained by trawling. The fishery started in 1996 with a few artisanal vessels (less than 10 m), but at the end of 1998 an important number of artisanal and industrial (20–35 m) vessels were incorporated. From 2000 to 2001 the international prices decreased and the activity slowed down, so from 1999 to 2002 the fleet was practically inactive. However, the economic conditions in present days are again stimulating this fishing activity with a fleet of about 10 to 11 vessels (R.A. González, unpublished data). This growing activity provoked concern on seabird mortality to academia and different ONG's and during 2000 joint actions with fishing industry and the government started.

Previous information was scarce and crude, with estimations based on Argentina effort and CCAMLR mortality rates that indicated an annual albatross mortality from 3 832 to 13 514 (wandering, royal, black-browed and grey-headed albatrosses). Other estimation made by Gandini and Frere (2000), indicated bycatch rates of two birds/1 000 hooks when operations were made during the day without using mitigation measures. Lately a completed study made by Gandini and Frere (in press) found that vessels targeting ling and using night setting, thawed bait, and offal strategically deployed has a seabird capture rate of 0.034 birds/1 000 hooks.

A joint project between non-governmental organizations (NGOs), academia and fishing companies is being developed. Practicability and effectiveness of seabird deterrent measures to avoid and minimize seabird mortality, be economically practicable and of voluntary compliance is being tested on ARGENOVA S.A. vessels obtaining seabird mortality rates

with onboard observers trained to seabird identification. We developed a laminated card that is being distributed among crew members and observers, a pamphlet explaining seabird problem and to provide fishers with information on the use four mitigation measures that could be easily adopted by them was printed out, which is also being distributed among the main stakeholders. We are also working with National Authorities to standardize the information obtained by the National Observer program enhancing data collection on seabird bycatch through the program, and to identify priorities and future research.

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Zavalaga, C.B., Frere, E. & Gandini, P. 2002. Statut of the Red-legged Cormorant in Peru: What factors affect distribution and number? *Waterbirds*. Vol. 25, no. 1, pp. 8–15, Mar 2002.

The bycatch of albatrosses and petrels by longline fisheries in Brazil

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1. Introduction

Despite the dearth of breeding species, Brazilian waters are an important feeding area for albatrosses and petrels, including some significant concentrations of globally threatened species such as Spectacled Petrel *Procellaria conspicillata*, Atlantic Yellow-nosed Albatross *Thalassarche chlororhynchos* and Tristan Albatross *Diomedea dabbenena* (Olmos, 2001 and 2002, Neves and Olmos, 2001). Most species are found in the colder waters and upwellings of southern and southeastern Brazil, especially the ones influenced by the Subtropical Convergence, where the warm Brasil and the cold Malvinas currents meet (Vooren and Brusque, 1999). At least 20 species of seabirds interact with longliners in Brazilian waters, following the vessels and feeding on discards, and albatrosses, *Procellaria* and *Puffinus* spp. are known to interact with fisheries in a significant way (Olmos, 1997; Neves and Olmos, 1998; Olmos, Neves and Bastos, 2001).

2. Fisheries catching birds in Brazil

Seven fisheries (fishery concept follows TAMAR, 2002) are known to affect albatrosses and petrels in Brazil, and four of them are considered as priorities because of their fishing effort, location and/or bycatch potential. These are 1) pelagic longline fleet based in southern and southeastern Brazil, 2) leased longline fleet based in northeastern Brazil, 3) bottom longliners and 4) artisan longliners based in Itaipava (Espírito Santo).

Although seabird bycatch is mostly associated to longline fisheries, some techniques have the potential of causing significant mortality. Driftnets, demersal gillnets and live-bait bonito fishing are known to kill birds in Brazil but there is little information on the numbers and species involved.

Brazil caught 50 575.5 tons of tunas, billfish, sharks and other species in 2002. This value is 1.5% lower compared to the previous year. Considering only the catch from longliners, 2002 had a 29.8% decrease compared to 2001, despite the number of vessels increasing by 4%, from 124 in 2001 to 129 in 2002 (Travassos and Hazin, 2003). This marked decrease suggests fishing stocks exploited by longliners (mostly swordfish and sharks) are overexploited.

2.1 Pelagic longliners in southern and southeastern Brazil

This fishery is carried by domestic and leased vessels based in southern and southeastern ports (Santos – SP, Itajaí – SC and Rio Grande – RS). It is dominated by domestic vessels, the ratio of domestic to leased vessels ranging from 28:3 in 2000 to 23:5 in 2002 (Brazil Report to ICCAT, 2002).

Since 1994 all vessels based in Brazil moved to the monofilament American model, and began to target mainly swordfish *Xiphias gladius*. Each longline has 800 to 1 200 hooks baited with Argentine squid (mostly imported from Uruguay) and, occasionally sardines and

mackerel, and sink to 45–80 m (Olmos, Neves and Bastos, 2001). Longline settings begin around sunset but during the summer, as sunset occurs later, the longline is set during the afternoon to avoid settings (which take over five hours) extending until late in the night (Azevedo, 2003).

This fishery exploits three main areas: along shelf break and off the shelf waters from São Paulo south to Rio Grande do Sul, the Rio Grande Elevation and Hunter Channel and, to a lesser extent, the seamounds of the Vitória–Trindade chain (Azevedo, 2003). The distribution of the fishing effort by this fishery bears a close resemblance to the distribution of seabirds in Brazil.

2.2 Leased longliners based in northern and northeastern Brazil

According to the latest data presented by Brazil to the ICCAT (October 2003), by 2002 a total of 129 longliners were registered in Brazil, 74 being leased and 55 national. Among the leased vessels, two were based in Recife – PE, 37 in Cabedelo – PB, 61 in Natal – RN and one in Belém – PA. (Travassos and Hazin, 2003). The trend is for the number of leased vessels based in northeastern Brazil to increase, including ports with no longline fleet as in Bahia.

A few of the leased vessels may use a different gear from the monofilament longline and employ the Spanish-type longline. Despite most of the leased longliners being based in northeastern Brazil, fishing effort maps show them to move seasonally to southern Brazil to areas with known concentrations of seabirds. The greater autonomy of the leased vessels, including the use of freezers for storage of the catch, allows them to fish far from their home ports. Domestic vessels use ice for storage and cannot spend so long at the sea.

2.3 Bottom longliners

Fisheries using bottom longliners started in Brazil only in 1994. Most vessels are converted trawlers. The mainline is 6–7 nautical miles long and employs 1 500–2 000 hooks in sidelines. Settings are made during daytime to avoid damage to the fish by nocturnal carnivorous isopods (Tutui, 2000). Because the exploited stocks show signs of overfishing, some vessels now fish for catfish and other less valuable species in much shallower waters (>80 m) (Haimovici, 2003; Ávila-da-Silva, Bastos and Tutui, 2001).

Haimovici and Velasco (2003) recorded 42 bottom longliners operating in southern and southeastern Brazil in 1997 and 1998. All were domestic but for one large Norwegian vessel. Bottom longliners are based mostly in Santos – SP, Itajaí – SC and Rio Grande – RS. Mean annual fishing effort was 17.7 million hooks. The decline of fish stocks imply the number of vessels has decreased and only the most able skippers have been able to keep in business.

2.4 Artisanal longliners of Itaipava – Eastern and southern

A fleet of about 290 artisanal fishing boats based in the port of Itaipava, Espírito Santo state, and neighbouring towns of Piúma, Anchieta and Vila Velha is made of wooden boats 10–15 m long carrying a crew of six to eight people and able to carry 12–13 tonnes of fish. Because of the market prices for dolphinfish and swordfish, boats from Itaipava now fish widely in southern Brazil and are known to land in Itajaí.

These vessels use different kinds of longline and target dolphinfish *Coryphaena* spp. with floating longlines with hooks keeping just below the surface, swordfish with deeper lines, and demersal fish with bottom longlines and hand lines. Sometimes all longlines are used at the same time.

The lines set for dolphinfish use 800 to 1200 hooks. Fishermen report that birds are commonly hooked and remain alive on the surface only to be killed by the disgruntled crew. There is very little information on bycatch levels and species caught by this fishery. On-board observers report interactions with shearwaters, albatrosses, petrels and skuas. Also, this fleet fishes in the area of occurrence of the globally threatened Trindade Petrel *Pterodroma arminjoniana*.

3. The incidental mortality of seabirds in Brazil

Data on seabird bycatch by bottom longliners in Brazil has already been published (Neves and Olmos, 1998; Tutui *et al.*, 2000; Olmos, Neves and Bastos, 2001). It has been estimated the 1998 fishing effort of 17.7 million hooks would correspond to an average of 4 214 (2 201 to 6 226) seabirds caught/year. This fishery has a greater impact on diving species such as shearwaters and petrels.

Efforts to quantify seabird bycatch by pelagic longliners have dealt mostly with the domestic fleet, as the observers on board leased vessels did not gather data on birds until recently. Olmos, Neves and Bastos (2001) suggested a catch rate of only 0.095 birds/1 000 hooks for vessels from Santos based on interviews with fishermen and birds brought by them. On board observations, nevertheless, showed much greater catch rates of 0.73 and 1.35 birds/1 000 hooks.

Based on a 1998 fishing effort of 6.4 million hooks/year, Olmos, Neves and Bastos (2001) estimated the longline fleet fishing in southern and southeastern Brazil was catching an average of 6 665 birds/year, mostly white-chinned petrels and black-browed albatrosses. More recently, six cruises monitored by observers from Projeto Albatroz in February, May, June and July 2002 yielded 23 birds (19 *T. melanophris*, 1 *T. chlororhynchos* and 3 *Procellaria aequinoctialis*) caught by 102 250 hooks in 86 sets. The catch rate of 0.225 birds/1 000 hooks, is much greater than the 0.05 birds/1 000 hooks accepted by most sources. During the same period Projeto Albatroz also received dead *Diomedea exulans* and *D. dabbenena* brought by other vessels without observers. These results, besides confirming there is no substitute to on-board observers for sound data gathering, and point catch rates in Brazil are high, but there is great variability among cruises regarding the probability of catching birds.

4. The use of mitigation measures in Brazil

Together with the Brazilian environmental agency, Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis (IBAMA), Projeto Albatroz tested mitigation measures during 2000 and 2001 with the aim of evaluating their efficiency under the conditions Brazilian vessels operate, and also to assess any impact on catch rates of target species and their acceptance by the crews. Three of the main fishing companies in the region, two in Santos and one in Itajaí, were partners in the tests. Together, the three companies accounted for 52% of the total number of vessels in the region by 2002.

The chosen measures were the *toriline* and blue-tinted baits. The experience showed that information on the importance of conserving seabirds and the impact of the seabird/fishery interaction, made available in an accessible way, was the most important tool in the voluntary acceptance of the suggested mitigation measures, compared to on-board observers and donating ready to use measures. At least four vessels have incorporated the use of *torilines* and blue baits into their routine.

Nevertheless, formal tests are needed to assess if they do reduce seabird bycatch. A trial was conducted as a joint initiative of the Centro Nacional de Pesquisa para Conservação das Aves CEMAVE/IBAMA, Projeto Albatroz and the Sea Turtle-focussed Project in Brazil (TAMAR). The preliminary results of this trial (Table 1) were obtained during cruises made in March and July 2003, with standardized 300-hook sets made in areas between 24°30' and 28°30'S and 41°W and 48°W.

Table 1 (A) and (B) – Results of mitigation measures tests aboard the N.Oc. *Soloncy Moura* in 2003. The captures per unit of effort (CPUE = individuals/1 000 hooks) of four treatments is shown: blue tinted baits with (1 000 hooks set) and without torilines (600 hooks), torilines only (2 000 hooks) and no mitigation measure (1 200 hooks).

(A)

Target species	Blue bait		Non-tinted bait	
	with toriline	no toriline	with toriline	no toriline
Swordfish <i>Xiphias gladius</i>	14.0	3.3	10.0	5.8
Blue shark <i>Prionace glauca</i>	9.0	6.7	7.5	7.5
Tunas <i>Thunnus</i> spp.	0.0	3.3	2.5	1.7
Other fish	4.0	3.3	2.5	0.0
Other sharks	3.0	0.0	1.0	3.3
CPUE total	30.0	16.7	23.5	18.3

(B)

Bycatch	Blue bait		Non-tinted bait	
	with toriline	no toriline	with toriline	no toriline
Blue bait albatross <i>T. melanophris</i>	0.0	0.0	0.0	3.3
Loggerhead turtle <i>C. caretta</i>	0.0	0.0	0.0	0.8
Leatherback turtle <i>D. coriacea</i>	0.0	1.7	0.0	0.0
CPUE total	0.0	1.7	0.0	4.2

The small sample size and the low fish catch rates probably affect the rate birds were caught and the high CPUE for birds. Nevertheless, the fact that all albatrosses were caught in sets with no mitigation measure indicates that the measures have some impact. Of course more extensive trials are needed.

Soto *et al.* (2003) report that five cruises totalling 64 150 hooks in 64 sets caught 15 *Thalassarche* spp. and 2 *Procellaria conspicillatá*, or 0.28 birds/1 000 hooks, a very high catch rate despite the use of both blue-tinted bait and night sets. This apparent failure of the

mitigation measures must be studied, as it is not clear what was the tinting methodology and if the night sets did begin after dusk or included clear, moonlight nights.

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Chilean Report

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Longline fisheries in Chile are widely represented and include industrial as well as artisanal fisheries. Both fleets target Patagonian toothfish (*Dissostichus eleginoides*), austral hake (*Merluccius australis*) and ling (*Genypterus blacodes*) among demersal species and swordfish (*Xiphias gladius*) among pelagic ones. Within the demersal fisheries, only the industrial fleet has strong interactions with albatross and petrel populations given that the artisanal fleet uses vertical longlines and has very low associated levels of seabird incidental mortality.

Available target stocks for industrial fisheries are in general stabilized around 33% of the original spawning biomass, and thus effort levels have also remained stable during the past five to seven years (e.g. the Patagonian toothfish fishery sets *ca.* 7×10^6 hooks per year and the Austral Hake and Ling fishery *ca.* 18×10^6 hooks per year). According to Subsecretaria de Pesca's fishery policies, this trend is expected to remain as is during the next few years. It is expected that other incidental mortalities might arise from trawling fisheries for hoki and blue whiting, however, there is no information available on regard to interactions with seabirds in these fisheries, nor for the swordfish fishery, and thus are not covered in this report.

Seabird incidental mortality has been studied in both artisanal and industrial fisheries targeting Patagonian toothfish, the latter of which overlaps spatio-temporally with the incubation period of Chilean black-browed (*Thalassarche melanophrys*) (BBA) and grey-headed (*T. chrysostoma*) (GHA) albatross populations. These populations show markedly different feeding patterns, the grey-headed being the most pelagic and most dependant on squid near the polar front, where they do not interact with the fishery. In contrast, black-browed albatrosses forage along the edge of the continental shelf where they completely overlap with different fishing fleets. Notwithstanding, recent studies have shown the occurrence of large breeding populations in Chile, as indicated in the following table:

Locality	BBA	GHA	References
Islas Diego Ramírez	55 275	16 383	Robertson <i>et al.</i> , 2003
Islas Ildefonso	46 995	8	Robertson <i>et al.</i> , 2003
Islotes Evangelistas	4 670	–	Arata <i>et al.</i> , 2003
Isla Diego de Almagro	15 900	–	Lawson <i>et al.</i> , 2003

According to these recent censuses, the Chilean black-browed albatross population corresponds to the second largest with respect to the one breeding in the Falkland Islands (Malvinas) and the grey-headed population is the second largest after the one breeding in Bird Island. Trends for these populations are only available for Gonzalo Island (Diego Ramirez Archipelago) and show that the grey-headed albatrosses population growth rate is variable given that only one hemi-population breeds each year, however, the black-browed population presents a positive trend and current numbers resemble those estimated during the 1980s. It is suspected that between 1989 and 1995 these populations suffered from extensive mortality due to the high fishing effort performed during that period, which was at least five times

higher than current levels. The actual levels of incidental mortality, according studies conducted during 2002 showed the following indices between seabirds that interact with the Patagonian toothfish fishery South of 47°S:

Species	Min (-95%)	Mean	Max (+95%)
Black-browed albatross (BBA)	1 033	1 522	2 255
White-chinned petrel (PRO)		25	
Grey-headed albatross (GHA)		5	

Through a GLM analysis the study proved that the factors most linked in explaining these results (at least for BBA) were the proximity of active colonies to fishing grounds and the period of the year (Month: November and the first two weeks of December) when both albatross species are feeding their recently hatched chicks. It is worth noting that there was no observed incidental mortality of other species of albatrosses that visit the Chilean coast during winter, partly because they overlap with the artisanal fleet operating North of 47°S. The Chilean Government has expressed its concern with regard to the current levels of incidental mortality and appointed the Universidad Austral de Chile to develop a National Plan of Action (FAO–NPOAs) in consensus with fishing companies, Subsecretaria de Pesca and non-governmental organizations (mainly Unión de Ornitólogos de Chile (UNORCH)). This plan should be operating during 2005.

Reference

Lawson, K., Robertson, G., Valencia, J., Wienecke, B. & Kirkwood, R. 2003. The status of black-browed albatrosses *Thalassarche melanophrys* at Diego de Almagro Island. Chile. *Ibis* (Ibis). Vol. 145, no. 3, pp. 502–505. Jul. 2003

Longline fisheries and seabirds in Peru

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In Peru, the industrial longline fishery (vessels with storage capacity over 30 m³) represents less than 1% of the total fishery industry, all these vessels being exclusively for Patagonian toothfish (*Dissostichus eleginoides*). This fleet consists of 9 vessels with a total storage capacity of 778 m³. Commercial fishery for Patagonian toothfish started officially in 1999. Catches are made between 800 and 2 250 m depth (mean= 1 500 m) and there are latitudinal differences in fish abundance, vessels operating mainly between 12°S and 18°S where yields are bigger. Between 1996–2002, annual catches fluctuated from 369.91 tonnes in 1996 and 173 434 tonnes in 2000, with mean annual catches of 253.84 tonnes. Total effort of the fleet between 1996–1999 was 1 409 354 hooks. Mean effort by month was 128 123 hooks, with minimum and maximum effort levels being recorded in March (35 550 hooks) and July (276 815 hooks), respectively.

The Patagonian toothfish longline fishery in Peru is considered in early stage of development. The size of the fleet has been stable over the last years. The fleet consisted of six fishing vessels in 1996–99, thirteen during 2000, eleven in 2001 and 2002 and thirteen vessels during 2003. Annual catches had fluctuated according to effort levels, with mean annual landings of 253.84 tonnes and a variation coefficient of 30%.

Artisanal longline fishing (boats with storage capacity under 30 m³) is recent, longline fishing is being reintroduced in Peru from the 1980s. Longliners represented 15% of the total artisanal fleet during 2002 and they are distributed widely over the whole coast. Main target species are common dolphinfish (*Coryphaena hippurus*), blue shark (*Prionace glauca*) and shortfin mako (*Isurus oxyrinchus*).

A fraction of the artisanal longline fleet fish all year round, mainly on sharks and skates; the number of artisanal boats increase seasonally during summer along with the abundance increase of common dolphinfish. Artisanal longline fishing in southern Peru started about ten years ago. Operational characteristics of this fleet exist only for Ilo Port (17° S). Operations are diurnal. The fishing boats are 3–10 m³ storage capacity and 7–10 m length. The longlines used have 250–600 hooks each.

The number of artisanal boats has increased during the last seven years. In 1995, longliners represented 3.5% of the total artisanal fleet, with about 190 boats. This fraction increased to 15% in 2002, with a total number of boats estimated between 545 and 1 353, according to their seasonally fluctuation. The number of longline boats increases considerably during El Niño Southern Oscillation (ENSO) years, as it happened in 1997–98.

A total of seven albatrosses and twenty-two petrel species have been recorded off the Peruvian coast during the seabird observations made during the Research Cruises for Pelagic Resources conducted by the Instituto del Mar del Perú (IMARPE) between 1998 and 2003. Species numbers of both albatross and petrel are slightly more abundant during winter-spring than summer-autumn. The most abundant albatross species was the waved albatross (*Phoebastria irrorata*) while between petrels, the sooty shearwater (*Puffinus grizeus*) was the most abundant. Other common species were Salvin's albatross, white-chinned petrel and Parkinson's petrel.

The waved albatross is more common offshore Peru during summer between 9 °S and 11 °S. A total of 3 853 waved albatross were recorded in early autumn 1998, in comparison with 989 individuals at the end of the winter. During summer this albatross species makes big aggregations over the continental shelf, whereas during winter it makes small aggregations widely disperse outside the continental shelf.

The Salvin's albatross has been observed between 7°S–17°S and 10–120 nm offshore. The white-chinned petrel is frequently observed between 7°S–18°S, from the coast and up to 140 nm offshore. The Parkinson's petrel is commonly observed between 12 °S–17°S and 40–200 nm offshore; however, during the 1997-98 ENSO event, this species was observed from 3°S to south.

According to their conservation status and abundance in Peruvian waters, we consider that the waved albatross, Chatham albatross, Salvin's albatross, Galápagos petrel, Cook's petrel, Parkinson's petrel, white-chinned petrel, sooty shearwater and pink-footed shearwater are the more vulnerable species in our waters and therefore, shall receive special attention.

At the moment there is no assessment of seabird incidental mortality in Peru. Progress on this issue has been slow mainly because of funding limitations. This problem has not been prioritized in Peru because of the small size of both industrial (1% of the total number of vessels) and artisanal (15% of the total number of boats) longline fleets.

The only estimated of seabird bycatch comes from a survey undertake to artisanal longline fishermen from northern Peru in 1999. The results suggest that seabird bycatch in this fishery is a relevant conservation problem. The minimum and maximum bycatch rates estimated were 0.74–1.75 birds/1 000 hooks. According to the fishermen, albatross are the main species taken (42%), followed by boobies (22%), pelican (18%) and petrels (13%). We presume that the most affected species are the waved albatross and the Chatham albatross. Another indication of incidental mortality in Peru is the ring recovery. Most of the ring recovered belongs to waved albatrosses, however, rings from Chatham and Buller's albatross are recovered as well.

At the moment, no mitigation measures have been adopted in order to reduce seabird bycatch in Peru.

The seabirds bycatch issue in Uruguay: a review (1993–2003)

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The Uruguayan industrial fishing fleet is classified into four categories according to target species, fishing area and operation method. From a total of one hundred fishing vessels (2001), fifty-five (categories A and B) operate with trawl nets within the Rio de la Plata and Argentinian – Uruguayan Common Fishing Zone (ZCPAU), mainly aimed to demersal fish species as hake *Merluccius hubbsi*, croaker *Micropogonias furnieri*, weakfish *Cynoscion guatucupa* and accompanying species. Category C is composed by thirty-six vessels, different in size and fishing gear, which include: trawlers targeting flatfishes and snails, longliners directed to the capture of swordfish (*Xiphias gladius*) and sharks, vessels with jigging machines for squid (*Illex argentinus*), and with traps for crabs (*Chaceon notialis*) and Patagonian toothfish (*Dissostichus eleginoides*). Those fishing vessels usually operate in the ZCPAU or in close international waters. Fishing vessels comprised in category D (eight vessels) exclusively operate in international waters, using longlines or traps for the capture of Patagonian toothfish or pelagic species. The incorporation of new fishing vessels in categories A and B is at present not allowed. Meanwhile categories C and D are the only ones that grew in number over the last decade.

Uruguayan Economic Exclusive Zone is located inside the distribution area of many albatross and petrel species. There are no breeding colonies but the subtropical convergence is indicated as an important location within their foraging range. At least four albatross and ten petrel species are commonly observed, classified under different categories and status according to the Convention on Migratory Species (CMS) and the World Conservation Union (IUCN) criteria.

Seabird bycatch in different fisheries has been studied since 1993, in the framework of collaborative works between some government institutions, NGOs (Aves Uruguay) and the Faculty of Sciences. The Fisheries Technology Group and other Technical Areas of the Aquatic Resources National Direction (DINARA) provided seabirds mortality rates of several fishing methodologies collecting onboard information through observers. Fishing gears such as pelagic, midwater and bottom longlines showed the highest mortality rates (0.14 to 3.06 birds/1 000 hooks), while bottom gillnets and jiggers accounted for interactions, although lower mortality values (0.10 birds/1 000 m² and 0.0 birds/hr) were recorded. Seabirds mortality was not observed with traps or trawl nets, however, the observation methodology for the last one needs to be improved. Species most commonly captured are *Diomedea exulans*, *Thalassarche melanophrys*, *Thalassarche chlororhynchus*, *Procellaria aequinoctialis* and *Puffinus gravis*. However, species like *Macronectes giganteus*, *M. halli*, and *Fulmarus glacialis* are also carefully considered due to their frequent interactions with fishing gears. Census of seabirds accompanying fishing vessels is also undertaken by the Fisheries Technology Group and Aves Uruguay.

Standing mitigation measures arise from national regulations and international agreements such as the Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR). Uruguayan fisheries regulations state the need of albatross and petrel conservation and specify mitigation measures to reduce seabird mortality with pelagic

longlines since 1997 (decree n° 248/997). In 1998 the first Uruguayan longliner operated in the Patagonian toothfish fishing season in the statistical sub area 48.3. Mitigation measures issued by CCAMLR apply to all fishing vessels operating in the Convention Area and the results are accepted as a true reference. Despite the existence of those mechanisms, a global number of dead seabirds is not available yet, and little has been published about the fleet and fishermen acceptance or real application of mitigation measures, or seabird mortality reduction in Uruguay. There are no published reports concerning regulations compliance by the Uruguayan fleet other than CCAMLR reports or experimental fisheries.

Uruguayan position facing seabird mortality and related bycatch reduction presents a number of advantages: low and manageable number of fishing vessels, specific regulations, well documented background, valuable observation scheme and relationships among organisms and institutions. The fast progress of the issue in Uruguay between 1993 and 1998 contrasts with the following years. The roadblock is in part constituted by a misevaluation or undefined level of priority, difficulties in the achievement of national internal agreements, and the lack of a more specific or improved programme that guarantees a wider participation. Actors like crews and vessels owners are required to have a more active role. Fishermen participation is an under-represented key factor in the development and maintenance of mortality reduction plans. Consequences of the present situation are the delay in the Agreement for the Conservation of Albatrosses and Petrels (ACAP) ratification and the faint involvement in actions within the framework of the South American Strategy for the Conservation of Albatrosses and Petrels (ESCAPE) strategy.

A possible approach to the subject is a general call to all actors involved: crews, vessels owners, government, non-governmental organizations (NGOs) and research institutions, in order to clarify purposes and the guidelines to be developed in the next years.

3. PRESENTATION AND REVISION OF REGIONAL AGREEMENTS

ESCAPE

South American Strategy for the Conservation of Albatrosses and Petrels

following the recommendations of the *I South American Workshop for the Conservation of Albatrosses and Petrels*, held in Punta del Este, Uruguay, 24–28 September 2001, and of the present workshop, held in Valdivia, Chile, 3–6 December 2003

Seabirds are among the world's most threatened bird species, and incidental mortality associated with longline fishing is one of the main problems for their conservation. All twenty-four species of albatrosses and several petrel species are currently threatened with extinction and listed under the World Conservation Union (IUCN) criteria (2003), including some species which are critically threatened. United Nations organizations, such as FAO or the United Nations Environment Programme (UNEP), and other international conventions have taken part in promoting fishing techniques that are not detrimental to the marine ecosystem, seabirds included.

The Code of Conduct for Responsible Fisheries, adopted by FAO in 1995, encourages nations to progress towards increased sustainability of their fisheries. To decrease their environmental impact, FAO approved in 1999 the International Plan of Action to Reduce the Incidental Catch of Seabirds in Longline Fishing, which sets some minimum measures and encourages states to adopt National Plans of Action. These National Plans of Action to Reduce the Incidental Catch of Seabirds in Longline Fishing are a very useful tool in the conservation of biodiversity (and, particularly, of bird populations) in the marine environment

In order to address the current precarious status of seabirds, non-governmental organizations, in collaboration with scientific experts and the corresponding governments in each country, are encouraging the implementation of existing mitigation measures that allow for the continuation of the fishing activity without putting the birds at risk. Such measures, which do not carry any reduction in the number of fish caught, must be implemented in every vessel and for each setting of longline in order to be fully effective.

A large number of threatened seabird species gather in the South American continent, which places it as one of the most important regions worldwide in conservation terms. Important fisheries occur in South American waters too, and these have different levels of development and different impacts on seabirds. Despite the growing implication of authorities and stakeholders in recent years, the bad status of seabird populations requires firm and serious commitments and that specific measures be adopted as a matter of urgency.

With the aim of reducing incidental mortality of seabirds to levels that do not threaten their populations, the following activities should be developed in each country:

- Promote research on the levels of seabird mortality in each individual fishery.
- Implement known mitigation measures effectively in all those fisheries for which there is an indication that seabird mortality is taking place.

- Improve existing mitigation measures and develop new measures for current and future fisheries.
- Establish, re-establish or maintain, as appropriate, suitable schemes of scientific observers who register data on seabird mortality.
- Develop training and educational programmes for the fishing sector on fishing techniques that are compatible with the conservation of seabirds.
- Inform and create awareness among the general public on seabird conservation problems.
- Incorporate in their national legislations appropriate measures for the conservation of seabirds.
- Develop, approve and implement in each country a National Plan of Action to Reduce the Incidental Catch of Seabirds in Longline Fishing, following the recommendations of FAO.
- Promote the signature of the international agreements and legal measures relevant to seabird conservation, in particular the Agreement for the Conservation of Albatrosses and Petrels (ACAP).
- Collaborate in a decisive manner in the eradication of illegal, unreported and unregulated fishing.
- Develop catch certification and ecolabelling schemes.
- Encourage that the development of new fisheries be done under an ecosystem approach, carrying previous assessments of the environmental impact that they might cause and disposing measures to minimize or to correct such impact.
- Promote the cooperation at all levels among companies, non-governmental organizations, government agencies and research institutes.
- Facilitate the collaboration and data exchange on seabird mortality rates and population status among the different countries.
- Determine the criteria to define important areas for breeding, foraging, migrating and resting seabirds, make inventories and provide those areas with legal protection.
- Disseminate this Strategy and the conservation needs of South American albatrosses and petrels in international fora.

ACAP**Agreement on the Conservation of Albatrosses and Petrels**

Carles Carboneras (SEO/BirdLife) presented the current situation of the Agreement on the Conservation of Albatrosses and Petrels (ACAP). The Agreement was due to come into force on 1 February 2004, after the ratification of five countries: Australia, New Zealand, Ecuador, Spain and South Africa. Four other countries from the region had signed (Brazil, Chile, Argentina and Peru) but ratification was still pending. Representatives from those countries were reminded of the important role that could be played by delegations to the first meeting of the Parties, which would take place before February 2005. Important decisions would be made at that meeting (such as those related to the setting up of the Secretariat and the establishment of a Scientific Committee) and it would be very advantageous to be part of those discussions.

The participants reviewed the possibilities of new ratifications (such as Uruguay or the United Kingdom on behalf of Falkland Islands (Malvinas) and Tristan de Cunha) and discussed the role that they could play in relation to ACAP. Special attention was given to the implementation of ACAP's Action Plan and the new commitments that would be derived from it once it was put into action. It was agreed that a task force would be set up in future meetings with sufficient representation from the region (eg, Third International Albatross and Petrel Conference) to discuss ACAP further and to agree on the future steps.

SSS

Southern Seabird Solutions

Janice Molloy (New Zealand Department of Conservation) introduced herself as the convenor of Southern Seabird Solutions and presented the work of SSS since its inception. Born as an alliance of representatives from government, fishing industry, NGOs, seabird researchers, ecotourism operators, fisheries trainers and fishing gear manufacturers, its main goal is to promote fishing practices that avoid the incidental capture of seabirds throughout the Southern hemisphere. Seabirds are the best example of interconnectivity between countries and between oceans. Some albatross species that nest in New Zealand distribute over the Humboldt current during a significant part of the year, the most relevant example being the critically-endangered Chatham Albatross. Only through concerted actions in the different countries where the species occurs can the survival of birds such as this be guaranteed.

Most known breeding populations of albatross in the world are currently declining, which has resulted in all 24 species being threatened under IUCN criteria. Some of their threats are colony-based (habitat degradation, alien predators), but the most serious threats occur at sea: incidental mortality from fishing, as well as oceanic changes and pollution (plastic ingestion). There could be several implications of non-action (including severe restrictions for fishers) in New Zealand, so it is in everyone's interest to remove any negative aspects of fishing. For those reasons, it was decided that New Zealand should promote the joint work of individuals, organizations and institutions from several countries, because a lot more could be achieved than by those people acting separately.

Southern Seabird Solutions has been set up as a trust with a bottom-up approach, where fishers have a key role. Good operators are used as models to spread good practices with the aim of sharing expertise and ideas with other countries. In the years 2002–03, SSS has completed a report on the foraging ranges of seabirds, has promoted a fisher exchange experience with Chile, has produced a video on fishing best practice and has contracted an advisory officer for the South African tuna fishery. It has also carried out experiments with mitigation measures (line weighting) and is promoting a new fisher exchange with France (Réunion I.). SSS has established collaborations with international organizations (BirdLife International, WWF, International Fishers' Forum) and its activities have been endorsed by CCAMLR.

Looking towards the future, some new projects in which SSS could become involved include more fisher exchanges (with South America or with southern Africa), regional Fishers' Forums (e.g., in Latin America), fishermen workshops in ports, educational activities and assisting in finding funding sources. The Southern Seabird Solutions model has been very successful in New Zealand, having achieved a great deal in little time, but it still remains to be seen whether it will work in other countries.

4. ROUND TABLE ON MITIGATION MEASURES

MITIGATION MEASURES AND FISHERIES: SOLUTIONS FITTED TO EACH CUSTOMER

In a round table, the participants to the meeting contributed with their knowledge in both, fishing arts and mitigation measures, in order to assess potential solutions for each fishery. The session was conducted by Luis Mujica, manager of a fishing company in Chile. All known mitigation measures for each fishing art were mentioned and their viability commented. Details of the discussion are presented below.

NET FISHING

Pursing net

This fishing art is common in Peru and Chile. There is no data on seabird bycatch but opportunistic observations indicates no fatal interactions in this fishery. Peru, through their observers onboard anchovy fishery vessels will undertake preliminary assessment of the interaction between seabirds and the fishing operations. No mitigation measures exist for this fishery.

Trawl fishery

This fishing art is widely common in the area. Observations carried out by the “Seabirds at Sea Team” Falkland Islands (Malvinas) had identified three ways of interaction of seabirds with fishing gear, all of them with potential fatal consequences:

- i) interaction with the net while it is floating, previous to be hauled onboard;
- ii) collisions with the net-sonde cable;
- iii) collisions with the warp cables.

Mortality in the first case occurs by birds being entangled with the net while trying to steal some fish. Mesh size seems to be a key factor on seabird entangled rate, with larger sizes presenting large number of net-entangled birds and, therefore, incidental mortality rates. Potential mitigation measures include a better management of the hauling operation, in order to reduce the surface time of the net, and to clean up the net before each setting, in order to reduce attractiveness for seabirds.

Mortality by collision with cables (sonde and wraps) happens because of seabirds being distracted consuming the discards thrown almost constantly to the sea. Consequently, first mitigation measures are to accumulate the offal and discards onboard. Eventually, this material could be use to produce fishmeal (i.e., as happens in New Zealand fisheries) or its expulsion been planned in order to discharge the whole lot at once and not in parallel with the trawling operation. Secondary mitigation measures include the use of bird-scaring devices. There are two of this devices, streamer lines and “Brady Baffler”. The streamer lines are similar to those used in longline fishing and its aim is to prevent birds to approximate the cables. The “Brady Baffler” consists of two curtains of ropes and plastic cones, one on each side, that prevent seabirds from gathering in the area adjacent to the warp cable (Southern Seabirds Solutions 2002). Risk of collision with the netsonde cable could be eliminated by use alternative technology that not require this cable. Netsonde cables have been banned in New Zealand and CCAMLR waters since 1994/95.

LONGLINE FISHING

Superficial longlines

This fishing technique is used to catch common dolphinfish offshore Brazil. The hooks remain close to the surface all time and thus they represent a potential menace during the whole operation. The only mitigation measures known are the use of streamer line during setting, night setting and, under experimental stage, the use of blue-dye bait. Additionally, avoid offal discharge during setting increase the efficiency of the former mitigation measures.

Middle water longlines

This fishing technique is used to catch tuna, swordfish and sharks. Mitigation measures developed for this fishing art includes use of streamer lines, add lead-weights to the hook or noodles, blue-dye of baits and night setting. Additionally, avoid offal discharge during setting increase the efficiency of the former mitigation measures.

The use of streamer lines, when properly designed and operated, is an effective mitigation measure, particularly when use altogether with night setting. Add lead-weights to the hooks or noodles could be a palliative way to increase the sink rate of this line during setting, because add weights to the main line as in bottom lines is not applicable; however, essays at the moment had not been successful, mainly due to the low weight added. Blue-dye of bait has a very good prospect, particularly if used altogether with streamer lines and night setting.

Bottom longlines

This fishing technique is used to catch demersal species as hake, ling, hoki, southern blue whiting and Patagonian toothfish. The mitigation techniques used with this fishing art includes streamer lines, add weight to the main line and night setting. The proper use of this whole set of mitigation measures had demonstrated to reduce effectively the seabird incidental mortality.

Although fatal interaction between seabirds and fishing gear happens mainly during setting, non-fatal interactions during hauling could be important in some cases. Mitigation measures, such as offal discharge at the opposite side where the hauling window is placed, and use of streamer lines or a water curtain around the hauling window are altogether efficient measures to avoid interaction between seabirds and the hooks being hauled. More recently, some fishing vessels have a “moon-pool” inside the ship that allows hauling the line under extreme weather conditions; this configuration also avoid any contact between seabirds and the line being hauled.

5. NATIONAL PLAN OF ACTION (FAO–NPOA)

Experts representing countries that have finalized the development of their National Plan of Action for Reducing Incidental Catch of Seabirds in Longline Fisheries (NPOA–Seabirds) where invited to the Workshop. These experts gave presentations on the development of their NPOAs with an overview of the plans. The NPOA of the following countries were presented:

- NPOA – USA (Kim Rivera)
- Local POA – Falkland Islands (Malvinas) (Grant Munro)
- NPOA – New Zealand (Janice Molloy)
- NPOA – Brazil (Tatiana Neves)
- NPOA – Chile (Carlos Moreno)

The NPOA of USA is the only one that to date has been implemented in commercial longline fisheries. Brazil and Falkland Islands (Malvinas) have prepared a final document of their NPOAs, whereas New Zealand has prepared a draft to be finalized in early 2004. In Chile, a new project with the objective of developing an NPOA has been initiated.

6. DISCUSSION GROUPS

This agenda item was discussed by two groups: one group dealing with fisheries and the other one dealing with seabirds. The conclusion and recommendations of both groups were presented and adopted in plenary.

Fisheries Group

Priority issues for cooperation

From a fishery perspective, the following priority activities were identified:

1. Complete the assessment of the incidental catch of seabirds in longline fisheries.
2. Review the situation of incidental catch of seabirds, country by country.
3. Assess and test different mitigation measures to avoid the incidental catch of seabirds.
4. Prepare a glossary of terms used in relation to the interaction of fisheries and seabirds.

These priority activities apply mainly to the following fisheries/regions/countries:

Pacific swordfish fisheries: Chile and Peru;

Pacific and Atlantic toothfish fisheries: Argentina, Chile, Falkland Islands (Malvinas), Peru, Uruguay;

Pacific mahi-mahi (*Coryphaena*) fisheries: Ecuador/Peru; and

Atlantic tuna/swordfish/shark fisheries: Brazil, Uruguay.

Joint projects

The following ideas for joint projects were identified:

1. Training of observers.
2. Standardization of methodologies for observations and research.
3. Assessment and improvement of mitigation methods and devices.

Although these project ideas can be formulated and implemented at national level, they are conceived rather for regional cooperation.

Funding

The following funding sources were identified:

1. Governmental agencies. Mainly fisheries administration and fishery research.
2. International organizations (FAO, PNUMA and PNUD).
3. Non-governmental organizations (BirdLife International, WWF and WCS).
4. Private sector (fishing, oil and tourism companies, and banks).

Activities at country level

Apart from the priority activities and the project ideas identified, which should be carried out either at regional or at country level, the participants agreed that the most important activity to be developed at country level is the formulation of a draft National Plan of Action, which identifies main actions, participants, funding sources and deadlines to reduce the mortality of seabirds in longline fisheries.

Seabirds Group

Priority species

From the perspective of seabird conservation, the Group identified a list of species which should be accorded priority by country. The list of species was selected according to their level of bycatch or vulnerability to fishing gear if no information on bycatch is available, their level of conservation according to IUCN list, their relative abundance in the EEZs of concerned countries, species little known, and species which study require a regional approach. The list of species selected by country is shown in the Annex.

Joint projects

The following species/countries were identified for specific joint projects of cooperation:

South American Region:

1. Black-browed albatross and White-chinned petrel/All South American countries.

Pacific coast:

2. Waved albatross and Parkinsoni's petrel/Ecuador, New Zealand and Peru.
3. Chatham albatross, Buller's albatross and Salvin's albatross/Chile, New Zealand and Peru.

Atlantic coast:

4. Tristan albatross, Atlantic yellow-nosed albatross, Spectacled petrel and Great shearwater/Argentina, Brazil, South Africa, UK islands of Central Atlantic and Uruguay.
5. Wandering albatross, Black-browed albatross, White-chinned petrel/Argentina, Brazil, Falkland Islands (Malvinas), South Georgia and Uruguay.

Atlantic and Pacific coasts:

6. Northern royal albatross and Southern royal albatross/Argentina, Chile and New Zealand.

7. Grey-headed albatross/Argentina and Chile.

Priority activities at country level

Assess the incident catch of seabirds in fisheries suspected of having problems, and which have not been yet studied.

Assess, implement and develop mitigation measures in fisheries showing incidental catch of seabirds.

Study the spatial and temporal distribution of seabirds, according priority to those considered with a critical state of conservation.

Estimate the abundance of seabirds within the Exclusive Economical Zone (EEZ) of each country.

Funding

The following funding sources were identified:

1. Governmental agencies,
1. Agreement for the Conservation of Albatroses and Petrels,
3. Non Governmental Organizations (BirdLife International, WWF and WCS) and
4. Private sector (fishing, oil and tourism companies, and banks).

Annex

List of seabirds recommended to accord priority for studies and conservation, according to their vulnerability for the fishing gear.	
Argentina	
Tristan albatross	<i>Diomedea dabbenena</i>
Northern royal albatross	<i>Diomedea sanfordi</i>
Southern royal albatross	<i>Diomedea epomophora</i>
Wandering albatross	<i>Diomedea exulans</i>
Atlantic yellow-nosed albatross	<i>Thalassarche chlororhynchos</i>
Black-browed albatross	<i>Thalassarche melanophrys</i>
Grey-headed albatross	<i>Thalassarche chrysostoma</i>
Southern giant petrel	<i>Macronectes giganteus</i>
Spectatled petrel	<i>Procellaria conspicillata</i>
White-chinned petrel	<i>Procellaria aequinoctialis</i>
Great shearwater	<i>Puffinus gravis</i>

List of seabirds

recommended to accord priority for studies and conservation,
according to their vulnerability for the fishing gear.

Brazil

Tristan albatross	<i>Diomedea dabbenena</i>
Wandering albatross	<i>Diomedea exulans</i>
Atlantic yellow-nosed albatross	<i>Thalassarche chlororhynchos</i>
Black-browed albatross	<i>Thalassarche melanophrys</i>
Spectatled petrel	<i>Procellaria conspicillata</i>
White-chinned petrel	<i>Procellaria aequinoctialis</i>
Great shearwater	<i>Puffinus gravis</i>

Chile

Northern royal albatross	<i>Diomedea sanfordi</i>
Southern royal albatross	<i>Diomedea epomophora</i>
Wandering albatross	<i>Diomedea exulans</i>
Chatham albatross	<i>Thalassarche eremita</i>
Salvin's albatross	<i>Thalassarche salvini</i>
Buller's albatross	<i>Thalassarche bulleri</i>
Black-browed albatross	<i>Thalassarche melanophrys</i>
Grey-headed albatross	<i>Thalassarche chrysostoma</i>
White-chinned petrel	<i>Procellaria aequinoctialis</i>

Peru

Waved albatross	<i>Phoebastria irrorata</i>
Chatham albatross	<i>Thalassarche eremita</i>
Salvin's albatross	<i>Thalassarche salvini</i>
Buller's albatross	<i>Thalassarche bulleri</i>
Parkinson's petrel	<i>Procellaria parkinsoni</i>
White-chinned petrel	<i>Procellaria aequinoctialis</i>

Uruguay

Tristan albatross	<i>Diomedea dabbenena</i>
Wandering albatross	<i>Diomedea exulans</i>
Atlantic yellow-nosed albatross	<i>Thalassarche chlororhynchos</i>
Black-browed albatross	<i>Thalassarche melanophrys</i>
Spectatled petrel	<i>Procellaria conspicillata</i>
White-chinned petrel	<i>Procellaria aequinoctialis</i>
Great shearwater	<i>Puffinus gravis</i>

7. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

1. The participants of the Workshop unanimously agreed that an evident progress had taken place in dealing with incidental catch of seabirds in the longline fisheries in South America, if compare with the situation when the first workshop on the issue was held two years ago. The main achievements in this question were summarized as follows:

- All countries concerned have started to work on the assessment of incidental mortality of seabirds in longline fisheries.
- All countries have identified a set of mitigation measures and some of them have initiated studies to implement and/or to improve such measures.
- All countries have initiated the preparation of NPOAs – Seabirds, though the degree of achievements varies from country to country.
- A higher commitment from governmental institutions and also from the fishery industry to deal with the conservation of seabirds is observed.
- Some progress has also been achieved in the economic assessment of interaction between seabirds and marine fisheries.

2. The meeting also concluded that there exists a good basis for regional cooperation on the reduction of incidental catch of seabirds in countries with longline fisheries in South Pacific and South Atlantic. In this context, the cooperation between FAO and BirdLife International, which allowed the holding of this workshop, was commended.

Recommendations

1. The Workshop recognized the need for countries with fisheries interacting with seabirds in South America, to continue the study of this problem in order to ensure the sustainability of the seabirds population along with the sustainability of concerned fisheries.

2. It was also recognized the need for an involvement of all interested parties in the solution of this problem, particularly the participation of key institutions and their specialists, like fishery management authorities, fishery research institutions, relevant NGOs, and fishing companies. The need for improving the scientific observation processes was also stressed.

3. The meeting made the following recommendations:

- Encourage the assessment of incidental mortality of seabirds in longline fisheries and intensify the research on suitable mitigation measures for specific fisheries, as well as research oriented to improve the mitigation methods and devizes.
- Continue the development of methodology to assess the economic impact of incidental catch of seabird in longline fisheries and develop methodologies to assess the economic impact of mitigation measures in longline fisheries.

- Encourage the development of regional research on seabird bycatch and also on the implementation and the improvement of mitigation measures in longline fisheries.
- Continue the cooperation between FAO and BirdLife International. The next steps in this cooperation should be (a) the publication of a technical paper on the interaction of seabirds and longline fisheries in the South American seas and (b) the holding of a second Workshop on this issue by the end of 2005.
- Study the possible interaction of trawling fleets with seabirds in the high seas of South East Pacific.
- Participate actively in international agreements like Galapagos Agreement and ICCAT.
- Disseminate information on ESCAPE.
- Encourage the adoption by concerned countries of the Agreement on the Conservation of Albatrosses and Petrels and the participation of these countries in the research programme of the Agreement.

8. COMMITMENTS

At the end of the meeting, the participants committed themselves to support the National Plans of Action on Seabirds in their respective countries/organizations. Some of the main individual commitments were as follows:

- Support the assessment of the impact of fisheries in the conservation of seabirds.
- Support the implementation and the improvement of mitigation measures to avoid bycatch of seabirds.
- Disseminate information on the interaction of fisheries and seabirds.
- Disseminate the report of the present Workshop.
- Encourage the adhesion of the respective countries to international agreements dealing with the conservation of seabirds.

Agenda

1. Introduction
2. National Reports
 - Argentina (Patricia Gandini)
 - Brazil (Tatiana Neves)
 - Chile (Carlos Moreno/Javier Arata)
 - Peru (Gladis Cárdenas)
 - Uruguay (Yamandú Marín)
3. Presentation and Revision of Regional Agreements
 - ESCAPE – South American Strategy for the Conservation of Albatrosses and Petrels
 - ACAP – Agreement on the Conservation of Albatrosses and Petrels
 - SSS – Southern Seabird Solutions
4. Round Table on Mitigation Measures
 - The use of mitigation measures in South American fisheries
 - Development of new mitigation measures
 - SEO/BirdLife Concourse of ideas
5. National Plan of Action (FAO–NPOAs)
 - NPOA – USA (Kim Rivera)
 - Local POA – Falkland Islands (Malvinas) (Grant Munro)
 - NPOA – New Zealand (Janice Molloy)
 - NPOA – Brazil (Tatiana Neves)
 - NPOA – Chile (Carlos Moreno)
6. Discussion Groups
 - Priorities
 - Projects
 - Funding sources
 - Country activities
7. Conclusion and Recommendations
8. Commitments
9. Closure of the Session

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The International Plan of Action for Reducing Incidental Catch of Seabirds in Longline Fisheries (IPOA–Seabirds) was developed by FAO in response to the growing concern.

The IPOA-Seabirds requests countries with longline fisheries that interact with seabirds to develop a national plan (NPOA–Seabirds) to reduce the incidental seabird catch in their fisheries. Several countries in the South American region have large populations of albatrosses and petrels, and existing assessments and data indicate that significant numbers of seabirds are caught annually in several longline fisheries in this region. Thus FAO and BirdLife International organized this joint workshop to discuss albatross and petrel conservation and to initiate the development of NPOA–Seabirds in the regional countries.

Representatives of different disciplines (research institutes, fishing industry, non-governmental organizations, governmental agencies) from Argentina, Brazil, Chile, Peru and Uruguay met to discuss topics related to implementation of NPOA-Seabirds. National reports were presented giving an overview of the problem and the status of the progress in the development of their NPOA-Seabirds. Experts representing the United States of America and New Zealand, which have finalized the development of their NPOA-Seabirds, gave presentations of these works. Presentations were also given of regional agreements such as the South American Strategy for the Conservation of Albatrosses and Petrels (ESCAPE), the Agreement on the Conservation of Albatrosses and Petrels (ACAP) and the Southern Seabird Solution (SSS). Discussion groups were set up to discuss mitigation measures, priorities, projects and potential funding sources.

