



**Agreement on the Conservation of Albatrosses and Petrels**  
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**Compilation of information on Argentina, Brazil and Uruguay for Capacity Building**

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## **Introduction**

The countries involved in albatross and petrel conservation in South America have produced relevant information and developed important actions that address seabird conservation. The experience and knowledge accumulated by these countries are available in various documents, articles and reports. In some cases the documents have been produced in local languages and internal documents and websites in order to support management decisions. It is necessary, therefore, to produce a document compiling all information available. Such a document is important for international organizations, in particular ACAP, to increase the knowledge about the characteristics, strength and potential of each country or region.

The primary objective of this review was to compile all available information for helping ACAP managers to develop an effective strategy for the implementation of the ACAP Action Plan. Additionally, this document will be potentially used as a tool facilitate the development of capacity building programmes, hence promoting seabird conservation in this continent..

To accomplish the objectives of this work all available literature was reviewed through a systematic search of national and international instruments, scientific reports and conservation initiatives relevant to seabird conservation in South America. Considering the majority of this research was undertaken during the three months the proponent was on secondment at the ACAP headquarters in Hobart, Tasmania, and taking into account the massive quantity of information needed to accomplish these objectives, it was decided to include only three countries (Argentina, Brazil and Uruguay) among the previous six countries selected (also Chile, Equator and Peru). The information compiled was used to subsidize to identify Capacity Building initiatives that could be of benefit to seabird conservation in South America, as presented in AC4 Doc. 27.

## **Objectives**

1. Compiling all relevant information from South American nations regarding the conservation of seabirds in the ACAP context and to identify criteria to prioritize actions and capacity building in these countries or regions;
2. Identify tasks and opportunities for capacity building in South America that address the implementation of ACAP;
3. Identify important information that could be compiled to assist with implementation of the Agreement.

### **Template proposed**

The main aim of this report is to identify the fisheries characteristics of Argentina, Brazil and Uruguay, the actions addressed regarding conservation of seabirds, the political involvements, advocacy, etc. Also this report aims to compile information about the people involved in these countries including authorities, experts, NGO representatives, and fishermen. Finally, this report aims to identify the strengths and similarities within each country. For that, the following template was proposed:

1. Fisheries that affect or potentially affect seabirds;
2. Known capture rates for each fishery;
3. Actions addressed to reduce the seabird bycatch in these fisheries:
  - a. Existing legislation;
  - b. Related agreements and/or treats signed / ratified (including ACAP);
  - c. Research;
  - d. Education / awareness activities;
  - e. Efforts to introduce mitigation measures on the vessels;
  - f. Percentage of vessels using mitigation measures;
  - g. Existing observers programs (considering the level of coverage and the quality of data for seabirds).
4. Identification of stakeholders involved and activities in each country:
  - a. Governmental departments / organizations;
  - b. Research institutes and universities;
  - c. Fishery industries and fishermen;
  - d. NGOs,
5. Existing international / regional collaboration.

The complete information for Argentina, Brazil and Uruguay is available in Annexes 1, 2 and 3 respectively.

### **Discussion on the capacity building template**

Among the items suggested on the template, information on fisheries that affect birds, seabird capture rates, existing legislation, research, education and observers programs were considered priorities.

The information known on fisheries that affect birds requires greater understanding. Each fishery known to impact or potentially impact seabirds is described here. This information is useful to (1) identify the fisheries, (2) understand the complexity of the issues for each country, (3) identify countries with similar fisheries and (4) identify possible collaboration among countries.

This information is available in scientific papers and also compiled in NPOAs for countries that have already produced these documents.

It is recognized, however, that not enough information is known to subsidize studies of seabird bycatch assessment. A more detailed template is necessary on fishing effort distribution, percentage of observer's coverage, and data on birds caught for inclusion on the ACAP database. With this information, it is possible for countries to find common ground within their fisheries and can subsidize potential projects or exchange information among fishermen and researchers.

In the example below, three fisheries were identified that occur in more than one country according to the discussions already conducted between researchers of Parties and Range States. Demersal Longline fisheries for Patagonian toothfish that occurs in Argentina and Uruguay, demersal longline fish and pelagic longline fish that occur in Brazil and Uruguay. These are potential fisheries where projects of exchange of knowledge can be applied.

The compilation of available information on seabird bycatch is crucial for ACAP. Despite some data being available in scientific publications in some cases data is only presented in internal papers, usually in local languages. In this way, a compilation of all available data on seabird bycatch is crucial to understand the problem in a regional view. This assessment is part of the Advisory Committee work programme. In item 4.5, regarding Seabird bycatch, it is required to make a review of available information on foraging distribution and seabird bycatch to assess the risk of fishing operations on ACAP species in fishing regions.

The information on existing legislation is related to the point 7.2 of the Advisory Committee Work Programme that foresees the development of a directory of relevant legislation to help Parties and AC in reducing their reporting needs. This directory could also potentially be useful to any Party wishing to develop further legislation.

The legislation from each country was obtained mostly from governmental websites. The original title of the legislation (in the original language) as well as the date of publication and a summary of its contents are presented in the table. The most important information, however, is the website address where the document can be assessed. All legislation was categorized in general or specific. In the first case, legislation addressed environmental issues or fisheries that indirectly affect seabirds and the second legislation was created with seabird conservation as the main objective.

In the same manner, information compiled on other agreements and/or treaties signed / ratified by the ACAP Parties and Range States is important to understand how international forums in other countries cooperate. This makes it easier to identify when they can collaborate with each other and with ACAP. This is particularly important in the RFMO meetings, considering the ACAP Resolution 2.7 for Fisheries Bycatch. This indicates that the Agreement shall proactively engage and facilitate information exchange with relevant RFMOs, ensure that seabird experts are included on Parties delegations to relevant RFMOs and propose, develop, support and implement RFMO resolutions and other measures that aim to reduce seabird bycatch.

Researchers have previously addressed seabird conservation, education and awareness activities and are already being provided by Parties throughout the national reports. In this manner, all information presented on the annexes can be found in the national reports.

Also, information on the national observer's schemes is absolutely fundamental for capacity building works in South America, considering that it is one of the most important areas for exchange of information. Conversely, the items about efforts to introduce mitigation measures on vessels and percentage of vessels using mitigation measures were identified as unavailable information.

The list of stakeholders suggested in the annexes is crucial to create networks or simply to establish communication overall for government, fisheries, researchers and NGO representatives. It was recognized, however, that this list should be updated annually because of frequent changes in fisheries and governmental sectors.

Finally, information on existing international and regional collaborations are up date regarding ACAP files on other capacity building initiatives. Many capacity building initiatives involve more than one country in South America. This is the main aim of Albatross Task Force of BirdLife/RSPB, FAO Best Practice Guidelines on NPOAs, Ecuador - Argentina - BirdLife International - Educative Project for Ecuadorian Observers, among others.

### **Additional information needed for ACAP implementation**

Taking account all efforts in compiling the information on Argentina, Brazil and Uruguay, it was identified some important information is not currently readily. This paper suggests the following information to be collected:

1. Fisheries that affect or potentially affect the seabirds;
2. Known capture rates for each fishery;
3. Existing legislation;
4. Related agreements and/or treaties signed / ratified (including ACAP);
5. Existing observers programs (considering the level of coverage and the quality of data on seabirds);
6. Identification of stakeholders involved and in activities in the country (governmental departments / organizations, research institutes and universities, fishery industries and fishermen and NGOs);
7. Existing international / regional collaboration.

## ARGENTINA

**1. Fisheries that affect or potentially affect seabirds****Demersal Longline for Patagonian Toothfish, Kingclip and Yellownosed Skate**

Most of the 12 longline vessels operating in Argentine waters during the 1990s used the Spanish (double line) method while targeting mainly Patagonian toothfish *Dissostichus eleginoides* and kingclip *Genypterus blacodes*. More recently on board freezer longline vessels are fishing legally in the Patagonian shelf, most of them using the autolining (Mustad single line) method (Favero 2003).

Laich et al. 2006 reported 11 Argentinean long-line vessels operating over the continental shelf and shelf-break. Four of the vessels used the Spanish method and the rest used the autolining method. The Spanish method consists of two lines, the fishing line and an auxiliary line. In vessels using this method, the bait is manually attached to the hooks. In contrast, in the autolining method only one line is used and the bait is automatically attached to the hooks. The target species of the demersal long-line fisheries operating in the Argentinean Shelf and shelf-break are: Patagonian Toothfish (*Dissostichus eleginoides*), Kingclip (*Genypterus blacodes*) and Yellownose Skate (*Dipturus chilensis*). The Patagonian Toothfish fishery operates along the shelf-break from Tierra del Fuego to 35°S; the Kingclip fishery concentrates its effort in front of San Jorge Gulf; and the Yellownose Skate fishery operates primarily in waters off Buenos Aires (south to the mouth of Río de la Plata) (Laich et al. 2006).

**Demersal Longline for Kingclip**

A detailed description of the longline for kingclip is provided in Seco Pon *et al* 2007 as follows: the vessel targeted Kingclip using semi-pelagic fishing gear. Longlines consisted of several sections, or “magazines”, each holding 1050 Mustad J-shaped hooks attached to a 10mmnylonpolyester mainline (or “mother line”) by short (0.6 m) secondary nylon snoods. The snoods were spaced at regular intervals (1.3 m) on the mainline. The longline was set with a Mustad autobaiter, using chunks of thawed Chilean squid *Dosidicus gigas* as bait. The gear included weights (4–5 kg stones in a netting bag) or buoys (250mm diameter plastic floats) alternately attached every 70 hooks (91 m) on the mother line. Both weights and floats are manually attached with 1m nylon snoods to every line during setting operations. To correctly space weights and floats, the deck boss indicates to the crew when to attach either a weight or a float. Weights are used to prevent the line drifting from its position on the seabed, while floats lift the gear off the seabed, enabling fishing to occur at different depths in the water column. Each line carried up to 35,000 hooks and lines ran up to 45 km long. Line setting lasted from 0130 to 0310 h (usually starting about 2200 local time) and hauling usually took from 3 to 11 h to complete. Lines were left in the water for up to 16 h before hauling commenced. Fish were processed as they came onboard and the offal (comprising guts, heads and tails) was discarded into the ocean.

**Demersal longline for Hake**

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.

### **Trawl for Hake**

The trawl fishing vessels are capable to process the fish on board and to maintain the fishing production in freezers. The vessels usually stay at sea for more than 30 days and the fishing effort distribution includes different parts of the continental shelf depending of the target species and kind of on board factories. There three kinds of vessels according the process method: freezers, austral and "surimeros" this last one related to those vessels specialized in making surimi. The fishing gear can be bottom, pelagic or semi-pelagic trawl nets. The majority (about 70%) are of freezing storage vessels. All this vessels together produced close to 300 thousands tones in 2006. The target species are Argentinean hake (*Merluccius hubbsi*), Patagonian grenadier (*Macruronus magellanicus*) for the freezer fleet, Southern blue whiting (*Micromesistius australis*) and Patagonian grenadier for the Surimi fleet and Tadpole codling (*Salilota australis*) for the austral fleet.



2. Known capture rates for each fisheries

Longline Type	Location	Mean Capture Rate n/1000 hook	Range Capture Rate n/1000 hook	No. of Hooks	Comments	References
Demersal for Patagonian Toothfish and Trawl for Hake	Argentina	---	---	25,386,000	Anecdotal data on bycatch and seabird collisions on net cables	Schiavini et al. (1997)
Demersal for Toothfish and Kingclip	Argentina - Patagonian Shelf	0.04	0-0.2	~14.8 millions	Steep decline in capture rate during years of the study; 99% of sets with mitigation measures.	Favero et al. (2003)
Demersal for Kingclip, Patagonian toothfish and Yellownosed skate	Argentina - Patagonian shelf and shelf break	0.014 <sup>1</sup>	(sd=0.090)	Not explicit but mentioned to be 30 million per year, thus ~150 million	<sup>1</sup> Only analyzed for White-chinned Petrel. Environmental variables affecting capture were detected.	Laich & Favero (2007)
Demersal for Kingclip, Patagonian toothfish and Yellownosed skate	Argentina - Patagonian shelf and shelf break	0.03	0.001-0.18 (sd=0.39)	19,067,100		Laich et al. (2006)
Demersal for Kingclip	Argentina - Patagonian shelf	0.071	0.034-1.53	1,033,900	Single vessel, summer.	Seco-Pon et al. (2007)

3. Actions addressed to reduce the seabirds bycatch in these fisheries:

a. Existing legislation

Act Number/reference	Data location	Main objective	Aspect
<p>Apruébase el Acuerdo sobre la Conservación de Albatros y Petreles, suscripto en Canberra, el 19 de junio de 2001.</p> <p>Ley Nro: 26107 Sancionada el 07/06/2006</p>	<p><a href="http://www.ambiente.gov.ar/?aplicacion=normativa&amp;IdNorma=818&amp;IdSeccion=35">http://www.ambiente.gov.ar/?aplicacion=normativa&amp;IdNorma=818&amp;IdSeccion=35</a></p>	<p>Approve the ACAP signed in Canberra in 19<sup>th</sup> of June of 2001</p>	<p>Specific</p>
<p>Ley Nacional de Fauna Silvestre Ley 22.421 De 05/03/1981</p>	<p><a href="http://www2.medioambiente.gov.ar/mlegal/fauna/flora/ley22421.htm">http://www2.medioambiente.gov.ar/mlegal/fauna/flora/ley22421.htm</a></p>	<p>National Law for Wild Fauna - According to this law, it is forbidden to import, introduce or maintain livespecimens, semen, embryos, eggs, or larvae of any species that can change the ecological equilibrium, affect economical activities or disturb the enforcement of this law</p>	<p>General</p>
<p>Decreto Reglamentario N° 691/81</p>	<p>Not available</p>	<p>Article 116 establishes the importation of live wild fauna request a previous authorization of the authorities</p>	<p>General</p>
<p>Resolución SRNYAH 376/1997</p>	<p>Not available</p>	<p>According with this resolution, the introduction of new alien species requires an Environmental Impact Assessment</p>	<p>General</p>

Régimen Federal de Pesca Ley Nacional 24.922	<a href="http://www.ambiente.gov.ar/?aplicacion=normativa&amp;IdNorma=122&amp;IdSeccion=35">http://www.ambiente.gov.ar/?aplicacion=normativa&amp;IdNorma=122&amp;IdSeccion=35</a>	Federal Regime of Fisheries Article 17 considers the harmful effects caused by the fisheries in nearby systems	General
Resolución Consejo Federal Pesquero 3/2001	<a href="http://www.cfp.gov.ar">www.cfp.gov.ar</a>	This Resolution asked INDEP (National Institute for the Research and Development of Fisheries) for adequate evaluation reptile, bird and mammal bycatch during commercial fisheries activities	Specific

- b. Related agreements and/or treaties signed / ratified (including ACAP).

**ACAP**

Argentina signed the Agreement 19<sup>th</sup> January of 2004 and ratified the ACAP through Law nº 26,107 and came into effect in Argentina 1<sup>st</sup> of November of 2006.

**CBD - Convention on Biological Diversity**

As a decision to join efforts for conservation and sustainable use of biological diversity to benefit present and future generations, the Argentinean National Government signed in 1992 the Convention for Biological Diversity. This was approved by the National Congress through the Law nº 24375.1. More recently, in 2003, the Argentinean Government created the National Strategy on Biological Diversity (Estrategia Nacional sobre Diversidad Biológica) through the Resolution 91/03. Several activities described in this document are in accordance with the ACAP objectives or support albatross and petrel conservation, specifically the identification, protection and recuperation of threatened species (cap. vii), preventing and controlling alien species (cap. viii), communication, education and capacity building (cap. xiv), and economical aspects and incentives for the conservation and sustainable uses of biological diversity (cap. xv).

**Antarctic Treaty**

Argentina ratified the Antarctic Treaty through National Law 15802 (Ley Nacional 15802). The Antarctic National Direction (Dirección Nacional del Antártico - DNA), created by National Law 18.513/1969 (Ley Nacional 18.513/1969) is the local authority responsible for planning, programming, driving, coordinating and controlling Argentinean Antarctic activities, leaving the Army to provide logistical support for scientific activities and their maintenance.

**Madrid Protocol - Protocol on Environmental Protection to the Antarctic Treaty (1991)**

Argentina has approved the Madrid Protocol through the Law 24.216/1993. This is particularly important for ACAP, considering that Giant Petrel colonies are based around the Argentinean Antarctic Base. The waste management activities from this installation are adjusted to the Antarctic Waste Managing Plan whose objective is to establish the proceedings regulated by the Annexes III and IV of Madrid Protocol. Conversely, for colonies placed on the Special Protected Antarctic Zones, scientific and logistical tasks follow the established rules according to the Annex V of Madrid Protocol.

- c. Education / awareness activities

Aves Argentinas has implemented outreach activities about seabird conservation issues addressed to the general public. The main objectives of these activities was to inform people about the bird diversity distributed in Argentinean seas and also make the general public aware about the problems that affect seabirds at sea. For this purpose, notes were disseminated via broadcast (radio, newspaper, etc.), and institutional magazines. Additionally, technical notes were disseminated in the Patagonian region, particularly by a session on the website [www.avesargentinas.org.ar](http://www.avesargentinas.org.ar).

Laminated cards were distributed among crew members and observers. A pamphlet explaining seabird issues and the use four mitigation measures that could be easily adopted by fishers was printed out. These are also being distributed among the main stakeholders.

Others educational activities have being conducted by Fundación Vida Silvestre Argentina, CENPAT, University of Mar del Plata among others.

d. Efforts to introduce mitigation measures on the vessels

Practicability and effectiveness of seabird deterrent measures to avoid and minimize seabird mortality must be economical and voluntary compliance is being tested on ARGENOVA S.A. vessels obtaining seabird mortality rates with onboard observers trained to seabird identification.

University of Mar del Plata is currently working on mitigation in trawlers as well as researchers from CENPAT.

e. Percentage of vessels using mitigation measures

No available information

f. Existing observers programs (considering the level of coverage and the quality of seabird data)

There are different observer's schemes in Argentina. This can be provincial (coordinated by some provincial governments) or the National Observers Program (INIDEP). Most of these programs collect data on seabirds in different fishing operations such as longline and trawlers. However, some don't show a consistency within data set application. The preliminary technical document for the Argentinean NPA recommends the development a seabird observer program with an adequate coverage of the fishing vessels.

3. Identification of stakeholders involved and in activities in the country:

a. Governmental departments / organizations  
(This list can be completed with further information)

Carolina Dones	Dirección General de Asuntos Ambientales Ministerio de Relaciones Exteriores, Internacional y Culto Argentine Republic	<a href="mailto:cdn@mrecic.gov.ar">cdn@mrecic.gov.ar</a>
Dra. Romina Picolotti	Secretaria de Ambiente y Desarrollo Sustentable Jefatura de Gabinete de Ministros de la Nación	<a href="mailto:opadin@ambiente.gov.ar">opadin@ambiente.gov.ar</a>
Ing. Gerardo Enrique Nieto	Subsecretaría de Pesca y Acuicultura de la Nación	
Juan Carlos Berón	Secretaría de Pesca de la	<a href="http://www.chubut.gov.ar/pesca">www.chubut.gov.ar/pesca</a>

	Provincia de Chubut	
Dn. Andrés Manuel Manzón	Prefectura Naval Argentina Dirección de Protección Ambiental	<a href="http://www.prefectura naval.gov.ar">www.prefectura naval.gov.ar</a>
Ing. Agr. Héctor Mario Espina	Administración de Parques Nacionales	<a href="http://www.parquesnacionales.gov.ar">www.parquesnacionales.gov.ar</a>

b. Research institutes and Universities

Marco Favero	Universidad Nacional de Mar del Plata/CONICET	<a href="mailto:mafavero@mdp.edu.ar">mafavero@mdp.edu.ar</a>
Patricia Gandini	Universidad Nacional de la Patagonia Austral /CONICET	<a href="mailto:pagandini@apn.gov.ar">pagandini@apn.gov.ar</a>
	Instituto de Biología Pesquera Almirante Storni	
	Museo Argentino de Ciencias Naturales Bernardino Rivadavia	
	Instituto Antártico Argentino	
	Centro Nacional Patagónico	
	Centro Austral de Investigaciones Científicas	

c. Fishery Industries and fishermen

Julian Cruger	ARGENOVA S.A.	<a href="mailto:juliancg@argenova.com.ar">juliancg@argenova.com.ar</a>
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d. NGOs

Fabian Rabuffetti	Aves Argentinas	<a href="mailto:fabianrabu@hotmail.com">fabianrabu@hotmail.com</a>
Esteban Frere	BirdLife International	<a href="mailto:avesmarinas.sudamerica@avesargentinas.org.ar">avesmarinas.sudamerica@avesargentinas.org.ar</a>
Guillermo Caille	Patagonia Natural Coordinador del Área de Pesca	

4. Existing international / regional collaboration

A joint project between non-governmental organizations (NGOs), academia and fishing companies is being developed.

A publication about Black-browed Albatrosses is being planned by Argentina, Brazil and Uruguay.

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## BRAZIL

**1. Fisheries that affect or potentially affect the seabirds****INDUSTRIAL FISHERIES*****Pelagic longline fisheries conducted by the vessels based in the south and southeast regions***

This fishery is conducted by domestic and leased longliners based at the South and Southeast ports (Santos, São Paulo State; Itajaí, Santa Catarina State and Rio Grande, Rio Grande do Sul State). These activities started in Brazil in 1958, introduced by the Japanese, and suffered several interruptions and technological alterations. Since 1994, the vessels changed from the Japanese longlining fishing model – that was heavier, needed a larger crew and targeted the Tuna Fish – for the American model, lighter, targeting mainly the Swordfish (*Xiphias gladius*). It is noted an increase of the fleet dedicated to this activity, with a bigger participation of leased fleet from 1992 to 1996 and from 2001 to 2003.

The fishing equipment currently used in Brazil consists of a main line of polyamide monofilament, with around 80 km length, in which are attached 800 to 1,200 baited hooks in secondary lines, attached with metal snaps. The gear sinks slowly down to about 45-80 m depth, less than 70-120 m of the Japanese longline (Olmos *et al.*, 2001). The target species are Swordfish, Yellowfin Tuna (*Thunnus albacares*) and sharks, while deeper longlining have as target-species the Atlantic Albacore (*T. alalunga*) and Bigeye Tuna (*T. obesus*). The bait is the Argentinean Squid (*Illex argentinus*), generally imported from Argentina and Uruguay. Sardines (*Sardinella brasiliensis*) and the Pacific Chub Mackerel (*Scomber japonicus*) are also used, as well as baits imported from the South American countries on Pacific coast.

The main fishing areas for this fleet is concentrated in three major regions: along the coast of São Paulo, Santa Catarina and Rio Grande do Sul States; at the Rio Grande elevation and at the Hunter Channel and, in a minor scale, at the submarine chain of Vitória-Trindade (Azevedo, 2003). The area is chosen by the skipper in an empiric way, and there are several factors that determine the choice, such as sea surface temperature, depth and the period of the year. Anyhow, the distribution of the fishing effort of the national fleet from the South and Southeast seems to be, among all the fisheries in Brazil, the one that is most similar to the birds' distribution. For this reason, even using less quantity of hooks, this fishery is considered, together with the North and Northeast leased fleet, the one who offers higher risks of seabird incidental captures.

***Pelagic longline fisheries performed by the national and leased fleet based at the ports of North and the Northeast***

The leased vessels registered in Brazil, are based mainly in the Northeastern harbours of Recife port (Pernambuco State), Cabedelo (Paraíba State), Natal (Rio Grande do Norte State), and frequently in the south on Grande (Rio Grande do Sul State), Itajaí (Santa Catarina State) and Santos (São Paulo State) (Travassos & Hazin, 2005). The number of the leased vessels registered in the ports from the North and Northeast change dynamically between years and has decreased since 2002.



The leased vessels may present other longline gears different from the monofilament used by national vessels, such as the Spanish system with the main line made of braid polyamide and equipped with 2,000 hooks. It is unknown what the impact is of such gear on the seabird populations.

Despite the fact that the longline fisheries conducted by the foreign vessels are based in its majority at the north and northeast ports of Brazil, it may be highly interacting with albatrosses and petrels that are concentrated at the south and southeast coast. The great autonomy of the vessels, associated with the type of fishing storage (which are frozen in cold chambers) allows the fisheries from low latitudes at the North Hemisphere until the extremely south Brazilian coast. The fishing effort distribution of the leased fleet in Brazil depends on the period of the year and the target-species. Between May and September, the fisheries are concentrated at south of 20°S, when the target is the Atlantic Albacore (*T. alalunga*). This is done by alternating the longline configuration, generally with the increase or decrease in the number of the secondary lines, and searching for depth levels with bigger concentration of each species.

### ***Pole-and-line with live bait***

Under pole-and-line fishery we refer to industrial baitboat vessels targeting Skipjack tuna attracted to the vessel using live bait and a 'shower-like' method, frequently close to moored buoys and used worldwide to catch tuna. It started in Brazil in 1979 and now operated mainly from Itajaí, Rio de Janeiro and Rio Grande ports, all year round, in an area that extends from 20°S to 35°S (Castello and Habiaga, 1989; Meneses de Lima et al., 2000; Andrade et al., 2005). Thirty-three vessels operate from the port of Itajaí (UNIVALI, 2004), six vessels from Rio Grande, and a small number from Rio de Janeiro. The fleet using live bait to target Skipjack tuna attracts large numbers of seabirds, mostly Cory's shearwaters (*Calonectris diomedea*), CapeVerde shearwaters (*C. edwardsii*) and Great shearwaters (*Puffinus gravis*). Fishermen try to scare birds by hitting them with a metal piece attached to a pole-and-line. This practice can cause severe injuries (broken legs and scars on the back, neck and head) that can be more or less lethal.

### ***Bottom longline fisheries***

The bottom longline fisheries currently performed by the national fleet was introduced in 1994 by fisheries research cruises from the RV Orion of IPSP. Despite the fact that fisheries directed to the Snowy Grouper (*Epinephelus niveatus*), the Namorado Sandperch (*Pseudoperca* spp.) and the Tilefish (*Lopholatilus villarii*), performed with bottom lines, are historically used in Brazil, these researches allowed the introduction of steel cables and hydraulic cranes, becoming a technological support which culminates on the establishment of a national fleet capable to accomplish captures down to 600 m depth (Ávila-da-Silva & Bastos, 1999; Silva, 2000; Tutui et al., 2000; Ávila-da-Silva et al., 2001; Ávila-da-Silva, 2002). On board the fishes are kept in ice storage basements and the trips take 10 to 15 days, with a crew of 5 to 9 people. The main steel cable line is 6 to 7 nautical miles long and 4.5 to 8 mm in diameter; the secondary lines are 90 cm long and the distance between them is about 6 to 10 m (Ávila-da-Silva et al., 2001; Haimovici & Velasco, 2003). In the south and southeast of Brazil there has been a decline in the number of vessels that use this fishery, and there is a supposition that it could be almost extinct nowadays. Such fact is associated more to the low profitability of this fishery (due to the fast decline of explored stocks) than to the legal restricting factors. As a consequence, there has been a decrease in the impact on the seabird populations that interact with this fishery in Brazil. However, because of the high index of captures recorded

in 1998 – when the annual average fishing effort was about 66 17.7 millions of hooks, causing the capture of 4,214 (between 2,201 and 6,226) seabirds per year (Olmos et al., 2001) – the bottom longline fishery must be monitored to evaluate the capture of seabirds, and the licensing of new foreign vessels must be rigid.

### ***Bottom gillnet for monkfish off southern Brazil***

Monkfish gillnet fishery was conducted off southern Brazil in 2001 by nine authorized vessels originally from Spain. These vessels were 26.7–39.6m long with gross tonnage ranging between 72 and 362 t and frozen stocking capacity ranging between 45 and 110 t. Fishing trips included 24–86 sets, each of them consisting of 60–400 stringed nets, which were kept immersed for 110.6 h on average ( $\pm 1.5$  S.E.M.). The nets were 50m long and 13.5 meshes high and were anchored to the sea floor by 60–80 kg weights. Mesh size used by all vessels was 280mm (stretched mesh). This fishery seems to be important regarding to the impact to bird populations at the Brazilian coast. Birds are captured during settings, because they are attracted to the living organisms that got adhered to nets during previous fishing. Captures of White-chinned petrels (*Procellaria aequinoctialis*), Spectacled Petrels (*P. conspicillata*) and Antarctic Fulmar (*Fulmarus glacialis*) have been registered along the Santa Catarina's coast (F. Peppes, personal observation). Also Perez & Warhlich (2005) reported seabird (Procellariidae) captures using data from the cooperation between Brazilian Secretariate of Fisheries (SEAP/PR) and Universidade Vale do Itajaí (UNIVALI) that maintains dedicated observers on board.

## **ATISINAL FISHERIES**

### ***Surface longline fishery for the capture of the Dolphin, conducted mainly by the vessels based at Itaipava/ES ports***

The gear consists of a multifilament 5mm mainline up to 5.2 nautical miles long, two secondary lines between small Styrofoam buoys, and hooks around 5 cm in total length, 'J' type, similar to the Mustad® No. 8 baited with frozen Brazilian sardines, Skipjack meat or live bait (mackerel, or sardines). Secondary lines are 2m long and hooks remain at 2–2.5m from the surface. Itaipava fishermen developed this technique and it has spread to southern ports, with significant landings in Santos (SP) and Itajaí (SC) port. It is a strongly seasonal fishery, in November and December in southern Brazil in waters 200m depth, and from October to February off Rio de Janeiro and Espírito Santo coasts. Once or twice a day 600–1200 hooks are deployed for around 4 hours, and the boat sails along the mainline, hauling caught fish and rebaiting hooks. This fishery is sometimes carried out during daytime, while the longline for Swordfish is carried at night.

### ***Slow trolling***

Trolling fishery, locally known as 'corrigo' is a technique in which lines are trailed from the stern of a boat at different speeds. Lines are usually thick (2.5 mm) with variable length (5–90 m) baited with squid, sardines, skin and meat of Skipjack tuna, fresh pork skin or artificial lures such as strips of white rubber. Hooks are around 11 cm in total length, 'J' type, with flattened eye and barbed, similar to the Mustad® No. 2 'general purpose sea hook'. The hook is trailed on or close to the sea surface and a fisherman holds the line by hand. Length of the line and vessel speed are adjusted according to target fish: lines 5–12m long and 3 knots for Bigeye *Thunnus obesus* tuna frequently associated with FADs.

Also the fishermen can use lines 70–90m long and fish at 7 knots for large Yellowfin tuna *Thunnus albacares*, Albacore *T. alalunga*, and Dolphinfin. But this faster trolling apparently is less harmful for the birds than the slower one. Fishing operations frequently occur close to oilrigs, moored or floating buoys or other objects. When close to fish aggregating devices (FADs), trolling is frequently used in alternation with handlining: the boat trolls from a given location to the fishing point close to the FAD, when the boat is kept drifting and handlines deployed; after drifting a distance of a few hundred meters, troll lines are deployed and the boat moves again to the fishing point.

### **Handlining**

For the handlining fishery, each fisherman deploys a thin line against the current (1.2–1.4 mm) and the hook is around 6 cm in total length, 'J' type, similar to the Mustad® No. 7 'general purpose sea hook'; or the 'Japanese type' hook, which is around 6 cm in total length, rounded, with a ring at the eye and point not curved. Hooks are baited with squid, sardines, and Skipjack or small tunas' meat. A few sardines or guts of tuna are released at the same time in order to attract the targeted Yellowfin and Albacore tunas associated with FADs. The boat sails against the current and the engine is turned off close to the FAD, lines and hooks released and the fishing takes place while the boat drifts a few hundred meters away from the FAD. Frequently, the boat returns to the point close to the FAD trolling for tuna. Live baits kept onboard (e.g. Rough scads *Trachurus lathami*, Mackerel *Scomber* spp., Brazilian sardines *Sardinella brasiliensis*, squids or small tunas and Skipjack up to 20 cm in length) are also used. While the boat is drifting, frequently the hook remains close to the surface several meters away from the vessels, due to a small swivel, which makes the chumming and hooks available for seabirds to scavenge. Fishermen try to avoid birds taking the hook, pulling the line when birds are nearby. Fishing grounds are along the Brazilian continental shelf and shelf break, but oilrigs in the north and moored buoys in the south are preferred areas.

### **Pelagic longline for Swordfish**

Detailed descriptions of the technique and gear used in the pelagic longline fishery for Swordfish are available from around the world (e.g. Brothers et al., 1999) and also in the SW Atlantic (Neves et al., 2006). However, the fleet based in Itaipava deploys a shorter mainline (12–18 nm) and lower number of hooks (800–1000) due to the small size of vessels. Their potential impacts on seabirds and sea turtles are thought to be high, as with traditional longlines.

## 2. Known capture rates for each fisheries

Gear Type	Location	Mean Capture Rate	Range Capture Rate*	Sample size	Comments	References
Pelagic for Tuna	Southern Brazil	1.35 birds/1000hooks	0-97.9	52,593	Winter months; high capture rates during stormy weather; capture rate of 97.9 calculated from a set of 1,205 hooks; several authors erroneously derived capture rates from Vaske's paper based only on sets with bird captures.	Vaske-Jr (1991), and pers. comm. on total number of hooks.
Pelagic for Tuna, Swordfish and Sharks	Brazil and adjacent international waters	0.12 birds/1000hooks	---	c. 983,333	Capture rate considered an underestimate and highly variable.	Neves & Olmos (1997)
Demersal for Tilefish, Namorado and Groupers	Brazil	0.3 birds/1000hooks	0	280,197	Research vessel; Capture rate included 49 unidentified birds.	Neves & Olmos (1997)
Demersal	Brazil	---	0.1-0.32	---	Review of 2 other studies.	Olmos et al. (2000)
Pelagic for	Brazil	---	0.09-1.35	---	Data is from	Olmos et al. (2000)

Swordfish						three previous studies.
Demersal for Tilefish, Namorado and Groupers	Brazil	0.32 birds/1000hooks	---	340,777		Research vessel, data partially reported in Neves & Olmos (1997). Olmos et al. (2001)
Demersal for Tilefish, Namorado and Groupers	Brazil	0.1 birds/1000hooks	---	187,908		Research vessel. Olmos et al. (2001)
Pelagic for Tuna, Sharks and Swordfish	Brazil	---	0.095-0.73	1,529,312		Data partially reported in Neves and Olmos (2001); include data from research vessel. Olmos et al. (2001)
Demersal for Tilefish, Namorado, Groupers, etc.	Brazil	0.26 birds/1000hooks	0.1-0.32	528,685		Neves et al. (2001)
Pelagic for Tuna, Swordfish and Sharks	Brazil	0.095 birds/1000hooks	---	1,529,312		Neves et al. (2001)
Demersal Tilefish, Namorado, Groupers, etc.	Brazil	0.298 birds/1000hooks	---	338,812		Research cruises. Tutui et al. (2000)
Pelagic for Tuna, Swordfish and Sharks	Brazil	0.27 birds/1000hooks	0-6	64,150		Only five cruises; use of mitigation measures; cite other three previous cruises with higher Soto et al. (2003)

						capture rates without details, and no cruise with 'zero' capture rate reported.
Demersal	Brazil	0.101 birds/1000hooks	---	188,000	Research cruises.	Vooren & Coelho (2004)
Pelagic for Swordfish, tunas, sharks	Brazil	0.102 birds/1000hooks	---	499,978	Present capture rates in demersal longline based in published studies	Neves et al. (2007)
Pelagic for Swordfish and Dolphinfish	Brazil	0.114 birds/1000hooks	0-0.15	52,691	Small vessels from Itaipava fleet.	Bugoni et al. (2008)
Pelagic for Tuna, Swordfish and Sharks	Brazil and international waters	0.128 birds/1000hooks	0-0.41	547,416	No mitigation measure.	Bugoni et al, <i>in press</i>
Slow Trolling for Bigeye Tuna	Southern Brazil	0.41 birds/day	0-2	39 days	Frequently the birds were dead or severely injured	Bugoni et al. (2008)
Handlining	Southern Brazil	0.61 birds/day	0-7	41 days	Frequently the birds were dead or severely injured and easily swallow the small hooks	Bugoni et al. (2008)
Bottom gillnet For Monkfish	Southern Brazil	0.097/100 nets sets	---	80,576 sets	No mitigation measure.	Perez & Wahrlich, 2005

### 3. Actions addressed to reduce the seabirds bycatch in these fisheries:

g. Existing legislation

Act Number/reference	Where it can be found?	Main objective	Aspect
Lei de Crimes Ambientais Act nº 9.605 / 1998	<a href="http://www.mma.gov.br/port/gab/asin/lei.html">http://www.mma.gov.br/port/gab/asin/lei.html</a> (for Portuguese) <a href="http://www.mma.gov.br/ingles/gab/asin/leii.html">http://www.mma.gov.br/ingles/gab/asin/leii.html</a> (for English)	Establishing sanctions against illegal environmental activities	General
Decreto nº 1.354, de 29 de dezembro de 1994	<a href="http://www.ibama.gov.br/cemave/legislacao.php?id_arg=51">http://www.ibama.gov.br/cemave/legislacao.php?id_arg=51</a>	Creating the National Program of Biodiversity	General
Lista de Espécies da Fauna Ameaçadas de Extinção IN MMA nº 03/2003	<a href="http://www.mma.gov.br/port/sbf/fauna/index.cfm">http://www.mma.gov.br/port/sbf/fauna/index.cfm</a>	Official List of Brazilian Fauna Species in Risk of Extinction, including 6 albatrosses and 2 petrels ACAP/Annex 1 species	General
Lista das Aves do Brasil, conforme critérios do CBRO - Comitê Brasileiro de Registros Ornitológicos (versão 2005)	<a href="http://www.ibama.gov.br/cemave/index.php?id_menu=17">http://www.ibama.gov.br/cemave/index.php?id_menu=17</a>	Official List of Brazilian Bird Species including 10 albatross and 5 petrels ACAP/Annex 1 species	General
Lista das espécies de aves migratórias ocorrentes no Brasil	<a href="http://www.ibama.gov.br/cemave/index.php?id_menu=17">http://www.ibama.gov.br/cemave/index.php?id_menu=17</a>	List species of migratory birds that occurs in Brazil including 9 albatross and 5 petrels ACAP/Annex 1 species	General
National Plan of Action for the Conservation of	<a href="http://www.projetoalbatroz.org.br/arquivos/planacap/planacapIngles.pdf">http://www.projetoalbatroz.org.br/arquivos/planacap/planacapIngles.pdf</a>	Several measures with the objective to avoid the incidental capture of birds	Specific

Albatrosses and Petrels (NPOA-Seabirds/Brazil) Launched at 05/07/2006		during the fisheries activities.	
Programa de Observadores de Bordo - PROBORDO INC nº 01 de 29/09/2006	<a href="http://200.198.202.145/seap/html/PROBORDO/PROBORDO%20-%20IN%20CONJ%2001%20MMA%20-%20Final.doc">http://200.198.202.145/seap/html/PROBORDO/PROBORDO%20-%20IN%20CONJ%2001%20MMA%20-%20Final.doc</a>	Creates rules of National Observers Program, including the collection of seabird by-catch data	Specific
Sistema de Mapas de Bordo INI nº 26 19/07/2005 + Annexes	<a href="http://www.ibama.gov.br">http://www.ibama.gov.br</a>	Creates the National System of 'Onboard Maps' (sheets to be fulfilled by the skippers) including information about seabird bycatch.	Specific
Normas para operação de embarcações pesqueiras nas zonas brasileiras de pesca, alto mar e por meio de acordos internacionais, e dá outras providências Decreto nº 4810 de 19/08/2003	<a href="http://200.198.202.145/seap/pdf/decretos/D4810.pdf">http://200.198.202.145/seap/pdf/decretos/D4810.pdf</a>	Provides rules for operating fishing vessels in Brazilian fishing zones, high seas and under international agreements, and give others matters	General
Procedimento para Arrendamento de embarcações de pesca IN SEAP nº 04 de 19/08/2003			Specific



<p>Cria Comitê para a Conservação de Albatrozes e Petréis Portaria nº 1499 de 17/09/2006</p>	<p><a href="http://www.ibama.gov.br/cnia/index.php?id_menu=66">http://www.ibama.gov.br/cnia/index.php?id_menu=66</a></p>	<p>Creates the National Committee for the Conservation of Albatrosses and Petrels</p>	<p>Specific</p>
<p>Cria Grupo de Trabalho-GT de Capturas Incidentais na Atividade Pesqueira Portaria nº 83 de 06/11/2006</p>	<p><a href="http://www.projetoalbatroz.org.br">http://www.projetoalbatroz.org.br</a></p>	<p>Creates the Working Group on Incidental Captures on Fisheries to support the Government on strategies for monitoring and reduction of bycatch, and evaluating mitigation measure adequacy for marine fauna species, especially those on the brink of extinction.</p>	<p>Specific</p>

- h. Related agreements and/or treaties signed / ratified (including ACAP)

### **ACAP**

Brazil participated in all preparatory ACAP meetings, from the Valdivia Group meeting until the last preparatory meeting held in South Africa in February of 2001 when the final text of ACAP was adopted. The Brazilian Ambassador in Australia signed the Agreement in its first round of signature in June of 2001. In spite of this the country has not ratified the Agreement until this moment, being the only signatory nation that has not reached the ratification.

The Brazilian Government, after consultation, informed that the Country has the intention to ratify and all information points in this direction. The ratification process, according information, is in its last step, waiting to be included in the National Congress agenda to be voted upon.

In spite of Brazil being a signatory country, the Government has dedicated efforts for ACAP implementation and also has provided annual voluntary reports for the Advisory Committee meeting since AC1 in 2005.

### **ANTARCTIC TREATY**

The Brazilian Government signed the Antarctic Treaty in May of 1975 as an adherent member and in September of 1983 was accepted as advisory member with right of vote on discussions about the future of the Antarctic continent. The execution of the Brazilian Antarctic Program (PROANTAR), implemented in January 1982, is decentralized into several universities, research institutes and other public and private institutes, according to a plan elaborated by the Interministerial Commission for Marine Resources (CIRM), whose coordination is carried out by the Ministry of Navy. Brazilian activities in Antarctic are based at the "Comandante Feraz" Antarctic Station (EACF), in four quarters settled on Elephant, Nelson and King George Islands, and on board the "Any Rongel" Oceanographic Support Ship (NAPOc).

### **CMS – Convention of Migratory Species or Bonn Convention**

Brazil is a non-signatory country; however, a recent during a visit of CMS Executive Secretary Robert Hepworth to Brazil, he was able to open talks with the Brazilian Minister, authorities and scientists on possible future accession of the country to the Convention. At a subsequent meeting with the Brazilian Environment, Minister Ms. Marina da Silva Vaz de Lima and several conservation bodies raised a range of issues related to Brazilian conservation management and possible future accession to CMS were elaborated upon. The Minister felt that the accession of Brazil to the Convention may soon become possible.

### **CBD - Convention on Biological Diversity**

Brazil becomes a signatory member on the 8th of February of 1994 through the Legislative Decree no 2/94. With this signature Brazil intends to conserve the biodiversity in the long term and to achieve this created the National System of Unit of Conservation (SNUC). SNUC is an organized conjunct of natural protected areas in order to attend the Convention objectives. The 8<sup>th</sup> Conference of CBD Parties (COP8) was held in Curitiba City, Brazil in March of 2006. **RANSAR**

The RANSAR Convention was ratified by Brazil on the 16 of June of 1992 and promulgated by the Decree nº 1905 on the 16 of May of 1996. The Brazilian territory is the fourth in wetlands cited in the Convention totalizing more than 45 million Km<sup>2</sup> and includes seven National Parks and other protected areas. Among these reserves is the Marine Park of Manuel Luiz in Maranhão State, northern Brazil.

i. Research

- Study on abundance, bycatch and genetics of the Spectacled Petrel *Procellaria conspicillata*. *Involved institutions:* Projeto Albatroz/Brazil, Federal University of Rio Grande/Brazil, RSPB/UK, and University of Cape Town/South Africa.
- Study on trophic structure of the Procelariiform community off Brazil based on stable isotope signatures. *Involved institutions:* University of Glasgow and Projeto Albatroz.
- Study on Spectacled Petrel movements with deployment of three satellite transmitters captured in Brazilian fishing grounds, aiming determined overlaps between the bird's and fishing effort and its displacement along the Southwestern Atlantic Ocean. *Involved institutions:* University of Glasgow and Projeto Albatroz.
- Study on relevant offshore areas for seabirds was initiated based on seabird abundance and bycatch data in order facilitate to identify further marine protected areas. *Involved institutions:* Projeto Albatroz, Bioscience Instituto of University of São Paulo (IB/USP) and FAPESP – Fundo de Apoio a Pesquisa do Estado de São Paulo.
- Study on the systematics of breeding petrels at Trindade Island (*Pterodroma* spp.) and at sea tracking using geolocators aiming to clarify specific status of the group and identify important feeding areas for breeding birds. *Involved institutions:* Projeto Albatroz and University of Glasgow.
- Tests for Tori lines and blue dye baits in longlines in Brazil. *Involved institutions:* SEAP/PR - Special Secretariate of Aquiculture and Fisheries of Presidence of Republic of Brasil, NENA – Núcleo de Educação e Monitoramento Ambiental and Projeto Albatroz.
- Study on tori lines models developed by fishermen of national longline fleets based in Southern Brazil and a proposal for standardisation considering their efficiency using different materials in their compositions. *Involved institutions:* Projeto Albatroz and UNIVALI – Universidade do Vale do Itajaí.
- Review of all bycatch data on longline fishery in the Southwestern Atlantic Ocean with emphasis on Spectacled Petrel. *Involved institution:* Projeto Albatroz and NENA – Núcleo de Educação e Monitoramento Ambiental.
- Publication of a volume with the results of studies carried out under the EZZ Live Resources Program of Brazilian Government about seabird distribution and abundance in south Brazil, interaction of seabirds with pelagic and bottom longline fisheries and foraging behaviour of four main species of Procelariiformes in Brazil (Black-browed and Yellow-nosed Albatrosses and White-chinned and Spectacled Petrel). *Involved*

*institutions:* Programa REVIZEE, Oceanographic Institute of São Paulo Institute, Projeto Albatroz, FURG.

- A MSc Thesis at Fundação Universidade Federal do Rio Grande – FURG is in development for the study of interaction between seabirds, sea turtles and killer whales with the longline fisheries addressed to determine the influence of abiotic factors of those interactions. *Involved institutions:* FURG, Projeto Albatroz.
- Monitoring longline fishery fleets in Santos-SP and Itajaí-SC fishing terminals (Southern Brazil) to collect information on seabird bycatch, through logbooks filled by Skippers. *Involved institutions:* Projeto Albatroz, Albatross Task Force/RSPB/BirdLife/Save Brazil.

j. Education / awareness activities

- Establishment of sponsorship from Petrobras (Brazilian Oil Company) to the Projeto Albatroz to develop the awareness, education and implementation of mitigation measures to reduce seabird bycatch in the national longline fleet.
- Projeto Albatroz contracted the Education Environmental Center of University of Vale do Itajaí to develop methodological approaches to learn the perceptions of fishermen regarding the fisheries and the marine environment and their interactions. A volume with the outcomes obtained through interactive interview on the fishermen and main stakeholders are being prepared.
- Several media programs, articles and reports focusing on albatross conservation have been broadcast on TV, newspapers, magazines, radio, and Internet directed to the general public.
- The First South American Fishermen Forum to Reduce Seabird Bycatch was held on 12 -14th December, 2006 in Guarujá, Brazil. The event was organized by Projeto Albatroz, a Brazilian NGO and Southern Seabird Solutions, sponsored by Care for the Wild International and supported by the Government State Department of the United States. The forum's main goal was to promote the information exchange between fishermen, ship owners, researchers, Governmental and Non-Governmental Organizations to discuss the fisheries practices to reduce seabird bycatch in South American countries, especially by longline and trawler fisheries. Sixty participants, including fishermen and researchers from many different countries such as Australia, New Zealand, United States, Argentina, Uruguay, Peru, Chile, Ecuador and Brazil attended this event.
- Brazil participated on the 5th International Fisheries Observer Conference, May 15-18th 2007, in Victoria, British Columbia, Canada, to exchange experiences of the observers program around the world and to get new ideas to improve the National Onboard Observer Program and Projeto Albatroz Observer Program regarding to training, safety, management at-sea and collected data on seabirds.

k. Efforts to introduce mitigation measures on the vessels

- Establishment of a partnership between Projeto Albatroz and BirdLife International to develop the Albatross Task Force project in Brazil, aiming the introduction of mitigation measures of the Brazilian longline fleet through educational approaches.
- The Brazilian Government is preparing a national law for the use of Tori lines and blue dyed baits as an obligation for all pelagic longline vessels. The document is in advanced discussion among fisheries and environmental authorities.

I. Percentage of vessels using mitigation measures

50% of the pelagic longline domestic fleet is already using Tori lines and/or blue dyed baits according Albatross Task Force Program in Brazil, developed by Projeto Albatroz and promoted by RSPB, BirdLife International and Save Brasil.

Any vessels from the foreign fleet that operate in Brazil or other artisanal or semi-artisanal fleet are using mitigation measures to avoid seabird bycatch.

m. Existing observers programs (considering the level of coverage and the quality of data about seabirds)

The Brazilian Government, represented by the Special Secretariat of Aquiculture and Fisheries of Presidency of Republic, maintain the National Observers Programs. Despite this program already existing for many years, it was recently ratified by a national law. The presence of observers is an obligation in 100% of fishing trips for foreign vessels of all modalities, including longlines, trawlers, and other demersal fisheries. In spite of a very well structured observers scheme, it is necessary however, to strengthen the capacity of this seabirds data collection scheme.

**4. Identification of stakeholders involved and in activities in the country**

(This list can be completed with further information)

**5.**

n. Governmental departments / organizations

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q. NGOs

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Sérgio Estima	NEMA	<a href="mailto:nema@vetorial.net">nema@vetorial.net</a>

## 6. Existing international / regional collaboration

A publication about Black-browed Albatrosses is being planned by Argentina, Brazil and Uruguay.

Brazil was the first country to take part in the Albatross Task Force Programme of BirdLife / RSPB. More recently, other countries joined this team. In South America, Albatross Task Force is already established in Brazil, Chile, Argentina and Uruguay, and there are plans to extend this to Peru and Ecuador in the near future. This is understood to be an important tool for regional cooperation.

## 7. References

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## URUGUAY

**1. Fisheries that affect or potentially affect seabirds****Pelagic Longline**

The Uruguayan pelagic longline fleet pelagic targets mainly swordfish, but also includes tuna and shark. To catch them, the vessels operate in the Southwestern Atlantic (Jiménez *et al.* 2005, Domingo *et al.* 2006). This fleet is composed mostly of ice storage vessels (fresqueros). Their gear is a drift longline, 3.5 - 3.6 mm of polyamide monofilament mainline. The secondary lines vary from 4.5 to 21 m long and are made of 2.0 mm polyamide monofilament. The buoys (of extended polyurethane) are attached between groups of five hooks and radio buoys are used along the main line. The used hooks are mostly circular 9/0.

Some vessels use the Spanish system composed of a nylon multifilament main line. The secondary lines vary from 10 to 18 meters. The buoys are positioned generally after each eight hooks. The fishermen set after sun set, but in some cases can start setting during day light and the hauling starts during the first hours of sun light. The main baits are squid (*Illex argentinus*) and mackerel (*Scombrus spp.*); generally thawed some hours before the set time (Domingo *et al.* 2001, obs. pers.). Sometimes the fishermen use shark offal as bait.

**Semi-pelagic (=Demersal) Longline for wreckfish**

As described in the NPOA – Seabirds Uruguay, the semi-pelagic longlines use a series of weights to maintain the gear operating in mid-depth water. This fishery is focused upon catching wreckfish (*Polyprion americanus*), tope shark (*Galeorhinus galeus*), common seabream (*Pagrus pagrus*), Argentinean sandperch (*Pseudopercis semifasciata*), Argentine hake (*Merluccius hubbsi*) and Pink cusk-eel (*Genypterus blacodes*). Nowadays, the fleet catches mostly wreckfish.

**Bottom longline for Patagonian Toothfish**

This kind of longline uses jointed weights along regular intervals on the main line. This arrangement is made to maintain the longline along the bottom. At each end of the main line, there are anchors to sustain the line against sea currents. From the anchor line, buoys are attached. The main line can be made of polyamide or other materials and the size and diameter are variable. The branch lines also vary in length from 70 to 90 cm. This branch line can be positioned after each 2-5 m, along the main line and can be made of mono- or multifilament polyamide. This fishery focusses mainly on the rays and to the Patagonian toothfish (*Disosticus eleginoides*).

**Bottom Trawler**

The bottom trawlers used in Uruguay are made with a rigid material in a pyramidal shape. This gear can vary in size and weight but in general made with metal and sometimes use boards to facilitate operation. This fishery targets mainly mussels (*Mytilus sp.*), scallops (*Zygochlamys patagonica*) and clams.



**Bottom gillnet**

This fishing gear is composed of one net only or by three nets together locally known as 'tresmalho'. The net is attached to a top cable with buoys and a bottom cable with weights in order to maintain a vertically opened net.

Depending upon the weight used, the net remains close to the bottom, at the surface or in mid water. This fishery targets whitemouth croaker (*Micropogonias furnieri*) or stripped weakfish (*Cynoscion guatucupa*).

**Known capture rates for each fisheries**

<b>Gear Type</b>	<b>Location</b>	<b>Mean Capture Rate</b>	<b>Range Capture Rate*</b>	<b>Sample size</b>	<b>Comments</b>	<b>References</b>
Pelagic for Tuna	Uruguay – off Brazil & Uruguay	5.03	---	55,624		Barea et al. (1994)
Pelagic for Tuna	Uruguay	4.7	0-481.3	26,364	Capture rate of 481.3 birds/1000 hooks was based in a set of only 320 hooks.	Stagi et al. (1997)
Demersal for Rays and other spp.	Uruguay	0.41	0.075-0.575	202,650	Only two cruises sampled.	Stagi et al. (1997)
Not provided - Probably pelagic	Uruguay	1.7	---	1.5 million	Anecdotal data (no methods, fleet or birds caught reported).	Stagi & Vaz-Ferreira (2000)
Pelagic for Tuna, Swordfish and Sharks	Uruguay and International waters	---	0.05-5.57 <sup>2</sup>	155,040	<sup>2</sup> Capture rate calculated for non-fish (birds, mammals and sea turtles).	Marín et al. (1998)
Semi-pelagic (=demersal) for Wreckfish	Uruguayan EEZ	3.0	---	---		Marín et al. (2004)
Pelagic for Swordfish, Tuna and Sharks	Uruguay and International waters	0.42	0.04-1.65	647,722		Jiménez (2005) & Jiménez et al. (2005)
Pelagic for Swordfish, Tuna and Sharks	Uruguay and International waters	0.26		2,242,026	Monthly capture rates provided. Higher in	Jiménez & Domingo (2007)

					southern area and winter.	
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**3. Actions addressed to reduce the seabird bycatch in these fisheries:**

a. Existing legislation

<b>Act Number/reference</b>	<b>Where it can be found?</b>	<b>Main objective</b>	<b>Aspect</b>
Declarase de interés general, de conformidad con lo establecido en el Artículo 47 de la Constitución de La república, que refiere a la protección del Medio Ambiente Ley N° 17.283 de 12/12/2000	<a href="http://www.mvotma.gub.uy/dinama/index.php?option=com_docman&amp;Itemid=123">http://www.mvotma.gub.uy/dinama/index.php?option=com_docman&amp;Itemid=123</a>	General Law for Environment	General
Se constituye la Comisión Técnica Asesora de la Protección del Medio Ambiente (COTAMA) 4 de junio de 1993 Decreto 261/93 De 04/06/1993	<a href="http://www.mvotma.gub.uy/dinama/index.php?option=com_docman&amp;task=cat_view&amp;gid=57&amp;dir=DESC&amp;order=date&amp;Itemid=124&amp;limit=5&amp;limitstart=5">http://www.mvotma.gub.uy/dinama/index.php?option=com_docman&amp;task=cat_view&amp;gid=57&amp;dir=DESC&amp;order=date&amp;Itemid=124&amp;limit=5&amp;limitstart=5</a>	Created COTAMA Technical Commission for Environmental Protection	General
Ley Riqueza del Mar y sus reglamentaciones - Ley N° 13.833, del 29 de diciembre de 1969	<a href="http://www.parlamento.gub.uy/leyes/AccesoTextoLey.asp?Ley=13833&amp;Anchor=">http://www.parlamento.gub.uy/leyes/AccesoTextoLey.asp?Ley=13833&amp;Anchor=</a>	This law regulates the conservation of aquatic resources through adequate and reasonable exploitation as well as the preservation of its habitats.	General

<p>Crea la Comisión Interministerial (M.RR.EE., M.D.N. y M.G.A.P.) para que entienda los asuntos de política exterior, política antártica y política pesquera relativos a los recursos vivos marinos antárticos. Decreto N° 157/997 de 19 de febrero de 1997</p>	<p><a href="http://www.armada.gub.uy/pdf/dirme_pdf/decretos_pdf/decreto_157.pdf">http://www.armada.gub.uy/pdf/dirme_pdf/decretos_pdf/decreto_157.pdf</a></p>	<p>Created the Inter-ministerial Commission for the external polices, fishery polices and Antarctic living resources.</p>	<p>General</p>
<p>Decreto de Ley N° 14.484, del 18 de diciembre de 1975</p>	<p><a href="http://www.dinara.gub.uy/Marco%20Jur%C3%ADdico/Ley%2014484.htm">http://www.dinara.gub.uy/Marco%20Jur%C3%ADdico/Ley%2014484.htm</a></p>	<p>This decree law establishes the competency of DINARA, National Direction for Aquatic Resources, for the advice, support, development and control of fishery activities.</p>	<p>General</p>
<p>Decreto N° 149/997, del 7 de mayo de 1997</p>	<p>Not available</p>	<p>Adjusts and updates rules for the exploration and domain of the sea.</p>	<p>General</p>
<p>Aprueba el "Acuerdo para promover el cumplimiento de las Medidas Internacionales de Conservación y Ordenación por los buques pesqueros que pescan en alta mar." (adoptado en el 27° Período de Sesiones de la Conferencia General de</p>		<p>Approved the Agreement to Promote Compliance with International Conservation and Management Measures by Fishing</p>	<p>General</p>

FAO). Ley N° 17.118 de 21 de junio de 1999		Vessels on the High Seas.	
Aprueba la Convención de las Naciones Unidas sobre el Derecho Del Mar  Ley N° 16.287 del 26 de octubre de 1992	<a href="http://www.dinara.gub.uy/Marco%20Jur%C3%ADdico/Ley%2016_287.htm">http://www.dinara.gub.uy/Marco%20Jur%C3%ADdico/Ley%2016_287.htm</a>	Approved the United Nations Convention on Law of the Sea (UNCLOS)	General
Decreto N° 248/997, del 23 de julio de 1997	Not available	This decree establishes a series of measures for longline fishing to reduce the incidental bycatch of Procellariiformes seabirds, including hook models, thawed baits, night settings, offal discharge and Tori lines.	Specific

- b. Related agreements and/or treaties signed / ratified (including ACAP)

## **ACAP**

Until July of 2006 Uruguay had not signed the Agreement. However, the elaboration of the NPOA Seabirds Uruguay and the Uruguayan participation on the AC3 meeting in Valdivia – Chile, has influenced the Foreign Affairs Ministry for Uruguay to sign it.

## **ANTARCTIC TREATY**

Uruguay ratified the Antarctic Treaty by the Law no. 14.971 on 14<sup>th</sup> of December 1979. Since the 7<sup>th</sup> of October 1985, Uruguay was accepted as an Advisory Member with right of vote and to take part on the institute of consensus that governs decisions adopted by the Advisory Committee of Antarctic Treaty.

## **CMS – Convention of Migratory Species or Bonn Convention**

Uruguay became part of the CMS on the 6<sup>th</sup> of October 1989 through Law no. 16,062. Uruguay highlights the relevance of the NPOA seabirds – Uruguay and ACAP within this context.

## **CBD - Convention on Biological Diversity**

The Uruguayan ratification was internally recognized by Law N° 16.408 on the 27<sup>th</sup> of August 1993. The Republic of Uruguay designated MVOTMA as a competent authority and focal point for the regulation and implementation of the Convention through the Decree no. 487/993 on the 4<sup>th</sup> of November 1993. As a result of a FNMA/PNUD sponsorship MVOTMA through DINAMA, this formed the “National Strategy for the Conservation and Sustainable Use of the Biological Diversity of Uruguay”.

## **Regional Fisheries Management Organizations**

### **CCAMLR**

Uruguay has been a CCAMLR member since the 26<sup>th</sup> of August 1996 (Decree law no. 15.693 on 11<sup>th</sup> December 1984). Uruguay initiated the activities of the Convention Area in 1998. As a consequence, Uruguay approved the conservation measures from the Commission, especially Measure 25-02 for the reduction of seabird incidental mortality on commercial or exploratory longline fisheries on the Convention Area. Also, according to the CCAMLR conservation measures, the presence of international scientific observers is obligatory. To accomplish this, the International Scientific Observation Scheme for the 1992/1993 season introduced the seabird identification guide published by CCAMLR. The Antarctic Department of DINARA was charged to send the scientific observers on the vessels that fish on the Convention Area and analyse the information collected.

### **ICCAT**

Uruguay is a very active member of ICCAT, and provides data requested regarding fisheries under ICCAT. Additionally, the Uruguayan delegation has presented data on seabird and sea turtle bycatch. The latter is done in conjunction with Brazilian researchers.

c. Research

1. Tests on the effect of different kinds of bait (squids *Illex argentinus*, *inca scad*, *Trachurus murphyi* or chub mackerel *Scomber japonicus*) on seabird bycatch.  
Involved institutions: Proyecto Albatros y Petreles – Uruguay and PNOFA.

2. Tests for blue dyed baits as a mitigation measure to reduce seabird bycatch.  
Involved institutions: Proyecto Albatros y Petreles – Uruguay and PNOFA.

d. Education / awareness activities

Uruguay recently joined the Albatross Task Force Program for BirdLife International / RSPB. The main focus of this program is training fishermen to use the mitigation measures throughout ATF Instructors on board and in harbours. Educational material is being produced to inform fishermen about the importance of adopting the mitigation measures to avoid seabirds bycatch. Recently, information was reported in *Boletín Atlántico Sur* as an outreach to interested people.

e. Efforts to introduce mitigation measures on the vessels

Uruguay is the only country in South America that has adopted a law specific to enforce the use of mitigation measures on fishing vessels. The Decree N° 248/997 establishes a series of measures to reduce the incidental capture of seabirds from Order Procellariiformes in the longline commercial fisheries. The Decree states that the fishermen shall use hooks that cause the minimum number of seabird capture and that the baited hooks shall sink as fast as possible for given thawed bait. The Decree determines that the longline vessels for tuna, swordfish or others shall set the lines during night time only and that the deck shall maintain only the lights necessary for security. The offal shall be discarded on the opposite side from where the longline is being set and only when unviable to keep it on board. Lastly, Tori lines are obligatory according to technical specifications established by DINARA.

f. Percentage of vessels using mitigation measures

Noavailable information.





c. Fishery Industries and fishermen

	SUDEPPU - Sindicato de Patrones de Pesca del Uruguay (Syndicate of Ship Owners of Uruguay)	
Jorge Vignolo	SUBTMA - Sindicato Único de los Trabajadores del Mar y Afines (Syndicate Unique for Sea Workers and Sea Workers Like)	
Mário Delgado	Frelux S.A.	
Ginno Settin	Lorstar S.A.	

d. NGOs

Agustín Carriquiry	AVES URUGAUY	<a href="mailto:acarrquiry@ute.com.uy">acarrquiry@ute.com.uy</a>
Sebastián Jiménez	Proyecto Albatros y Petreles - Uruguay	<a href="mailto:jimenezpsebastian@gmail.com">jimenezpsebastian@gmail.com</a>

## 5. Existing international / regional collaboration

There is an Agreement signed by Uruguay and Brazil for the Environmental Cooperation. In this agreement, the parts invited to intensify cooperation for the protection and conservation of the environment as part of their national efforts addressed to sustainable development.

Previous research and publications were completed in conjunction with the Brazilian sea turtles institution, considering the similarities of fishing operations and fishing areas. The same cooperation could be made between both countries in relation to seabirds. Some tentative efforts have already been coordinated by Uruguayan researcher (Andrés Domingo) to share information about Black-browed Albatrosses and prepare a publication between Brazil, Uruguay and Argentina.

Some ideas were also discussed between Uruguay and Brazil to prepare a seabird identification guide to attend all SW Atlantic fishing boats.

Declaration of the Ministers of Environment about the Strategies for Biodiversity of MERCOSUL.

I extraordinary Meeting of Ministers of Environment of MERCOSUL

In March, 29<sup>th</sup> of 2006, Curitiba, Brazil

[http://www.mvotma.gub.uy/dinama/index.php?option=com\\_docman&task=search\\_result&Itemid=154](http://www.mvotma.gub.uy/dinama/index.php?option=com_docman&task=search_result&Itemid=154)

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