

# National Plan of Action for the conservation of the Amsterdam albatross *Diomedea amsterdamensis*: potential risks from long line fisheries in the IOTC zone

H Weimerskirch<sup>1, 2,\*</sup>, K. Delord<sup>1</sup>, JB Thiebot<sup>1,3</sup>

1 Centre d'Etudes Biologiques de Chizé, CNRS, UPR 1934, Villiers-en-Bois, 79360, France

2 Agreement for the Conservation of Albatrosses and Petrels, Hobart, Tasmania, Australia

3 Terres Australes et Antarctiques Françaises, Saint Pierre, La Réunion, France

\* E mail: henriw@cebc.cnrs.fr

**ABSTRACT:** The critically endangered Amsterdam albatross is one of the rarest bird species, with only 30 pairs breeding on Amsterdam island. Demographic modelling indicates that the additional mortality of only 6 birds per year may bring this population to extinction. Its foraging range overlaps extensively with tuna long line fisheries in the southern zone of the IOTC, in areas where high mortalities are reported. Here we present the French National Plan of action for the conservation of Amsterdam, showing the present status of the species and the various actions planned in the next 5 years. In a second part we detail the present knowledge of the distribution of the species and the potential risk encountered by Amsterdam albatrosses. We suggest that particular efforts should be taken to eliminate mortality risks for seabirds in the range of the species, and additional observations in the central Indian Ocean fisheries where the species forages.

## 1 - THE NATIONAL PLAN OF ACTION FOR AMSTERDAM ALBATROSS

This plan has been launched in November 2011 by the French Ministry of environment and the Terres Australes et Antarctiques Françaises administration. that is in charge of the

### Summary of the current situation

The conservation status of the Amsterdam albatross is unfavourable, and is classified as critically endangered on the IUCN red list, despite the total population showing an increasing trend until 2005. The number of birds is indeed still very low, mainly as a consequence of the extremely low starting point of the few individuals present in 1982 when the species was described. Efforts made to conserve the population at the nesting

site are not sufficient to improve the current population growth rate, which may be considered as a maximum for a species with such a low fecundity rate.

The recent management plan of the National Nature Reserve of the French Southern lands has enhanced the on-land conservation of this population, but several potential threats remain (pathogens, predation).

The situation of Amsterdam albatross is still very precarious and uncertain, notably regarding climate change effects and change in demography functioning. Further uncertainties include potential additional at-sea mortality caused by interactions with fisheries in its very large oceanic habitat (southern Indian Ocean, from African to Australian coasts).

### **Optimal needs of the species**

As a seabird, the conservation of Amsterdam albatross requires protection in two main habitats: terrestrial (breeding site) and marine (feeding sites).

#### *1.1.1. Terrestrial*

- ~ nesting habitat: natural peat bogs
- ~ good quality habitat: vegetation free from damage by climate change (drying out), trampling by cows and humans
- ~ habitat free from predation risks or disease: controlling predation by introduced mammals and contamination by pathogens (introduced or not)
- ~ limited disturbance by humans

#### *1.1.2. Marine*

- ~ feeding areas are free from the risk of bycatch in fisheries
- ~ oceanic environment has sufficient food resources available for the species (global changes impact on marine resources)
- ~ note that the oceanic sector exploited for foraging differs depending on the individuals' status (breeders, non-breeders, juveniles, immatures, sabbatical)

### **Long-term strategy**

Between 1984 and 2007, the total Amsterdam albatross population increased at a mean rate of up to 5% per annum, with slight decrease during the last years. The total number of individuals is now estimated at between 160 and 170 individuals, including 80-90 mature individuals.

A long-term strategy for this long-lived species should aim at improving the conservation status of the Amsterdam albatross throughout its distribution area in the Indian Ocean.

In order to carry out this strategy, actions are planned within the framework of the following themes:

- maintain long-term monitoring of the species, notably through the survey of breeders on Amsterdam and individual surveys, in order to ensure a reliable indication of the population trend
- complete knowledge of the species' ecology, and more specifically on its diet, using methods that do not involve energy loss for the chicks

- complete knowledge the at-sea distribution survey of the species including (i) all demographic classes of the population and (ii) multi-year datasets of this distribution
- if possible, delineate in the total species' distribution area, sites of specific attractiveness for the birds, and hence evaluate the relevance of the 'Important Bird Area' approach (BirdLife International) for this critically endangered species.

### Goals of the plan

The main goal of this plan is to improve both conservation state and status of the Amsterdam albatross in order to increase the population size in the long-term.

This plan aims to maintain both the current rate of the total population increase (5%) and the adult survival rate above 0.95 (below these thresholds, the population would decrease). To achieve this, it is necessary to:

- Study transmission mechanisms of the pathogens in other albatross and seabird species on the island. Investigate the occurrence of antibodies in Amsterdam albatrosses. Maintain application of preventive measures to limit contamination risks. Establish measures to be taken (vaccination ?) in case of epidemic,
- Evaluate predation risks from mammals present on the breeding site, through direct observation and modelling. Predict demographic risks linked to the presence of these introduced mammals, according to three scenarios (no eradication, partial eradication and/or maintenance of populations, or total eradication of introduced mammals), plan and carry out to eradicate these introduced predators if it appears necessary,
- Evaluate interaction risks with longline fisheries and recommend and actively work towards ensuring the use of measures to reduce avian mortality in EEZs as well as in international waters,
- Be capable of reacting quickly if a threat significantly impacting the species appears,
- Maintain the long-term monitoring programme as a sentinel of the population (population dynamics, annual numbers...etc),
- Acquire and improve knowledge on the species: diet, trophic ecology, breeding biology, at-sea distribution,
- Broadcasting this plan at national and global scale. The very unfavourable conservation status of the Amsterdam albatross makes it crucial that this plan is accessible to State departments, as well as to international scientific community, to fishermen, to regional fisheries management authorities, to the different international commissions and to institutions involved in conservation.

### Actions

These actions aim to quantify, reduce and remove the threats affecting the Amsterdam albatross. In total 20 actions have been identified.

When all possible action fields are considered (improving breeding habitat / preventing diseases / reducing riska of fisheries bycatch / eradicating introduced mammal species), the two fields showing the most immediate benefit for the population are preventing diseases and eradicating introduced mammal species. These two actions can be launched quickly and carried out entirely under the jurisdiction of French administration. However, limiting fisheries impacts should also remain a priority.

10 actions have been listed, and those concerning fisheries and IOTC are listed in Annex 1:

- Maintenance of the long-term survey of the Amsterdam albatross
- Demographic analyses and survey of status and long-term trend of the Amsterdam albatross population
- Improving knowledge of the potential pathogens of the Amsterdam albatross
- Modelling & predicting at-sea distribution of Amsterdam albatrosses under different scenarios of conservation strategies
- Improving knowledge on the at-sea distribution of the Amsterdam albatross
- Identification of important marine areas for Amsterdam albatrosses
- Documenting Amsterdam albatrosses' diet in relation with fisheries
- Improving knowledge on at-sea interactions between fisheries and Amsterdam albatrosses
- Application of bycatch mitigation measures and survey in the southern Indian Ocean fisheries
- Supporting efforts to promote the application of conservation measures in fishing operations in the Indian Ocean
- Provide the RFMOs with estimates of the potential impact of fisheries on the Amsterdam albatross by combining on-land and at-sea surveys of individuals
- Characterisation and survey of the favourable nesting habitats
- Evaluation of the interactions between introduced predator species and Amsterdam albatrosses
- Eradication of introduced predator species on Amsterdam Island
- Communication of the national plan of actions for the Amsterdam albatross in France
- Coordination and implementation of the actions

## **2 – AMSTERDAM ALBATROSS AND LONG LINE FISHERIES IN THE IOTC ZONE**

Based on available data on the closely-related wandering albatross *Diomedea exulans*, we can infer that Amsterdam albatrosses are at considerable risk of bycatch in long-line fisheries (pelagic or demersal). Although no such event has ever been recorded (noting that inexperienced observers might not recognise and identify an Amsterdam albatross correctly) this would be an extremely rare phenomenon that could take years to occur., Demographic analyses demonstrate the considerable negative impact on the population trend of only a few individuals captured accidentally (Rivalan et al 2010). Only 6 individual killed additionally in the population (as by catch for example) would bring the population to complete extinctions within a few decade. It is assumed that it is the developpement of long line fisheries for tuna in the 1960s and 1970s in the southern Indian ocean, that has bring the species close to extinction in the early 80s, with only 5 pairs breeding in 1982 (Weimerskirch et al. 1997).

Bycatch mechanisms are well understood today and concern a number of species that feed in the same way. It is therefore urgent to act, by requiring the application of the best known methods to minimise bycatch, in all areas used by Amsterdam albatrosses

Amsterdam albatross is a critically endangered species endemic of Amsterdam Island. Its identification at sea is difficult, and the species is probably reported as wandering albatross, since young wandering albatrosses are very similar to adult Amsterdam albatross. Juveniles birds are very similar and almost indistinguishable between the two species. Tracking during the cycle -breeding/non-breeding period- by GLS (Figure 1) emphasize the significance of subtropical waters during non-breeding period (sabbatical period). The important areas for adults mainly overlapped with the IOTC convention area, mainly with international waters the rest being in Exclusive Economic Zones (France, Australia, South Africa, Madagascar & Mozambique).

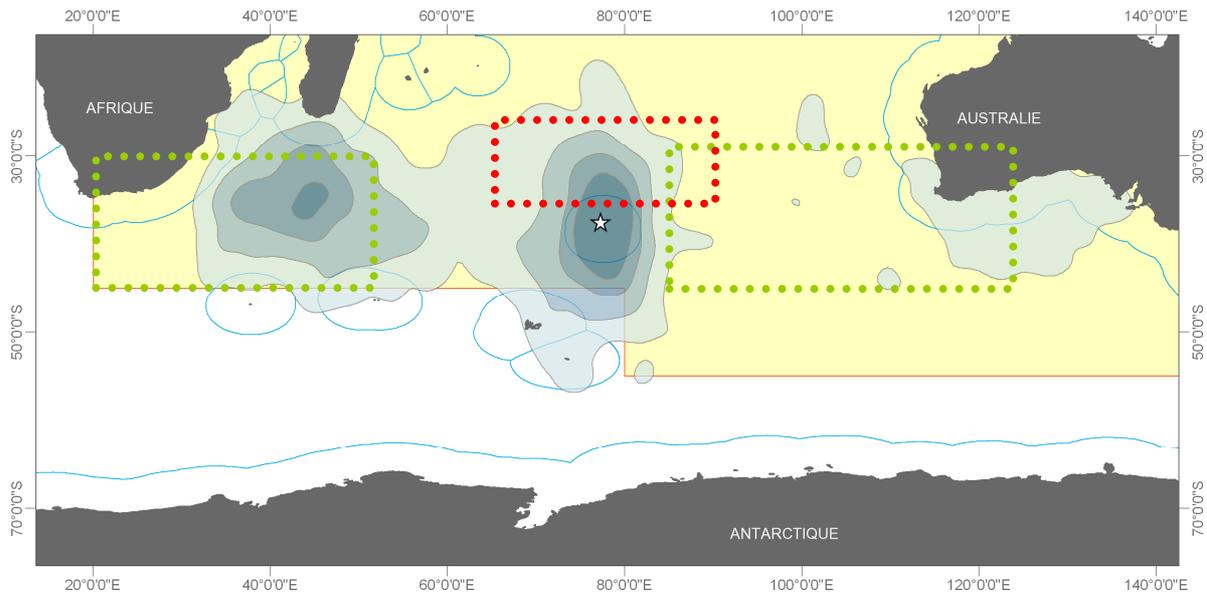


Figure 1 - Map of important areas for adults of Amsterdam albatross *D. amsterdamensis* in the Southern Indian Ocean (3 individuals – GLS data) during breeding/non-breeding periods Kernel utilization distribution (blue : UD, 25%, 50%, 75% et 95%), breeding colony at Plateau des Tourbières-Amsterdam Island (white star), limits of IOTC Convention Area (yellow) and of EEZs (blue) and hotspots of bycatch of seabirds (wandering albatross in Japanese fleet - green square (Inoue et al. 2011); all species in Taiwanese fleet - red square (Huang & Liu 2010)) are also reported.

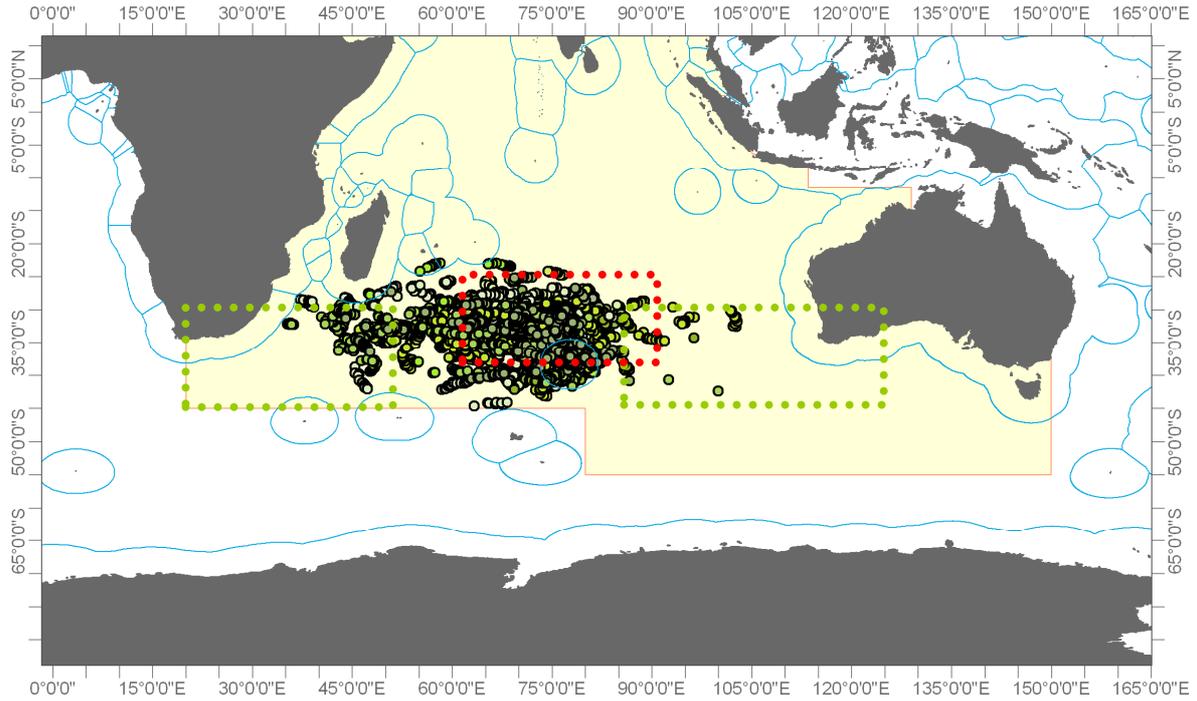


Figure 2 - Map of tracking locations of adults of Amsterdam albatross *D. amsterdamensis* from Amsterdam Island (20 individuals) during brooding and chick-rearing period in May-September 2011. Limits of IOTC Convention Area (yellow), of EEZs (blue) and hotspots of bycatch of seabirds (wandering albatross in Japanese fleet - green square (Inoue et al. 2011); all species in Taiwanese fleet - red square (Huang & Liu 2010)) are also reported.

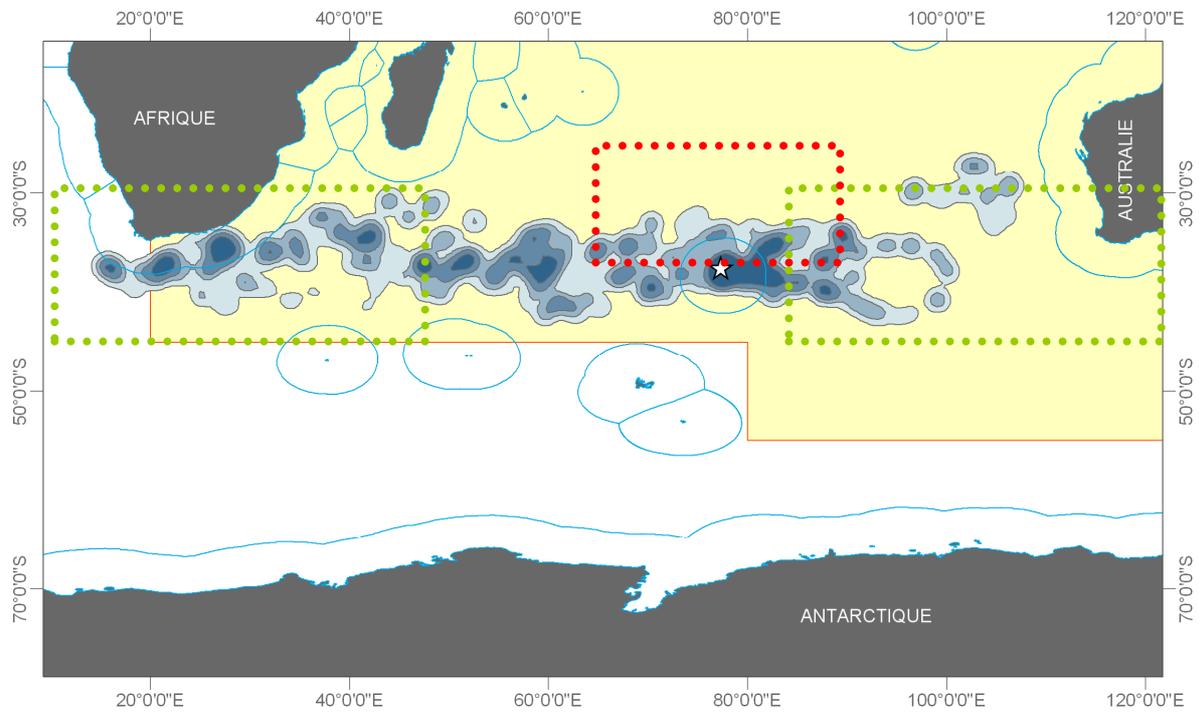


Figure 3 - Map of important areas for juveniles of Amsterdam albatross *D. amsterdamensis* in the Southern Indian Ocean (3 individuals – GLS data) between January and May 2005. Are reported Kernel utilization distribution (blue : UD<sub>s</sub>, 25%,

50%, 75% et 95%)., breeding colony at Plateau des Tourbières-Amsterdam Island (white star), limits of IOTC Convention Area (yellow) and of EEZs (blue). Hotspots of bycatch of seabirds (wandering albatross in Japanese fleet - green square (Inoue et al. 2011); all species in Taiwanese fleet - red square (Huang & Liu 2010)) are also reported.

These areas of importance for adults during breeding and non-breeding period as well as juvenile period overlapped largely with the areas of hotspots of seabirds bycatch recently presented for the Japanese and Taiwanese fleet (Inoue et al. 2011, Huang & Liu 2010).

Amsterdam albatross appears to overlap extensively with the Taiwanese fisheries in the central Indian Ocean during the breeding season, and with Japanese fisheries outside the breeding season.

## REFERENCES

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- Weimerskirch H., Brothers N. & Jouventin P. 1997. Population dynamics of wandering albatrosses *Diomedea exulans* and Amsterdam albatross *D. amsterdamensis* in the Indian Ocean and their relationships with longline fisheries: conservation implications. *Biological Conservation* 79:257-270

## ANNEX 1

<b>Action 3.3</b>	<b>Marine habitat use:</b>	<b>Priority</b>		
	<b>Identification of important marine areas for Amsterdam albatrosses</b>	<b>1</b>	<b>2</b>	<b>3</b>

<b>Domain</b>	Study / Protection / Communication
<b>Timetable</b>	Years 1 & 5
<b>Context</b>	<p>Preliminary results of recent studies on at-sea distribution of seabirds (mainly breeding adults) showed a strong overlap of adult Amsterdam albatrosses with longline fishing activities, and more specifically with those targeting southern bluefin tuna.</p> <p>It is still needed to complete available data (incomplete, scarce or even inexistent) and to determine to what extent certain population classes (juveniles, immatures or sabbatical adults) use risky areas. This is very important since recent demographic studies performed in CNRS Chizé from long-term survey of the population clearly show that additional mortality of only 6 individuals each year would drive Amsterdam albatrosses to extinction.</p>
<b>Description</b>	<p>Launching and maintenance of studies on the following themes:</p> <ul style="list-style-type: none"> <li>• <b>Identify important marine areas for this species according to priority criteria</b> based on the same procedure as to delineate Marine Important Bird Areas- Marine IBAs (Birdlife International).</li> <li>• <b>Develop a web to identify Marine IBAs of interest for at-sea protection of albatrosses, encompassing areas in international waters</b></li> </ul>
<b>Localities targeted</b>	Indian Ocean
<b>Financial evaluation</b>	This action is to be carried out within the framework of an engineer NPA contract in spatial analyses and fisheries statistics during 3 months in year 1 + 2 months in year 5 (3,000€/mois) CNRS Chizé, LPO
<b>Specific funding call for NPA</b>	<b>No funding is asked for this action</b>
<b>Potential executive partners</b>	<p>CNRS Chizé (Marine Predators Team, directed by H Weimerskirch), IPEV, Birdlife International, LPO, ACAP, IUCN, National Nature Reserve of the French Southern lands</p> <p>RFMOs : IOTC/CCSBT, Koreas, Taiwan, Japan, South Africa, Australia, New Zealand, Madagascar</p>
<b>Potential funding</b>	National Nature Reserve of the French Southern lands / Action Plan for Biodiversity / NPA
<b>Indicators of progress and</b>	Identification of Marine IBAs

<b>evaluation</b>	Establish priorities to action sites Scientific reports and articles, communication of results
<b>References</b>	Inchausti & Weimerskirch 2001; Rivalan et al. 2010

<b>Action 4.1</b>	<b>Interactions with fisheries:</b>	<b>Priority</b>		
	<b>Improving knowledge on at-sea interactions between fisheries and Amsterdam albatrosses</b>	<b>1</b>	<b>2</b>	<b>3</b>

<b>Domain</b>	Study / Protection/Communication
<b>Timetable</b>	Years 1 & 5
<b>Context</b>	<p>Preliminary results of recent studies on the at-sea distribution of seabirds (mainly breeding adults) showed a strong overlap of adult Amsterdam albatrosses with long-line fisheries, more specifically with those fisheries targeting southern blue-fin tuna. Although industrial fishing effort on this species has declined in almost the whole distribution area of the Amsterdam albatross (excluding the eastern sector), and that no bycatch event has been reported for this fishery, this species remains potentially at risk regarding any long-line fishery operating in its distribution area, notably in the vicinity of Amsterdam island. Fishing efforts can be extremely variable in time and space in the subtropical waters. Moreover, fisheries are not required to report bycatch or ring recoveries outside Exclusive Economic Zones (EEZs), and the number of fishing operations covered by dedicated observers is still extremely low.</p> <p>Nevertheless, available data on at-sea distribution needs to be enhanced and to be used to determine to what extent other parts of the population (juveniles, immatures or sabbatical adults) may be affected by this fishery. This is very important since recent demographic studies based on long-term survey by CNRS Chizé clearly show that additional mortality of just 6 individuals each year would drive the population to extinction.</p>
<b>Description</b>	<p>Starting and maintaining studies on the following topics :</p> <ul style="list-style-type: none"> <li>• <b>Characterise fisheries in the southern Indian Ocean within the distribution area of the Amsterdam albatross</b>, taking into account nationality, gear employed, targeted species, ship configuration, spatial and temporal distribution of fishing effort, rejection of fishery discards, type of bycatch monitoring, percentage of coverage by dedicated observers, mitigation measures needed/employed, and management authority.</li> <li>• <b>Analyse dynamically the overlap between albatrosses and fisheries</b> determined in actions 3.1 and 3.3</li> <li>• <b>Evaluate utilisation and risks</b> incurred by birds in managed areas (EEZs, RFMOs etc)</li> <li>• <b>Identify national and managing jurisdictions</b> by overlaying Marine IBAs and contours of EEZs and RFMOs. Report the results to nations, resource management authorities and to ACAP.</li> <li>• <b>Propose fishing action layouts</b> (closure of sectors, seasonal measures,</li> </ul>

	etc)
<b>Localities targeted</b>	Indian Ocean
<b>Financial evaluation</b>	This action is to be carried out within the framework of an engineer NPA contract in spatial analyses and fisheries statistics during 3 months in year 1 + 2 months in year 5 (3,000€/month) CNRS Chizé (c.f. action 3.3)
<b>Specific funding call for NPA</b>	<b>Year 1: 9,000€</b> <b>Year 5: 6,000€</b> <b>= 15,000€ for the whole plan.</b>
<b>Potential executive partners</b>	CNRS Chizé (Marine Predators Team, directed by H Weimerskirch), IRD (A Fonteneau), IPEV, Birdlife International, LPO, ACAP, IUCN, National Nature Reserve of the French Southern lands  RFMOs : IOTC/CCSBT, Coreas, Taiwan, Japan, South Africa, Australia, New Zealand, Madagascar
<b>Potential funding</b>	National Nature Reserve of the French Southern lands/ Action Plan for Biodiversity / NPA
<b>Indicators of progress and evaluation</b>	Description of the southern Indian Ocean fisheries Identification of the overlaps between marine IBAs and operating fisheries Sort priorities in action sites Development of a partners web Scientific reports and articles, communication of results
<b>References</b>	Weimerskirch et al. 1997 ; Inchausti & Weimerskirch 2001 ; Rivalan et al. 2010

<b>Action 4.2</b>	<b>Interactions with fisheries:</b>	<b>Priority</b>		
	<b>Application of bycatch mitigation measures and survey in the southern Indian Ocean fisheries</b>	<b>1</b>	<b>2</b>	<b>3</b>

<b>Domain</b>	Study / Protection/Communication
<b>Timetable</b>	Annual
<b>Context</b>	<p>Preliminary results of recent studies on the at-sea distribution of seabirds (mainly breeding adults) showed a strong overlap of adult Amsterdam albatrosses with long-line fisheries, more specifically with those fisheries targeting southern blue-fin tuna. These fisheries are not required to report bycatch or ring recoveries outside Exclusive Economic Zones (EEZs), and the fishing area covered by dedicated observers is still extremely low.</p> <p>The measures that should be used by long-line fishing vessels to mitigate bycatch of albatrosses are well documented (shooting of the lines by night, streamer lines (CCAMLR type) and weighing the lines or specification of a speed of immersion of the lines).</p> <p>This is made within the framework of recent demographic studies based on long-term survey by CNRS Chizé, that clearly show that additional mortality of only 6 individuals each year would drive the population to extinction.</p>

<b>Description</b>	<p><b>a. National level</b></p> <p><b>Maintain application of the 3 above mitigation measures</b> by long-line fisheries in the French EEZ (Amsterdam, Kerguelen, Crozet), sectors identified (action 4.1) as being used by Amsterdam albatrosses.</p> <p><b>Maintain a coverage rate of 100% by dedicated observers</b> for the Amsterdam albatross in the French EEZs.</p> <p><b>b. International level</b></p> <p><b>Reach the application of the 3 above mitigation measures</b> by long-line fisheries in the sectors identified as used (action 4.1) by Amsterdam albatrosses (whatever the stage, age, or utilization level) in the IOTC and CCSBT zones.</p> <p><b>Ask for the delineation of a special zone for the Amsterdam albatross</b> in the IOTC and CCSBT zones for which coverage rate by dedicated observers would be 50% minimum.</p> <p>If necessary, update this zone in the light of any new data on at-sea distribution of the species.</p>
<b>Localities targeted</b>	Indian Ocean
<b>Financial evaluation</b>	<b>To be determined</b>
<b>Specific funding call for NPA</b>	<b>To be determined</b>
<b>Potential executive partners</b>	Ministry of Ecology / Ministry of foreign affairs / Ministry of Agriculture and Fishing, CNRS Chizé (Marine Predators Team, directed by H Weimerskirch), Birdlife International, IRD (A Fonteneau), RFMOs IOTC/CCSBT, CCAMLR, Coreas, Taiwan, Japan, South Africa, Australia, New Zealand, Madagascar, IPEV, ACAP
<b>Potential funding</b>	Ministry of Ecology / Ministry of foreign affairs
<b>Indicators of progress and evaluation</b>	<p>Application of the three best measures known to reduce bycatch in the fisheries operating in the areas used by the Amsterdam albatrosses.</p> <p>Application of a coverage rate of fisheries by devoted observers of 50% minimum on a special zone delineated for the Amsterdam albatross into the IOTC and CCSBT (outside EEZ).</p> <p>Number of Amsterdam albatrosses captured in long-line fisheries</p>
<b>References</b>	Inchausti & Weimerskirch 2001 ; Rivalan et al. 2010 ; BirdLife International Fact-sheets "Bycatch Mitigation"

<b>Action 4.3</b>	<b>Interactions with fisheries:</b>	<b>Priority</b>		
	<b>Observations of seabirds bycatch on longline fishing vessels near Amsterdam Island</b>	<b>1</b>	<b>2</b>	<b>3</b>

<b>Domain</b>	Study / Protection/Communication
<b>Timetable</b>	Annual

<b>Context</b>	The results of recent studies on the at-sea distribution of seabirds (mainly breeding adults) showed a strong overlap of adult Amsterdam albatrosses with long-line fisheries, more specifically with those fisheries targeting southern blue-fin tuna. No bycatch event of Amsterdam albatross has been reported in these fisheries. Nevertheless, this species remains potentially at risk regarding any long-line fishery operating into its distribution area, notably in the vicinity of Amsterdam island. Moreover, fisheries are not required to report bycatch or ring recoveries outside Exclusive Economic Zones (EEZs), and the fishing area covered by dedicated observers is still extremely low (<5%). It is crucial to determine if the Amsterdam albatross is associated with fishing vessels and to evaluate realistic bycatch risks
<b>Description</b>	<p><b>a. National level</b></p> <ul style="list-style-type: none"> <li>• <b>Maintain a coverage rate of 100% by dedicated observers</b> for Amsterdam albatross into the Amsterdam EEZ (for which no bycatch event has been reported yet).</li> </ul> <p><b>b. International level</b></p> <ul style="list-style-type: none"> <li>• <b>Measure the occurrence of the species and its degree of association with fishing vessels in its distribution range and in its important areas.</b></li> <li>• <b>Quantify seabirds bycatch on long-line fishing vessels</b> thanks to devoted observers.</li> <li>• <b>Design and apply an independent survey</b> (observers, video) of albatrosses bycatch (rate/importance) for all fisheries where Amsterdam albatross is at risk (identified in action 4.1), by using an evaluation of the best measures and protocols of data collection.</li> <li>• <b>Determine the intensity of survey needed to obtain reliable estimations</b> of albatrosses bycatch (rate/importance) for each fishery.</li> </ul>
<b>Localities targeted</b>	Indian Ocean
<b>Financial evaluation</b>	Costs of ship-based observations carried out : to be estimated Estimation of ~30,000€ during the whole plan. To be specified according to the plan outcomes.
<b>Specific funding call for NPA</b>	<b>Estimation of ~30,000€ during the whole plan. To be specified according to the plan outcomes.</b>
<b>Potential executive partners</b>	CNRS Chizé (Marine Predators Team, directed by H Weimerskirch), Ministry of foreign affairs, IPEV, IOTC, CCSBT, CCAMLR, Birdlife International, ACAP, Albatross Task Force, High Seas Task Force
<b>Potential funding</b>	Ministry of foreign affairs, National Nature Reserve of the French Southern lands/Ministry of Ecology
<b>Indicators of progress and evaluation</b>	Data on the seabirds bycatch rate (and more specifically of Amsterdam albatrosses) by fishing vessels in international waters and/or national waters accessible to the international community Launching of a survey on bycatch rates Evaluation of a minimum survey level to obtain reliable estimates
<b>References</b>	Weimerskirch et al. 1997 ; Inchausti & Weimerskirch 2001 ; Rivalan et al. 2010

<b>Action 4.4</b>	<b>Interactions with fisheries:</b>	<b>Priority</b>		
	<b>Supporting efforts to promote the application of conservation measures in fishing operations in the Indian Ocean</b>	1	2	3

<b>Domain</b>	Partnership/Protection/Communication
<b>Timetable</b>	Annual
<b>Context</b>	The results of recent studies on the at-sea distribution of seabirds (mainly breeding adults) showed a strong overlap of adult Amsterdam albatrosses with long-line fisheries, more specifically with those fisheries targeting southern blue-fin tuna. No bycatch event of Amsterdam albatross has been reported in these fisheries. Nevertheless, this species remains potentially at risk regarding any long-

	<p>line fishery operating into its distribution area, notably in the vicinity of Amsterdam island. Several scientific studies have documented the importance to use different conservation measures (closure of the fishing areas, “scare-crow” methods) to reduce seabirds bycatch.</p> <p>At present, bycatch mitigation measures and bycatch data collection and reporting requirements are inadequate as fisheries are not required to use seabird bycatch mitigation measures (streamer lines, integrated weight longlines...). Moreover, fisheries are not required to report bycatch or ring recoveries outside Exclusive Economic Zones (EEZs), and the proportion of the fishery covered by dedicated observers is too low (&lt;5%).</p>
<b>Description</b>	<p>This action does not aim at developing mitigation measures but rather at supporting actions already carried out in this way at the international level.</p> <p><b>a. International level</b></p> <p><b>Support and promote the international field initiatives currently carried out</b> and aiming at heightening different partners (mainly fishermen) awareness and use of the different techniques allowing to reduce interactions between seabirds and fishing gear causing bycatch into the sector of the Indian Ocean south of 25°S.</p> <p><b>Contribute to national/international efforts to develop seabirds bycatch mitigation techniques</b> in the involved fisheries. Facilitate this process through exchanges between scientists (workshops).</p> <p>Support international initiatives to reduce seabird bycatch, including in/at CCAMLR, IOTC, CCSBT &amp; ACAP.</p> <p>Ensure that the EU develops and implements a plan of action to reduce seabird bycatch in EU fleets.</p> <p><b>At the national level, a minimum of 3 efficient bycatch mitigation measures (i.e. night-setting, streamer lines, integrated weight longlines) are already applied</b> by longline fisheries in the French EEZs (Amsterdam, Kerguelen, Crozet).</p>
<b>Localities targeted</b>	Indian Ocean: IOTC sector, CCAMLR, EEZs of neighbouring countries
<b>Financial evaluation</b>	To be defined
<b>Specific funding call for NPA</b>	<b>To be defined</b>
<b>Potential executive partners</b>	CNRS Chizé (Marine Predators Team, directed by H Weimerskirch), IPEV, IOTC, CCSBT (via ACAP), Albatross Task Force, LPO, Birdlife International, National Nature Reserve of the French Southern lands. Supported by ACAP
<b>Potential funding</b>	National Nature Reserve of the French Southern lands / Ministry of Ecology
<b>Indicators of progress and evaluation</b>	Contribution to the different working groups, international and ACAP commissions Effective/best practice seabird bycatch mitigation measures formally adopted in IOTC
<b>References</b>	Inchausti & Weimerskirch 2001; Delord et al. 2010

<b>Action 4.5</b>	<b>Interactions with fisheries:</b>	<b>Priority</b>
	<b>Provide the RFMOs with estimates of the potential impact of fisheries on the Amsterdam albatross by combining on-land and at-sea surveys of individuals</b>	1 <b>2</b> 3

<b>Domain</b>	Protection / Communication
<b>Timetable</b>	Annual
<b>Context</b>	The results of recent studies on the at-sea distribution of seabirds (mainly breeding adults) showed a strong overlap of adult Amsterdam albatrosses with long-line fisheries, more specifically with those fisheries targeting southern blue-fin tuna. No bycatch event of Amsterdam albatross has been reported in these fisheries. Nevertheless, this species remains potentially at risk regarding any long-line fishery operating into its distribution area, notably in the vicinity of Amsterdam island. Several scientific studies have documented the importance to use different conservation measures (closure

	<p>of the fishing areas, “scare-crow” methods) to reduce seabirds bycatch.</p> <p>At present, bycatch mitigation measures and bycatch data collection and reporting requirements are inadequate as fisheries are not required to use seabird bycatch mitigation measures (streamer lines, integrated weight longlines...) in high seas in the IOTC zone. Moreover, fisheries are not required to report bycatch or ring recoveries outside Exclusive Economic Zones (EEZs), and the proportion of the fishery covered by dedicated observers is extremely low (&lt;5%).</p> <p>Both ACAP and Birdlife International are engaged in seabird conservation, via involvement in RFMOs. It is therefore important to contribute to actions carried out by these organisations.</p>
<b>Description</b>	<p><b>Increase awareness of IOTC of the seabirds bycatch issue</b>, specifically for this species</p> <p><b>Participate in international expert initiatives</b> beside RFMOs to reach an improvement of awareness in the priority to conserve certain species and to make obligatory the setting up of more sustainable fishing practices. For this we must <b>provide the RFMOs with estimates of the potential impact of fisheries on the Amsterdam albatross population</b> by combining on-land and at-sea surveys of individuals (with action 4.1).</p> <p>Provide to the international scientific community at-sea surveys of Amsterdam albatrosses (with action 3.1) via the <i>Procellariiform Tracking Database</i> managed by Birdlife International</p>
<b>Localities targeted</b>	Indian Ocean
<b>Financial evaluation</b>	Funds needed for this action stand for the trips of scientists from CNRS Chizé involved in seabirds research & conservation to participate in working groups meetings of the RFMOs different commissions (IOTC, CCSBT) and ACAP (4000€/year)
<b>Specific funding call for NPA</b>	CNRS Chizé (Marine Predators Team, directed by H Weimerskirch), IRD (A Fonteneau), IPEV, Birdlife International, ACAP, plea to the French negotiator of the Ministry of foreign affairs, IOTC, CCSBT
<b>Potential executive partners</b>	Ministries / Ministry of Ecology
<b>Potential funding</b>	Contribution of 3,000€/year <b>Thus 12,000€ for the whole plan duration</b>
<b>Indicators of progress and evaluation</b>	<p>Representation of France at IOTC</p> <p>Contribution to the different working groups of the international commissions and ACAP, notably by providing data on the areas where fisheries and Amsterdam albatrosses overlap</p> <p>Progress in implementing mitigation measures and increasing the minimum coverage rate of fisheries by devoted observers.</p>
<b>References</b>	Weimerskirch et al. 1997 ; Inchausti & Weimerskirch 2001 ; Rivalan et al. 2010