



Agreement on the Conservation of Albatrosses and Petrels

Sixth Meeting of Advisory Committee

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National Plan of Actions for the conservation of the Amsterdam albatross *Diomedea amsterdamensis* in France

France

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National Plan of Actions for the conservation of the Amsterdam albatross *Diomedea amsterdamensis* in France

1. NEEDS AND STAKES OF THE CONSERVATION OF THE AMSTERDAM ALBATROSS

As with many islands that are home to seabird populations, Amsterdam Island has experienced a series of human-induced perturbations since it was discovered (introduction of animal and plant species, fires). As elsewhere, island restoration is a challenge: the state of the original ecosystem is difficult to define and restoration aims may be vague and mobile, making it difficult to define exactly what to restore (Simberloff 1990). In the specific case of Amsterdam, knowledge on the original state of the island is virtually non-existent: this complicates the design of a plan aiming to a return to a 'natural' situation. Ancient descriptions of the island by mariners show the island had a 'forest belt' of *Phylica* trees, limited today to a small wood. We also know that sealers nearly extirpated the fur seals, which were formerly extremely abundant. Finally, subfossil bones on the island reveal the former presence of numerous species that seem extinct today (flightless duck, petrels), and also of the endemic Amsterdam albatross. However, there is no information to estimate the size of this latter population before first human landings and the species was described only in the middle of the 20th century. This population had been completely overlooked until then, probably due to the location of its nesting area on a very isolated part of the island.

Studies on the terrestrial habitats and soil of the island revealed that low-altitude areas have experienced considerable modification (grazing by cattle, fires), with dramatic loss of soil substrates, hence limiting restoration of the 'original' vegetation (and excludes, on the worst affected areas, full restoration). The current nesting area of Amsterdam albatrosses has only suffered a little damage, but the indigenous vegetation of mosses and ferns is highly vulnerable to trampling and to decreases in local rainfall.

1.1. 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.

Comment [MLT1]: MARK TASKER:
Not sure that I understand this, it says 2007 below and there seems no evidence to suggest any slowing 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).

Comment [MLT2]: MARK TASKER:
Not sure that I understand this either

1.2. 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).

1.2.1. 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

1.2.2. 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)

Comment [F3]: Ajout ACAP

1.3. 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.

Comment [F4]: Ajout ACAP
Avant : "individuals in order to"

2. STRATEGY OF THE PLAN

2.1. 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.

Comment [MLT5]: MARK TASKER:
Surely the aim to to build the population, not to maintain it ?

Comment [F6]: Ajout ACAP
Avant : maintain this population on long term

Comment [F7]: Ajout ACAP

2.2. 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 risk 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.

2.2.1. Long-term monitoring: scientific knowledge and research

Action 1.1	Long-term monitoring:	Priority 1 2 3
	Maintenance of the long-term survey of the Amsterdam albatross	
Domain	Study /Protection/Communication	
Timetable	Current/annual	
Context	The breeding pairs have been counted every year since the species was described in 1984, and an individual-based survey is also carried out annually. It is essential to maintain this long-term monitoring activity to get reliable indicators of the population trend.	
Description	<ul style="list-style-type: none"> Collect data annually: count breeding pairs and locate nests on the breeding site every year, record the presence of individually ringed birds and breeding status of all individuals present (mate identity, breeding success, etc.) Monitor the 'disappearance' of adult individuals from the breeding site Centralise and manage data collected and contribute to the ACAP database annually <p>The goal of this action is to census annually the number of breeding pairs on the world's single nesting site. This action also enables the annual monitoring of all individuals present and their breeding status, and also to ring the chicks produced each year. This fieldwork is carried out each year by the over-wintering volunteer on Amsterdam Island within the framework of the French Polar Institute IPEV scientific programme no. 109 (directed by H Weimerskirch).</p> <p>Results of this action affect the onset of action 1.2</p>	
Localities targeted	Breeding site: Plateau des tourbières, Amsterdam Island	
Financial evaluation	Funding of this action reports to IPEV (via programme no. 109) and to CNRS	
Specific funding call for NPA	No funding is asked for this action	
Potential executive partners	CNRS Chizé (Marine Predators Team, directed by H Weimerskirch), IPEV, National Nature Reserve of the French Southern lands	
Potential funding	IPEV/National Nature Reserve of the French Southern lands	
Indicators of progress and evaluation	Evolution of the population size estimates Survey on the anomalous disappearance of breeding individuals	
References	Weimerskirch et al. 1997; Inchausti & Weimerskirch 2001; Rivalan et al. 2010; IPEV Research Programme no. 109	

Comment [M8]: ROSEMARY GALES: Agree that this is fundamental to the POA and is correctly assigned Priority 1. Could also add "Update ACAP database annually" in the description.

Comment [F9]: Ajout ACAP

Comment [F10]: Ajout ACAP

Action 1.2	Long-term monitoring:	Priority 1 2 3
	Demographic analyses and survey of status and long-term trend of the Amsterdam albatross population	
Domain	Study /Protection/Communication	
Timetable	Current/periodic	
	To be carried out during year 5 unless results of action 1.1 indicate the need for an intermedia	

Comment [M11]: ROSEMARY GALES: Agree that these analyses are fundamental and correctly assigned Priority 1. I would recommend Timetable to be altered to "Current/annual" rather than "Current/periodic" – as the population trend and demographic analyses should be revised annually (as stated in the description section). Again, could also add "Update ACAP database" in the description.

	analysis, comparative with Rivalan et al. 2010
Context	The breeding pairs have been counted every year since the species was described in 1984, and an individual-based survey is also carried out annually. It appears essential to maintain this long-term monitoring activity in order to have a reliable indication of population trend, and to be able to detect rapidly any problem or change in this trend.
Description	<ul style="list-style-type: none"> • Analysis of the population trend every year using demographic data. Analysis of the numerical trend of the breeding population and estimation of survival rates by age class • Scientific publications <p>The goal of this action is to carry out the long-term trend survey of the global population of the Amsterdam albatross, in order to re-evaluate its status. This is done every year by the scientists from CNRS Chizé in charge of the long-term trends.</p>
Localities targeted	Breeding site: Plateau des tourbières, Amsterdam Island
Financial evaluation	Funding needed for this action reports to CNRS (Chizé) which performs demography analyses. Funding of a database engineer in charge of monitoring this population, for 1 month (3,000€/year)
Specific funding call for NPA	No funding is asked for this action
Potential executive partners	CNRS Chizé (Marine Predators Team, directed by H Weimerskirch), IPEV, National Nature Reserve of the French Southern lands
Potential funding	CNRS
Indicators of progress and evaluation	Trend of the Amsterdam albatross population Trend of the demographic parameters (breeding success, recruitment rate, survival...)
References	Inchausti & Weimerskirch 2001; Rivalan et al. 2010; IPEV Research Programme no. 109

Action 1.3	Long-term monitoring:	Priority		
	Demographic modelling & projection of the Amsterdam albatross population under different scenarios of conservation strategies	1	2	3

Comment [M12]: ROSEMARY GALES: Given the broad scope of the POA, I agree with both the timeframe and priority (3) of this action item.

Domain	Study / Communication
Timetable	To be carried out during year 5 (results already available from a recent study prior to year 1), unless alert from action 1.1
Context	The breeding pairs have been counted every year since the species was described in 1984, and an individual-based survey is also carried out annually. Within this framework, this action will allow the prediction of the evolution of the Amsterdam albatross population under different scenarios (i.e., natural ones and/or with different management actions).
Description	<p>Demographic modelling and projection of the Amsterdam albatross population will have to be carried out during the last year of the NPA using various scenarios (i.e., natural ones and/or with different management actions):</p> <ul style="list-style-type: none"> • Model functional relationships between the demographic responses observed on the colony and the oceanic conditions in the "hotspots" of habitat use (identified in action 4.2) • Develop predictive models to predict the population trend, by integrating the ecological and environmental variables affecting the distribution by age/sex/season • Integrate the long-term monitoring data on the Amsterdam albatross into other databases (i.e., multi-specific and environmental), in order to estimate the potential for this population as an indicator of changes in the marine environment (at a local- or large-scale). <p>This action is dedicated to provide a helping tool for decisional instances and managers of the</p>

	National Nature Reserve of the French Southern lands (notably prior to action 6.2).
Localities targeted	Breeding site: Plateau des tourbières, Amsterdam Island
Financial evaluation	This action will be performed thanks to an engineer contract at CNRS Chizé (4 months, 3,000€/month)
Specific funding call for NPA	3,000€/month, hence 12,000€ on the whole NPA period
Potential executive partners	CNRS Chizé (Marine Predators Team, directed by H Weimerskirch)
Potential funding	Researchers of the CNRS Chizé involved in the analyses/National Plan for Actions
Indicators of progress and evaluation	The projections of population size estimates according to different environmental scenarios allow to give priority criteria to managing actions considered
References	Inchausti & Weimerskirch 2001; Rivalan et al. 2010; IPEV Research Programme no. 109

2.2.2. Epizooty

Action 2.1	Epizooty : Improving knowledge of the potential pathogens of the Amsterdam albatross	Priority 1 2 3
Domain	Study /Protection/Communication	
Timetable	Annual	
Context	Scientific studies allowed the detection of the presence of bacteria responsible for the disease Erysipelas (<i>Erysipelothrix rhusiopathidae</i>) and avian cholera (<i>Pasteurella multocida</i>) that severely affected chicks of the yellow-nosed albatross, a taxonomically close species, that breeds on colonies neighbouring that of the Amsterdam albatross. The risks of contaminating the Amsterdam albatrosses are high (through indigenous birds such as skuas, but also through introduced mammals). Two previous years with high chick mortality in Amsterdam albatrosses may reflect disease with associated mortality. It is therefore very important to document whether these pathogens (or other ones) are found in Amsterdam albatrosses, and more widely on other seabird species, notably those species that may be found in close contact to Amsterdam albatrosses.	
Description	<p>Launching and maintenance of studies on the following themes:</p> <ul style="list-style-type: none"> • Searching for the presence of these two pathogens or associated antibodies in adults and chicks of Amsterdam, yellow-nosed and dark-mantled sooty albatrosses, subantarctic skua and northern rockhopper penguin, and their effects (mortality, virulence...), • Studying the life-cycle of these two pathogens enabling to determine their <i>in situ</i> resistance, virulence, prevalence, vectors, cyclicity... • Launching of a long-term survey focusing on these pathogens • Re-evaluation of the preventive rules applied on the field against dissemination of pathogen agents, depending on the results obtained • Scientific publications <p>This work will be made by a specialist team from ONCFS (SAGIR web, specialised in animal epizooty, directed by O Mastain), in collaboration with IPEV Research Programme no. 109 (directed by H Weimerskirch)</p>	
Localities targeted	Breeding site: Plateau des tourbières, Amsterdam Island	

Comment [M13]: RICHARD PHILLIPS: This is a very worthwhile action given how little knowledge there is of the prevalence and impact of pathogens on seabirds, and the obvious need to review field practices to eliminate the risk that field workers might transfer pathogens on their skin or clothing from other species to Amsterdam albatrosses.

Comment [F14]: Entièrement d'accord avec cette remarque, nous devons dvp la connaissance sur la transmission de pathogènes par le personnel de terrain.

Financial evaluation	<ul style="list-style-type: none"> - Fieldwork by 1 specialist in avian epizooty from ONCFS during 1 month (November 2010 + 1 contract for 2 month (November-December 2010) 8,000€, and training of the IPEV programme 109 fieldworker for the NPA - Specific gear: tools for autopsy (250 €), small equipment for sampling (250€), 1 centrifuge (785€), camera for autopsy (850€) - Analyses : <ul style="list-style-type: none"> • Amsterdam albatross: complete scanning of all pathogens on samples (blood and samples/rectal swab): 300€/sample * 20 individuals (adults and chicks) = 6,000€ • Other species (yellow-nosed and dark-mantled sooty albatrosses, subantarctic skua and northern rockhopper penguin): search analysis for avian cholera prevalence: 80€/individual : 60 yellow-nosed albatrosses in different colonies, 15 sooty albatrosses, 10 skuas, 15 rockhopper penguins = 8,000€ - coordination, project management, report from experts: 3,000€ ONCFS + engineer NPA 1 month (3,000€/month) - Involvement of IPEV programme 109 fieldworker in the NPA - Boarding on R/V Marion Dufresne and accommodation (15,000€)
Specific funding call for NPA	<ul style="list-style-type: none"> - Only part of the total funding is asked for this action. The remaining part comes from the National Nature Reserve of the French Southern lands, TAAF, and IPEV - Funding asked for this action is 20,000€
Potential executive partners	Expert in epizootics O. Mastain (ONCFS SAGIR), CNRS Chizé (Marine Predators Team, directed by H Weimerskirch), IPEV, National Nature Reserve of the French Southern lands
Potential funding	National Nature Reserve of the French Southern lands / NPA / Action Plan for Biodiversity / IPEV
Indicators of progress and evaluation	<p>Outcome and epidemiologic survey of the Amsterdam albatross population (sanitary vigilance)</p> <p>Ability of the managers of the National Nature Reserve of the French Southern lands to face an epidemiological threat on the population</p> <p>Scientific reports and articles, communication</p>
References	Weimerskirch & Ghestem 2001; Weimerskirch 2004; IPEV Research Programme no. 109

2.2.3. Marine habitat use

Action 3.1	Marine habitat use:	Priority		
	Improving knowledge on the at-sea distribution of the Amsterdam albatross	1	2	3

Domain	Study /Protection/Communication
Timetable	Current/annual
Context	<p>Scientific studies have allowed both the acquisition and improvement of knowledge about the Amsterdam albatross ecology, on land as well as at sea. Nevertheless, some research fields remain to be studied and/or detailed. The at-sea distribution for certain life-cycle phases is still unknown (adults during chick brooding, immatures) and data already available on at-sea distribution comprise small individual numbers, or for only specific phases of the species life-cycle. Moreover, it seems important to acquire data on the at-sea distribution of individuals from different age-classes and stages on a sufficiently long term in order to evaluate the influence of the environmental conditions on the at-sea <u>distribution</u>.</p> <p>The acquisition of new data on the individuals' at-sea distribution must be managed through database to facilitate data quality control and exportations.</p>

Comment [M15]: MARCO FAVERO:
Also for the analysis of overlapping with fisheries and detailed and robust risk assessments by age/gender and quarters.

Description	<p>Launching and maintenance of studies on the following themes:</p> <ul style="list-style-type: none"> • Study the individuals' at-sea distribution: data already available mainly concern breeding adults (during incubation phase). Our goals are to: <ul style="list-style-type: none"> 1) acquire new data on adults brooding chicks (May-December) and on immatures, using ARGOS satellite tracking 2) increase sample sizes for studies of birds during sabbatical year and fledgling using geolocation technique, and incubating adults using ARGOS satellite tracking 3) acquire multi-year dataset to evaluate variability of the at-sea distribution preferab relating such variation to changes in environmental conditions • Combine at-sea tracking data at specific time scales to delineate distribution area, core range, and hotspots of habitat use for each one of the breeding stages and life-cycle phases • Construct a spatial database to gather Amsterdam albatross tracking data description and at-sea observations from ships • Control quality of new data and analyse them • Carry out an analytic survey to identify the spatio-temporal gaps in the datasets (age/sex, season...) • Scientific publications <p>This is carried out within the framework of the French Polar Institute IPEV scientific programme no. 109 (directed by H Weimerskirch).</p>
Localities targeted	Breeding site: Plateau des tourbières, Amsterdam Island / Indian Ocean
Financial evaluation	<p>Funding needed for this action reports to IPEV via funding of its scientific programmes, and to CNRS regarding staff presence on the field; however this action needs a specific funding as a complement to buy telemetry devices and data analysis.</p> <p>Year 1: Survey of breeding adults (chick rearing): 10 ARGOS tags (25,000€), functioning during 6 months (location costs = 6,000€)</p> <p>Survey of adults during sabbatical year: 10 GLS loggers (5,000€) and analysis (5,000€)</p> <p>Year 2: Survey of juveniles and immatures : 15 ARGOS tags (45,000€) + location costs (15,000€)</p> <p>Year 2 and 4: Data analysis: 2*2 months (3,000€/month) engineer NPA</p> <p>Year 5: Synthesis of at-sea distribution, and database: to be carried out within the framework of an engineer NPA contract for 1 month (3,000€/month) at CNRS Chizé</p> <p>Multi-annual: Survey of juveniles: 20 GLS loggers/year (4,000€/year, analysis 5,000€/year)</p> <p>Funding for an engineer contract to carry out actions 1.2, 3.1 and 3.3</p> <p>Boarding on R/V Marion Dufresne and accommodation (non quantified)</p>
Specific funding call for NPA	<ul style="list-style-type: none"> - Only part of the total funding is asked for this action. The remaining part comes from the National Nature Reserve of the French Southern lands, TAAF, and IPEV - Funding asked for this action is 73,000€
Potential executive partners	CNRS Chizé (Marine Predators Team, directed by H Weimerskirch), IPEV, National Nature Reserve of the French Southern lands
Potential funding	Private foundations / National Nature Reserve of the French Southern lands / Action Plan for Biodiversity / NPA / IPEV
Indicators of progress and evaluation	<p>Number of individuals tracked/equipped (satellite tags / GLS)</p> <p>Identification of the core-use areas and key habitats for birds at each one of the breeding and life-cycle stages</p> <p>Activation of a spatialised database</p> <p>Scientific reports and articles, communication</p>

Comment [MLT16]: MARK TASKER: In essence, it may not be possible to relate to environmental change, but knowledge of variability is important in its own right

Comment [F17]: Modif ACAP Avant : according to the

References	IPEV Research Programme no. 109
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Action 3.2	Marine habitat use: Modelling & predicting at-sea distribution of Amsterdam albatrosses under different scenarios of conservation strategies	Priority 1 2 3	Comment [MF18]: MARCO FAVERO: Given the strong connection between actions 3.1 and 3.2 it is not clear why priorities differ (these two actions could be condensed into a single one).
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Domain	Study/Protection/Communication
Timetable	Year 5
Context	Scientific studies allowed both the acquisition and improvement of knowledge about the Amsterdam albatross biology and ecology, on land as well as at sea. Nevertheless, some research fields remain to be more detailed, notably regarding at-sea distribution data of the individuals during different life-cycle phases. The objective of this work is understand how environmental conditions affect at-sea distribution using data that is available or about to be acquired (action 3.1).
Description	<p>Build models that may predict at-sea distribution of the Amsterdam albatross population, under different scenarios (i.e., natural ones and/or with different management actions):</p> <ul style="list-style-type: none"> • Model functional relationships between individuals' at-sea distribution and environmental variables (wind, sea-surface temperature, chlorophyll, bathymetry...) • Develop predictive niche models to forecast at-sea distribution of the population under different scenarios of environmental change, by integrating ecological and environmental variables affecting the distribution by age/sex/season • Combine at-sea and at-land survey in a tool to aid decision makers and managers of the National Nature Reserve of the French Southern lands, for instance in advising RFMOs. Use this tool to identify thresholds for conservation actions. • Within the framework of the blueprint plan: after 10 years of survey of individuals' at-sea distribution, evaluate the trends of the Amsterdam albatross at-sea distribution.
Localities targeted	Indian Ocean
Financial evaluation	Funding needed for this action reports to IPEV (via programme no. 109) and to CNRS Chizé for data analysis in France mainland. Practically, this action will be performed thanks to an engineer NPA contract (6 months, 3,000€/month)
Specific funding call for NPA	No funding is asked for this action
Potential executive partners	CNRS Chizé (Marine Predators Team, directed by H Weimerskirch)
Potential funding	Researchers of the CNRS Chizé involved in the analyses / Private Foundations / National Nature Reserve of the French Southern lands
Indicators of progress and evaluation	Evaluation on a mid- and long-term of the at-sea distribution trend Get projections of the at-sea distribution of the population under different environmental scenarios allowing to sort priority amongst management measures planned Launch a decision-support tool Scientific reports and articles, communication

Comment [M19]: MARCO FAVERO: Earlier in the schedule?

Action 3.3	Marine habitat use: Identification of important marine areas for Amsterdam	Priority 1 2 3
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	<u>albatrosses</u>	
Domain	Study / Protection / Communication	
Timetable	Years 1 & 5	
Context	<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>	
Description	<p>Launching and maintenance of studies on the following themes:</p> <ul style="list-style-type: none"> • Identify important marine areas for this species according to priority criteria based on the same procedure as to delineate Marine Important Bird Areas- Marine IBAs (Birdlife International). • Develop a web to identify Marine IBAs of interest for at-sea protection of albatrosses, encompassing areas in international waters 	
Localities targeted	Indian Ocean	
Financial evaluation	This action is to be carried out within the framework of an engineer NPA contract in spatial analysis and fisheries statistics during 3 months in year 1 + 2 months in year 5 (3,000€/mois) CNRS Chizé LPO	
Specific funding call for NPA	No funding is asked for this action	
Potential executive partners	<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, Koreaes, Taiwan, Japan, South Africa, Australia, New Zealand, Madagascar</p>	
Potential funding	National Nature Reserve of the French Southern lands / Action Plan for Biodiversity / NPA	
Indicators of progress and evaluation	<p>Identification of Marine IBAs</p> <p>Establish priorities to action sites</p> <p>Scientific reports and articles, communication of results</p>	
References	Inchausti & Weimerskirch 2001; Rivalan et al. 2010	

Comment [M20]: MARCO FAVERO: Might be better for the structure of this section to move 3.3 one above (swaping 3.2 and 3.3 in order), so the improvement of at sea distribution will be linked with IBAs and modelling down in the timetable and priority.

Comment [M21]: MARCO FAVERO: Description here looks brief compared with other sections.

Comment [M22]: MARK TASKER: not sure what you do with a marine IBA in international waters. They have no international standing, there is no agreed establishment procedure at an international level and no agreed way of getting management measures for them! One would hope that fisheries management measures would be taken in ALL Amsterdam albatross waters, rather than confined to an IBA – it might in fact be that an IBA would distract managers into that small area instead of dealing with all waters!

Action 3.4	Marine habitat use:	Priority		
	Documenting Amsterdam albatrosses' diet in relation with fisheries	1	2	3

Domain	Study / Communication
Timetable	Annual
Context	Scientific studies allowed both the acquisition and improvement of knowledge about the Amsterdam albatross biology and ecology, on land as well as at sea. Nevertheless, diet has never been studied. Yet, it would be necessary to evaluate occurrence of fisheries-related items (i.e., baits) in diet.
Description	<p>Launching studies on the following themes:</p> <ul style="list-style-type: none"> • Collect and analyse systematically rejection pellets around or on the nests to search for fisheries-related items (hooks, fishing gear, bait, fishery discards...).

Comment [M23]: MARCO FAVERO: Analysis of C/N isotopic composition in predators and preys (including target and discarded fish from fisheries) may provide a good indicator, at relatively low cost and impact for albatrosses.

	<ul style="list-style-type: none"> Prospect systematically around nests with metals detector (hooks), Centralise and manage collected data, Scientific publications. <p>This is to be done within the framework of the French Polar Institute IPEV scientific programme no. 109 (directed by H Weimerskirch).</p>
Localities targeted	Breeding site: Plateau des tourbières, Amsterdam Island
Financial evaluation	Funding needed for this action reports to IPEV via funding of its scientific programmes, and to CNRS regarding staff presence on the field. 1 fieldworker contract for 6 months: 6 * 2,122€ Boarding on R/V Marion Dufresne and accommodation (non quantified)
Specific funding call for NPA	Contribution to fieldwork costs (scientific studies performed): 10,000€
Potential executive partners	CNRS Chizé (Marine Predators Team, directed by H Weimerskirch), IPEV, National Nature Reserve of the French Southern lands
Potential funding	Action Plan for Biodiversity / NPA / IPEV
Indicators of progress and evaluation	Evaluation of occurrence of fisheries-related items in diet Scientific reports and articles, communication
References	IPEV Research Programme no. 109

Action 3.5	Marine habitat use:	Priority		
	Acquisition of knowledge on Amsterdam albatross diet	1	2	3

Domain	Study / Communication
Timetable	Punctual/Periodical To be realised according to results of actions 3.3, 3.4 and 5.1
Context	Scientific studies allowed both the acquisition and improvement of knowledge about the Amsterdam albatross biology and ecology, on land as well as at sea. Nevertheless, diet has never been studied. Yet, diet study would allow revealing interactions between the species and fisheries (baits, fishery discards...)
Description	<p>Following results of actions 3.3, 3.4 and 5.1 that would indicate the occurrence of items linked to fisheries in the birds' food, and/or large overlaps between important bird areas and fisheries, the following studies need to be started:</p> <ul style="list-style-type: none"> Diet study over a breeding cycle, from regurgitates collected from chicks on the colony. About 10 chicks during two successive years. The meal lost by the chick will be compensated by feeding chick a similar amount of food to that collected. Survey diet evolution (rejection pellets) as a function of environmental conditions and relationships with certain breeding success or survival parameters. Centralise and manage collected data Scientific publications <p>This is to be done within the framework of the French Polar Institute IPEV scientific programme no. 109 (directed by H Weimerskirch).</p>
Localities targeted	Breeding site: Plateau des tourbières, Amsterdam Island
Financial	Funding needed for this action reports to IPEV via funding of its scientific programmes, and to CNRS

Comment [F24]: Modif ACAP
Avant : as possible on the field

evaluation	regarding staff presence on the field. 1 fieldworker contract for 6 months: 6 * 2,122€ Cost of diet analyses: technician for 3 months (2122 × 3 = 6366 €) + researcher CNRS Chizé (DR2) for 1 month
Specific funding call for NPA	See Action 3.4
Potential executive partners	CNRS Chizé (Marine Predators Team, directed by H Weimerskirch), IPEV, National Nature Reserve of the French Southern lands
Potential funding	National Nature Reserve of the French Southern lands
Indicators of progress and evaluation	Description, quantification and survey of diet Scientific reports and articles, communication
References	IPEV Research Programme no. 109

2.2.4. *Mitigation measures to reduce potential risk of bycatch, survey of potential interaction with fisheries*

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.

Comment [F25]: Modif ACAP
Avant : Strongly subject to

Comment [F26]: Ajout ACAP

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.

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

Domain	Study / Protection/Communication
Timetable	Years 1 & 5
Context	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. 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.
Description	<p>Starting and maintaining studies on the following topics :</p> <ul style="list-style-type: none"> • Characterise fisheries in the southern Indian Ocean within the distribution area of the Amsterdam albatross, 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. • Analyse dynamically the overlap between albatrosses and fisheries determined in actions 3.1 and 3.3 • Evaluate utilisation and risks incurred by birds in managed areas (EEZs, RFMOs etc) • Identify national and managing jurisdictions by overlaying Marine IBAs and contours of EEZs and RFMOs. Report the results to nations, resource management authorities and to ACAP. • Propose fishing action layouts (closure of sectors, seasonal measures, etc)
Localities targeted	Indian Ocean
Financial evaluation	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)
Specific funding call for NPA	<p>Year 1: 9,000€</p> <p>Year 5: 6,000€</p> <p>= 15,000€ for the whole plan.</p>
Potential executive partners	<p>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</p> <p>RFMOs : IOTC/CCSBT, Coreas, Taiwan, Japan, South Africa, Australia, New Zealand, Madagascar</p>
Potential funding	National Nature Reserve of the French Southern lands/ Action Plan for Biodiversity / NPA
Indicators of progress and evaluation	<p>Description of the southern Indian Ocean fisheries</p> <p>Identification of the overlaps between marine IBAs and operating fisheries</p> <p>Sort priorities in action sites</p> <p>Development of a partners web</p> <p>Scientific reports and articles, communication of results</p>
References	Weimerskirch et al. 1997 ; Inchausti & Weimerskirch 2001 ; Rivalan et al. 2010

Comment [MLT27]: MARK TASKER:
These are not jurisdictions and they have not yet been defined. Surely better just to overlay Amsterdam albatross distribution ?

Comment [F28]: Ajout de "ACAP" et retrait de "NGOs"

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

Domain	Study / Protection/Communication
Timetable	Annual
Context	<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</p>

	lines or specification of a speed of immersion of the lines). 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.
Description	<p>a. National level</p> <p>Maintain application of the 3 above mitigation measures by long-line fisheries in the French EEZ (Amsterdam, Kerguelen, Crozet), sectors identified (action 4.1) as being used by Amsterdam albatrosses.</p> <p>Maintain a coverage rate of 100% by dedicated observers for the Amsterdam albatross in the French EEZs.</p> <p>b. International level</p> <p>Reach the application of the 3 above mitigation measures by long-line fisheries in the sector identified as used (action 4.1) by Amsterdam albatrosses (whatever the stage, age, or utilization level) in the IOTC and CCSBT zones.</p> <p>Ask for the delineation of a special zone for the Amsterdam albatross 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>
Localities targeted	Indian Ocean
Financial evaluation	To be determined
Specific funding call for NPA	To be determined
Potential executive partners	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
Potential funding	Ministry of Ecology / Ministry of foreign affairs
Indicators of progress and evaluation	<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>
References	Inchausti & Weimerskirch 2001 ; Rivalan et al. 2010 ; BirdLife International Fact-sheets "Bycatch Mitigation"

Comment [AW29]: ANTON WOLFAARDT: Maybe a reference to ACAP best practice guidelines, especially as 'best practice' may evolve over time.

Comment [AW30]: ANTON WOLFAARDT: Maybe useful to have a point here about engaging through ACAP and with other ACAP Parties to progress seabird bycatch mitigation in priority areas/RFMOs

Comment [F31]: Ajout ACAP

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

Domain	Study / Protection/Communication
Timetable	Annual
Context	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
Description	<p>a. National level</p> <ul style="list-style-type: none"> • Maintain a coverage rate of 100% by dedicated observers for Amsterdam albatross into the Amsterdam EEZ (for which no bycatch event has been reported yet). <p>b. International level</p> <ul style="list-style-type: none"> • Measure the occurrence of the species and its degree of association with fishing vessels in its distribution range and in its important areas. • Quantify seabirds bycatch on long-line fishing vessels thanks to devoted observers. • Design and apply an independent survey (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. • Determine the intensity of survey needed to obtain reliable estimations of albatrosses bycatch (rate/importance) for each fishery.
Localities targeted	Indian Ocean
Financial evaluation	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.
Specific funding call for NPA	Estimation of ~30,000€ during the whole plan. To be specified according to the plan outcomes.
Potential executive partners	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
Potential funding	Ministry of foreign affairs, National Nature Reserve of the French Southern lands/Ministry of Ecology
Indicators of progress and evaluation	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
References	Weimerskirch et al. 1997 ; Inchausti & Weimerskirch 2001 ; Rivalan et al. 2010

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

Comment [AW32]: ANTON WOLFAARDT: I would rate this as a 1 or at least a 2.

Domain	Partnership/Protection/Communication
Timetable	Annual
Context	<p>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 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 line integrated weight longlines...). Moreover, fisheries are not required to report bycatch or recoveries outside Exclusive Economic Zones (EEZs), and the proportion of the fishery covered b</p>

Comment [F33]: Ajout ACAP. Avant : it has to be acknowledged that

Comment [AW34]: ANTON WOLFAARDT: Wonder if it would be better to say that bycatch mitigation measures and bycatch data collection and reporting requirements are currently inadequate

	dedicated observers is too low (<5%).
Description	<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>a. International level</p> <p>Support and promote the international field initiatives currently carried out 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>Contribute to national/international efforts to develop seabirds bycatch mitigation techniques 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 (ACAP).</p> <p>Ensure that the EU develops and implements a plan of action to reduce seabird bycatch in EU fleets.</p> <p>At the national level, a minimum of 3 efficient bycatch mitigation measures (i.e. night-setting streamer lines, integrated weight longlines) are already applied by longline fisheries in the French EEZs (Amsterdam, Kerguelen, Crozet).</p>
Localities targeted	Indian Ocean: IOTC sector, CCAMLR, EEZs of neighbouring countries
Financial evaluation	To be defined
Specific funding call for NPA	To be defined
Potential executive partners	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
Potential funding	National Nature Reserve of the French Southern lands / Ministry of Ecology
Indicators of progress and evaluation	Contribution to the different working groups, international and ACAP commissions Effective/best practice seabird bycatch mitigation measures formally adopted in IOTC
References	Inchausti & Weimerskirch 2001; Delord et al. 2010

Comment [AW35]: ANTON WOLFAARDT: Again, it may be useful to include reference to engaging in ACAP RFMO initiatives. I see this is indicated in the next sentence, but it would be good to have it mentioned more explicitly

Comment [AW36]: ANTON WOLFAARDT: It may also be useful to add the current process to develop an EU plan of Action for reducing seabird bycatch. Although this is primarily aimed at fishing in EU waters, it does also cover EU flagged vessels fishing elsewhere. I don't know how many EU flagged vessels fish in areas that are important for Amsterdam albatrosses, but it would certainly be good to have the support of France in ensuring this EU Plan is effective.

Comment [MLT37]: MARK TASKER: This is a suggestion to meet Anton's point

Comment [F38]: Ajout ACAP

Comment [F39]: Ajout ACAP

Action 4.5	Interactions with fisheries: 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	Priority 1 2 3
Domain	Protection / Communication	
Timetable	Annual	
Context	<p>The results of recent studies on the at-sea distribution of seabirds (mainly breeding adults) showed 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 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 line 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 (<5%).</p>	

Comment [AW40]: ANTON WOLFAARDT: Not knowing exactly how the prioritisation process was followed, it's difficult to assess these priority scores. But, I would say this would be a very useful contribution to make to the key RFMOs. The fact that additional mortality of only 6 individuals each year would drive Amsterdam albatrosses to extinction is a powerful point, which would be good to make to RFMOs and other audiences

Comment [AW41]: ANTON WOLFAARDT: Wonder if it would be better to say that bycatch mitigation measures and bycatch data collection and reporting requirements are currently inadequate

	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.	Comment [F42]: Modif ACAP Avant : Different NGOs
Description	<p>Increase awareness of IOTC of the seabirds bycatch issue, specifically for this species</p> <p>Participate in international expert initiatives beside RFMOs to reach an improvement awareness in the priority to conserve certain species and to make obligatory the setting up of more sustainable fishing practices. For this we must provide the RFMOs with estimates of the potential impact of fisheries on the Amsterdam albatross population 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>	Comment [AW43]: ANTON WOLFAARDT: ACAP is not an NGO but an IGO (Inter-government organisation) ?
Localities targeted	Indian Ocean	
Financial evaluation	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)	
Specific funding call for NPA	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	
Potential executive partners	Ministries / Ministry of Ecology	
Potential funding	Contribution of 3,000€/year Thus 12,000€ for the whole plan duration	
Indicators of progress and evaluation	Representation of France at IOTC 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 Progress in implementing mitigation measures and increasing the minimum coverage rate of fisheries by devoted observers.	
References	Weimerskirch et al. 1997 ; Inchausti & Weimerskirch 2001 ; Rivalan et al. 2010	

2.2.5. Terrestrial habitat

Action 5.1	Terrestrial habitat: Characterisation and survey of the favourable nesting habitats	Priority 1 2 3	Comment [M44]: RICHARD PHILLIPS: It seems so unlikely that availability of suitable habitat is limiting the population, that I agree that this Action is low priority.
Domain	Study /Protection/Communication		
Timetable	Years 3 and 5		
Context	The Amsterdam albatross has been "re-discovered" and described very recently : hence, there are neither baseline numbers (the 5 pairs mentioned in 1982 cannot as a proper historical baseline) nor a proper understanding of the original nesting area. Historical data are available, first on the distribution of nests and sub-fossil bones, and second in the soil map of Amsterdam Island. However, no characterisation of the nesting habitat of the species has been made. Based on these data, it appears clearly that the favourable nesting habitat has never reached the limit of its carrying capacity (noting the maximal densities observed for wandering albatross colonies). This action takes place within the survey of environmental changes that may affect the terrestrial habitats.		
Description	<ul style="list-style-type: none"> Characterise the nesting habitat through a study using the soil map (surveyed in 1988), available data on vegetation, physical environment and albatross nest location (surveyed fully since 1999) with full geo-referencing. Within this framework, complete the vegetation coverage analysis of both nesting and potential habitats, and to detail at fine-scale the plant 		

	<p>and invertebrate communities associated to the nests.</p> <ul style="list-style-type: none"> Survey the invasive species (plants, invertebrates) and their impact on the habitat Evaluate the carrying capacity of the site for albatrosses: <ul style="list-style-type: none"> measure the area of potential favourable nesting habitat for the species estimate the maximum island capacity for nests, with reference to maximum densities observed for wandering albatross colonies Scientific publications <p>This is carried out within the framework of IPEV research programmes no. 109 (directed by H Weimerskirch) and no. 136 (directed by M Lebouvier).</p>
Localities targeted	Breeding site: Plateau des tourbières, Amsterdam Island
Financial evaluation	<p>Funding needed for this action reports to IPEV via funding of its scientific programmes, and to CNRS regarding staff presence on the field.</p> <p>Fieldwork season (2-3 persons during 1.5 to 2 months)</p> <p>Analyses in laboratory (data exploitation, synthesis and redaction) : to be defined</p>
Specific funding call for NPA	No funding is asked for this action
Potential executive partners	CNRS Chizé (Marine Predators Team, directed by H Weimerskirch), CNRS Rennes Paimpont (directed by M Lebouvier), IPEV, National Nature Reserve of the French Southern lands
Potential funding	National Nature Reserve of the French Southern lands, IPEV
Indicators of progress and evaluation	<p>Description of the nesting habitat, trend analyses</p> <p>Survey of invasive vegetation</p> <p>Quantification of the carrying capacity (number of breeding pairs) of the favourable area</p> <p>Scientific reports and articles, communication of results</p>
References	Frenot & Valleix 1990 ; IPEV research programmes no. 136 and 109

Action 5.2	Terrestrial habitat:	Priority
	Environmental benefits for other species	1 2 3
Domain	Study /Protection/Communication	
Timetable	Year 5	
Context	<p>From the viewpoint of nature conservation, the Amsterdam albatross is considered as an "umbrella" species, which means that management actions to protect it will also help preserving other species of both the fauna and flora.</p> <p>This action aims to measure and report during the whole plan, examples of benefits observed on other native species (of both the fauna and flora) from actions carried out for the Amsterdam albatross. If negative impacts are observed, they should also be reported.</p>	
Description	<ul style="list-style-type: none"> Evaluate the impact of the management/conservation actions on other native species Measure environmental benefits of setting up the action plan.. 	
Localities targeted	Amsterdam Island and Indian Ocean	
Financial evaluation	Funding needed for this action reports to IPEV via funding of its scientific programmes, and to CNRS	

Comment [M45]: RICHARD PHILLIPS: I am not entirely clear what is being proposed here, but it seems to be to determine whether any (currently unspecified) management of terrestrial habitat that might take place during the course of this POA has a negative effect on other species (flora and fauna). If I have understood this correctly, then perhaps it should be made slightly clearer that the importance of wider monitoring and the resources to be allocated will depend on the type and scale of the management. Hence, this Action could potentially be of much higher priority than level 3 if they have a major project in mind (e.g. an eradication).

Comment [MLT46]: MARK TASKER: I agree with Richard – I make suggestions here based on my understanding

Comment [F47]: Le but premier est de définir les effets positifs du plan sur d'autres espèces (considérer l'albatros d'Amsterdam comme une « espèce parapluie ») et en second lieu d'éventuels effets négatifs.

Comment [F48]: Modif ACAP. Avant : connected

Specific funding call for NPA	No funding is asked for this action
Potential executive partners	CNRS Chizé (Marine Predators Team, directed by H Weimerskirch), CNRS Rennes Paimpont (directed by M Lebouvier), IPEV, Zone Atelier CNRS (INEE), National Nature Reserve of the French Southern lands, Ministry of Ecology, national operator of the plan
Potential funding	Animation of the plan / Ministry of Ecology, IPEV
Indicators of progress and evaluation	Site-specific list of native species which have been positively or negatively affected by management /conservation (and impact type) List of environmental benefits observed in the terrestrial/marine habitats
References	

2.2.6. *Habitat restoration and invasive species*

Action 6.1	Habitat restoration: Evaluation of the interactions between introduced predator species and Amsterdam albatrosses	Priority 1 2 3
Domain	Study /Protection/Communication	
Timetable	Annual	
Context	Elsewhere on the planet, introduced predators explain a large part of the extinction of endem insular species and therefore are a major component in the loss of biodiversity among vertebrate Numerous studies have shown the impact of introduced predator mammals on indigenous seabird species in insular environments similar to Amsterdam Island. Nevertheless, no predation event by an introduced species has ever been reported for the Amsterdam albatross.	
Description	<ul style="list-style-type: none"> • Evaluate and quantify interactions between Amsterdam albatrosses and introduced mammal species: <ul style="list-style-type: none"> - directly, via automatic and continuous observations on the colony with infra-red cameras (years 1 & 2), - via the study of the introduced mammals' diet. • Scientific publications <p>This is to be carried out within the framework of IPEV research programmes on Amsterdam Island (no. 109 directed by H Weimerskirch).</p>	
Localities targeted	Breeding site: plateau des tourbières, Amsterdam Island	
Financial evaluation	Funding needed for this action reports to IPEV via funding of its scientific programmes, and to CNRS (notably via "Zone Atelier Antarctique") + specific funding Video-monitoring of the nests: 1000€ per nest (12 nests) Data analysis engineer PNA during years 2 & 3 : 2*1 month (3000€/month)	
Specific funding call for NPA	Funding asked: 16,000€ for the whole plan	
Potential executive partners	CNRS Chizé (Marine Predators Team, directed by H Weimerskirch), IPEV, National Nature Reserve of the French Southern lands	
Potential funding	National Nature Reserve of the French Southern lands / Actions Plan for Biodiversity /Plan National Actions/ IPEV	
Indicators of progress and evaluation	Quantification of the interactions between Amsterdam albatrosses and introduced predators	

Comment [M49]: RICHARD PHILLIPS: While I agree that the objective itself is very important, I am not convinced that purchasing video-monitoring equipment at this cost and spending 4,000€ on analysis is necessarily the best use of 16,000 €; the population has shown routinely high breeding success except in one or two previous years; there is no convincing evidence of a previous predation event; if the intention is any case for fieldworkers to visit nests regularly, they should be able to detect (or suspect) predation if chicks die/disappear and there is no other obvious cause, and; there are fixed cameras available (e.g. Bushnell Trophy) that cost <200 € each, which can be programmed to record video, triggered by movement, and the fieldworkers could download these regularly and inspect the video at the base. Hence, even if video monitoring is considered essential, it may be possible to achieve this at much lower cost, which would allow resources to be spent on other priorities.

References	IPEV Research Programme no. 109, ACAP guidelines for eradication of introduced mammals from breeding sites of ACAP-listed seabirds
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Action 6.2	Habitat restoration: Eradication of introduced predator species on Amsterdam Island	Priority 1 2 3
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Comment [M50]: RICHARD PHILLIPS: The justification and timetable for an eradication is considered here to be conditional on detection of an impact of predation on Amsterdam Albatross at the population level, which I suppose is reasonable in the context of this POA. However, if this were a management plan for the flora and fauna of the island as a whole rather than a single species, then the production of a feasibility plan would presumably be a top priority irrespective of the impact of introduced predators on this particular species.

Domain	Study /Protection/Communication
Timetable	Actions conditioned by actions 6.1 & 1.3
Context	Elsewhere on the planet, introduced predators explain a large part of the extinction of endem insular species and therefore are a major component in the loss of biodiversity among vertebrate Numerous studies have shown the impact of introduced predator mammals on indigenous seabi species in insular environments similar to Amsterdam Island. This action is conditioned by results of actions 6.1 & 1.3.
Description	Depending on results of actions 6.1 & 1.3 on introduced predators on Amsterdam Island: <ul style="list-style-type: none"> • Maintain low levels of populations of introduced species interacting with the Amsterdam albatross (on a part and/or on the whole island), by controlling them on the breeding site <p><u>Or</u></p> <ul style="list-style-type: none"> • Eradicate all (or part of) introduced species interacting with the Amsterdam albatross • Population survey of the introduced species after management actions <p>This is to be carried out within the framework of IPEV research programmes on Amsterdam Island (no. 109 directed by H Weimerskirch).</p>
Localities targeted	Breeding site: plateau des tourbières, Amsterdam Island
Financial evaluation	CNRS Costs of management and/or eradication of the populations of introduced species to evaluate
Specific funding call for NPA	To be determined
Potential executive partners	CNRS Chizé (Marine Predators Team, directed by H Weimerskirch), coll. D Pontier, T. Micol, IPEV, National Nature Reserve of the French Southern lands /TAAF Other partners to identify
Potential funding	To be defined / Actions Plan for Biodiversity /Plan National Actions
Indicators of progress and evaluation	Maintain low levels <u>or</u> eradicate all or part of the populations of introduced mammal species for which interactions have been previously evaluated Survey populations of introduced species
References	IPEV Research Programme no. 109, ACAP guidelines for eradication of introduced mammals from breeding sites of ACAP-listed seabirds

2.2.7. *Communication*

Action 7.1	Communication : Communication of the national plan of actions for the Amsterdam albatross in France	Priority 1 2 3
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Domain	Communication
Timetable	Annual
Context	To be fully effective, the plan must not only be known but also understood and implemented by all staff sent inside the Nature Reserve, by the partners and by all relevant decision making institutions. The goal of this action is to broadcast, at national and mostly international levels, information about this plan and its stage of progress.
Description	<p>Goals of this action are:</p> <ul style="list-style-type: none"> • Launch the plan in a public event, with a public scientific conferences • Broadcast information about the existence of this plan, towards staff that may be sent to work in the Nature Reserve, particularly Amsterdam, towards decisional institutions and international community (e.g. Birdlife International, ACAP, RFMOs) and towards those involved in the fisheries (managers and fishermen), <ol style="list-style-type: none"> 1. Speech for staff/tourists that land on the island 2. Writing and publication of a shorter document directed at professional working in the fisheries 3. Preparation of a document to present the plan • Make the plan and its current status widely accessible. Though it is a national plan, it will be a priority to edit English and Spanish versions of the plan, accessible on the Internet. A shorter version may also be broadcasted. • Conference for restitution
Localities targeted	<p>French Southern Lands and every maritime stopover on Amsterdam Island</p> <p>All the regions: national territory and international community (scientists, RFMOs, governments of nations neighbouring the species' distribution area ...etc)</p>
Financial evaluation	Conference, public events...
Specific funding call for NPA	25,000€ for the whole plan
Potential executive partners	LPO, National Nature Reserve of the French Southern lands, national operator of the plan, Ministry of Ecology, CNRS Chizé
Potential funding	Animation of the plan / Ministry of Ecology / National Plan of Actions/
Indicators of progress and evaluation	<p>Attendance at the public event for launching of the plan</p> <p>Editions of the plan available to the international community</p> <p>Number and quality of the addressees for these versions</p> <p>Number and quality of the addressees for the presentation documents, formations or animations</p>
References	

Comment [M51]: WARREN PAPWORTH: Dissemination?

Action 7.2	Communication :	Priority		
	Coordination and implementation of the actions	1	2	3

Domain	Protection/Communication
Timetable	Annual
Context	Success of the plan will depend on the actions carried out but also on the coherence and dynamism of the partnership network.

Description	<ul style="list-style-type: none"> • Survey the setting up of the plan of action and edit annual reports of outcomes from the information submitted from the different partners • Support partners of the plan with implementation of the actions • Review administrative procedures and proposals that modify or add unilateral actions towards the government services, ministries for Ecology, for potential validation by European Commission, if gaps are found. • Survey the indicators of progress, publication of the logbook (auto-evaluation of the plan)
Localities targeted	Amsterdam Island and Indian Ocean
Financial evaluation	To be defined
Specific funding call for NPA	To be defined
Potential executive partners	Operator of the plan, LPO, CNRS Chizé (Marine Predators Team, directed by H Weimerskirch), IPEV, National Nature Reserve of the French Southern lands, Ministry for Ecology
Potential funding	Publication of the plan / Ministry for Ecology / Actions Plan for Biodiversity / National Plan of Actions/
Indicators of progress and evaluation	Develop questionnaire mid-way though and at end of the plan, for the different partners and operators Annual Activity Report Peer review by international organisations (e.g. ACAP) and by the scientific community
References	