



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

**Second Meeting of Advisory Committee**

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**ACAP Indicators**

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## ACAP Indicators

Submitted by: BirdLife International/New Zealand/South Africa

### Executive Summary

The objective of this paper is to progress the development of a set of indicators to measure the collective success of the Parties to the Agreement in achieving and maintaining a favourable conservation status for albatrosses and petrels.

The paper sets out the requirements in the Agreement relating to the development of indicators, and the progress that was made by Parties at AC1 towards this goal.

The desired characteristics of ACAP indicators are discussed, including the development of a set of guiding principles for individual indicators and for the set of indicators as a whole.

In addition to the use of the BirdLife Red List Index as a headline indicator to measure favourable conservation status, the merits of the development of a population-trend based indicator are discussed.

Finally, the paper sets out proposals for the development of indicators of pressure and response, to provide a more dynamic mechanism for measuring the success of parties in addressing threatening processes that are affecting the conservation status of albatrosses and petrels.

### Parties are requested to:

- a) **note** the proposed approach to developing indicators set out in this paper
- b) **note** the proposed indicators set out in this paper
- c) **establish** a mechanism to advance the development of indicators and the best means of collecting, analysing and presenting information to support the recommended indicators
- d) **agree** timeframes for these actions and put in place an ongoing review process

## **Requirements under ACAP**

Article IX 6(f) of the ACAP Agreement requires the Advisory Committee to develop a system of indicators to measure the collective success of the Parties to the Agreement in achieving and maintaining a favourable conservation status for albatrosses and petrels listed in Annex 1 of the Agreement<sup>1</sup>.

Under the Agreement, a species is said to be in favourable conservation status when the following conditions are met:

- i. population dynamics indicate that the migratory species is maintaining itself on a long-term basis
- ii. the range of the migratory species is neither currently being reduced, nor is likely to be reduced, on a long term basis
- iii. there is, and will be in the foreseeable future, sufficient habitat to maintain the population of the migratory species on a long-term basis; and
- iv. the distribution and abundance of the migratory species approach historic coverage and levels to the extent that potentially suitable ecosystems exist and to the extent consistent with wise wildlife management

## **Background from Advisory Committee I**

At the first Advisory Committee meeting the Interim Secretariat/New Zealand, South Africa and BirdLife International tabled papers relating to the development of indicators to measure the success of ACAP.

The Interim Secretariat/New Zealand paper (AC1/Doc.17) noted that the development of indicators relating to all four components of favourable conservation status might be an ambitious and complex exercise that may be considered a medium to long-term goal. However, the Committee recognised the critical importance of an indicator based on population trends (state indicator) and the BirdLife International Red List Index (RLI) was identified as an appropriate headline indicator to monitor the success of ACAP in achieving its objectives (see AC1/Inf. 20). (for further details of the methodology see Butchart *et al.* 2004, 2005).

AC1/Inf. 20 highlighted the importance of capturing not just population trend data for ACAP species, i.e. state indicators, but argued that to successfully monitor progress of Parties in meeting the various components of 'favourable conservation status' it is necessary to develop both pressure (threatening processes) and response (conservation action) indicators that will by default be a measure of steps taken by Parties to implement the Agreement. BirdLife also noted that the reference to 'wise wildlife management' in Article I (n) (iv) implied that it is appropriate to assess steps taken to improve species conservation status, not just improved status *per se*.

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Without such indicators, Parties to the Agreement run the risk of decoupling the impact of threatening processes and actions taken to address these and taking credit for improvements in conservation status that may be unrelated to the work of the Parties. Conversely, the Committee recognised that due to the significant time lag associated with measuring changes in population trends (as a result of actions taken by Parties), without a broader set of indicators, ACAP may not get credit for advances made, or may not receive feedback that the actions taken are effective, simply because of the time lag associated with achieving measurable impact.

### ***Desired characteristics of ACAP indicators***

The most effective indicators are often uncomplicated and straightforward. One way of developing such indicators is to consider three primary characteristics of effective indicators: Purpose – what does the indicator aim to indicate

Fit for purpose - for example, do sampling designs and statistical models correspond to the purpose

Practicality – can the indicator be constructed and updated easily (Gregory *et al.* 2003).

When developed, ACAP indicators will serve several functions. They will act as an internal mechanism for assessing the success of the Parties in implementing their ACAP obligations, including the Action Plan, they will provide a ‘road map’ to Parties on how to reach milestones and targets, and they will also be used as an external communications tool for publicising the achievements of ACAP.

It is recommended that to develop a more comprehensive suite of indicators to measure the success of ACAP, criteria are agreed that will lead to the development of a holistic set of indicators. These indicators should capture both the collective success of ACAP Parties in achieving a favourable conservation status for albatrosses and petrels and also those that will monitor the implementation of measures adopted by Parties that can reasonably be assumed to have beneficial outcomes for populations.

### **Individual indicators should:**

- be meaningful and understandable to managers and decision makers (e.g. birds killed per 1000 hooks)
- be scientifically sound and/or have a clear methodological logic
- in order to reduce costs, be based on existing monitoring and data collection processes, where feasible
- be applicable at a national and international level (i.e. their suitability should not be limited to individual Parties)
- be sensitive enough to detect changes in timeframes and on scales that are relevant to decision making processes
- be capable of disaggregation (to species groups, species and sites) to understand underlying ecological processes and explore connections between indicators and potential drivers.

## **The set of indicators should:**

- establish a framework and be representative of the objectives of ACAP
- be the minimum number required to efficiently and effectively measure ACAP objectives
- be amenable to being aggregated at a range of scales, making it possible to assess the effectiveness of ACAP in meeting its stated objectives at a national, regional and international scale.

Given that the work of the ACAP Populations and Trends and Breeding Site Working Groups has only just started, it is not yet possible to recommend a complete set of indicators. For example, until ACAP has an accepted working definition of what constitutes a breeding 'site' and an accompanying populated database, it is difficult to develop indicators for assessing pressure and response at the breeding site scale. Similarly, the findings of the Population and Trends WG will inform the decision making process regarding the development of a population trend-based indicator.

The remainder of the paper deals with potential indicators that address biological threats to species covered in Annex I of the Agreement. Suggested potential indicators do *not* address issues related to training, awareness raising and information exchange as covered in Article III (General Conservation Measures) or Capacity Building (Article IV) and Cooperation Between Parties (Article V). However, Parties may wish to discuss at the Advisory Committee whether indicators relating to these issues could be built into the on-going process of identifying an appropriate suite of indicators in the future.

## ***Types of Indicators for consideration***

### ***Proposed State Indicators***

Since ACAP identified the RLI as an appropriate headline indicator, it has gained further levels of support internationally, with the Convention on Biological Diversity (CBD) proposing a number of indicators (including 'Trends in the status of threatened species') for monitoring biodiversity loss for the 2010 target and the Subsidiary Body on Scientific, Technical and Technological Advice to CBD (SBSTTA) have recommended moving it into the top list of indicators 'for immediate testing'. In addition, RLIs based on appropriate subsets of species are currently being considered for adoption by the Ramsar Convention, CMS and CITES. They have also been recommended for European threatened species by the Streamlining European Biodiversity Indicators-2010 initiative coordinated by the European Environment Agency, the European Centre for Nature Conservation, and the United Nations Environment Programme-World Conservation Monitoring Centre.

In addition to the RLI, because many of the species covered under ACAP have population monitoring processes in place and several sites have significant time series of data, (e.g. Bird Island, South Georgia; Crozets) the development of a population trend-based indicator along

the lines of the Pan-European Common Bird Indicator (Gregory *et al.* 2005) would be appropriate.

Software (e.g. TRIM) designed for combining time series that contain gaps (e.g. interpolation, extrapolation and imputation) can be used to analyse data from multiple species with irregular census periods. These counts can then be converted into indices, applying the relevant weighting for national population size where necessary. The indices for each species could then be combined into multi-species indicators with each species having equal weight. Alternatively, species could be weighted according to threat category (e.g. Underhill and Crawford 2005). Rather than using arithmetic means, geometric means would be used because an index change from 100 to 200 is equivalent but opposite to a decrease from 100 to 50. Such an indicator would show much finer temporal resolution and potentially could be updated annually.

A set of proposed components required for State Indicators is contained in Table 1.

### ***Proposed indicators of pressure and response***

Indicators of pressure and response measure the threatening processes that are affecting the conservation status of albatrosses and petrels, and the responses of Parties to reduce those threats. Article III (1) of the Agreement gives some guidance as to what threatening processes need to be addressed by setting out the measures that Parties are obliged to take to achieve favourable conservation status for albatrosses and petrels.

Five of these measures are directly applicable to the development of indicators of response:

- conserve and, where feasible and appropriate, restore those habitats which are of importance to albatrosses and petrels
- eliminate or control non-native species detrimental to albatrosses and petrels
- develop and implement measures to prevent, remove, minimise or mitigate the adverse effects of activities that may influence the conservation status of albatrosses and petrels
- subject to exemptions, prohibit the deliberate taking of, or harmful interference with, albatrosses and petrels, their eggs, or their breeding sites
- support the implementation of the actions elaborated in the FAO International Plan of Action for Reducing Incidental Catch of Seabirds in Longline Fisheries

A set of proposed indicators of pressure and response for consideration is contained in Table 1

### **Summary of proposed Suite of Indicators**

It is suggested that to capture the variables that determine favourable conservation status and the guidelines contained in Article III (1) indicators of threat and response fall into the following five categories:

- Population dynamics (the characteristics of which underpin all categories of indicators)
- Threats from habitat loss or disturbance
- Threats from non-native species
- Threats from human activities (other than fishing)
- Threats from fishing

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- d) **agree** timeframes for these actions and put in place an ongoing review process



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Table 1 Proposed state, pressure and response indicators

<b>Indicators</b>	<b><sup>2</sup>Source of information</b>
<i>Population dynamics</i>	
<i>Components of State Indicators (underpinning Pressure and Response Indicators)</i>	
<b>Population size and trend</b>	ACAP Parties
<i>Trends in breeding success</i>	ACAP Parties
Trends in adult survival	ACAP Parties
Trends in juvenile recruitment	ACAP Parties
<b>Threats from habitat loss or disturbance</b>	
<i>Pressure indicators</i>	
Proportion of sites (and population) with reduced and/or degraded <sup>3</sup> breeding habitat	ACAP Parties
Impact of habitat loss/degradation (decrease in nesting sites, decreased breeding success, reduced recruitment into the breeding population)	ACAP Parties
<i>Response indicators</i>	
Proportion of sites (and population) assessed for habitat loss/degradation (adverse conservation status)	ACAP Parties
Proportion of sites (and population) of adverse conservation status	ACAP Parties
Proportion of sites with restoration projects undertaken (and completed)	ACAP breeding sites database. ACAP capacity building fund
<b>Threats from non-native species</b>	
<i>Pressure indicators</i>	
Proportion of sites (and population) with non-native vertebrate species present	ACAP breeding sites database
Proportion of population on sites with non-native plant species that reduce habitat suitability	ACAP breeding sites database
Proportion of sites (and population) with pathogens/disease that impact species	
Reduced breeding success and mortality rates associated with the above three threats	ACAP breeding sites database
<i>Response indicators</i>	
Proportion of sites (and population) assessed for presence of non-native species	ACAP breeding sites database

<sup>2</sup> In many cases, 'Parties' may by default include the uses of the Breeding site database. Sources of information require clarification.

<sup>3</sup> 'Degraded' will require a definition.

Proportion of sites where co-occurring vectors of pathogens removed	ACAP breeding sites database
Proportion of population on sites with control/eradication programmes undertaken (successfully completed)	ACAP breeding sites database. ACAP capacity building fund

<b><i>Threats from human activities (other than fishing)</i></b>	
<i>Pressure indicators</i>	
Proportion of sites (and population) open to tourism	ACAP Parties
Proportion of sites (and population) with and increasing volume (trend) of visitation	ACAP Parties
Proportion of sites (and population) exposed to harmful debris/contaminants	ACAP Parties
Presence of Hydrocarbon exploration within the EEZ of Parties with breeding birds-level of debris AND contaminants in colonies	ACAP Parties
<i>Response indicators</i>	
Proportion of sites (and population) with measures in place to manage visitation impact	ACAP Parties
Proportion of sites (and population) with measures to control harmful debris/contaminants	ACAP Parties
Parties with measures in place to mitigate hydrocarbon spills	ACAP Parties
<i>Threats from fishing</i>	
<i>Pressure indicators</i>	
Number of fisheries within national jurisdictions with reported bycatch figures (levels/rates)	ACAP Domestic (and RFMO?) bycatch database
Composite total estimated annual bycatch by fleet (by species, and adult and juvenile, where possible)	ACAP Parties
High seas fisheries that overlap with the foraging/migratory range of ACAP species with reported bycatch figures	ACAP Parties via BirdLife tracking database
Degree of spatial overlap of breeding (and where available, non-breeding) birds with fishing effort in fisheries (including RFMOs)	ACAP Parties via BirdLife tracking database
<i>Response indicators</i>	
Percentage of independent and non-independent coverage of observers by fleet	ACAP Domestic (and RFMO?) bycatch database
Percentage of independent and non-independent coverage of observers by fleet tasked to record seabird bycatch self observers	ACAP Parties
ACAP Parties/Secretariat present at RFMO meetings	ACAP Parties/Secretariat
Proportion of vessels (by fleet) by ACAP Parties that adopt mitigation measures operating within their national jurisdictions	ACAP Parties
Proportion of vessels (by fleet) of ACAP Parties that adopt mitigation measures while operating on the 'high seas', including within areas covered, and not covered by, RFMOs	ACAP Parties
Proportion of vessels (by fleet) by RFMOs that adopt mitigation measures (as influenced by ACAP)	ACAP Parties and Secretariat