Seabird Data for Describing Marine Conservation Areas

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In 2008, the Convention on Biological Diversity (CBD) 9th Conference of the Parties approved a set of criteria for identifying Ecologically or Biologically Significant Areas (EBSAs), a crucial step in protecting marine habitats and biodiversity. A series of regional workshops began in 2011 to describe areas that meet these EBSA criteria.

Seabird data are especially useful in such conservation planning exercises. BirdLife International has been compiling and analysing seabird data to identify Important Bird Areas (IBAs), a process explained in BirdLife's *Marine IBA Toolkit*. This has allowed lists of IBAs to be provided to EBSA regional workshops, and these have proved to be a vital contribution to describing EBSAs.

The IBA process is effective for the following reasons:

- **Birds are indicators of diversity and productivity:** The presence of diverse and abundant seabirds is a strong indicator of the presence of other taxa, such as the seabirds' prey and other top predators that compete for them. In addition, birds tend to congregate in highly productive areas and habitats, such as around islands, seamounts, and upwellings (Lascelles et al., 2012). Diversity and productivity are among CBD's seven criteria for describing EBSAs.
- **Migration indicates connectivity:** Many seabirds are highly migratory and therefore will benefit from EBSAs that encompass a sequence of healthy ecosystems along migration routes. Seabird tracking data can be used to assess connectivity between sites.
- **Seabirds are widely represented across ecosystems:** The global distribution of seabirds makes them very useful for identifying networks of areas that cover a variety of marine ecosystems, as the EBSA guidelines call for.
- **The IBA process uses a rigorous approach:** The process is an exacting, data-driven, globally applicable framework that could be adapted for many other taxa in addition to birds.
- **Data are widely available:** Seabirds are readily observed, identified, and surveyed. As a result, bird data are often the most abundant or even the only data that are available for some open-ocean ecosystems.
- **The process focuses on threatened species:** The EBSA and IBA criteria both identify priority areas for the conservation of unique, rare, and vulnerable species.

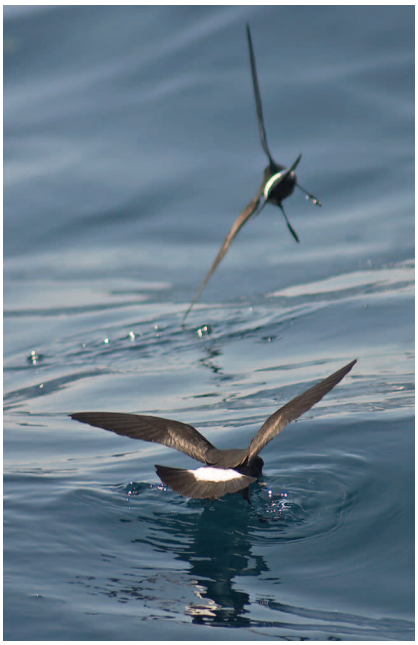
RESEARCH SUMMARY

April 2012

BirdLife International's *Marine Important Bird Areas toolkit* is a summary of the experiences from 40 countries in the BirdLife Partnership.

Study citation: BirdLife International (2010). *Marine Important Bird Areas toolkit: standardised techniques for identifying priority sites for the conservation of seabirds at sea.* BirdLife International, Cambridge UK. Version 1.2: February 2011. www.birdlife.org/eu/pdfs/Marinetoolkitnew.pdf

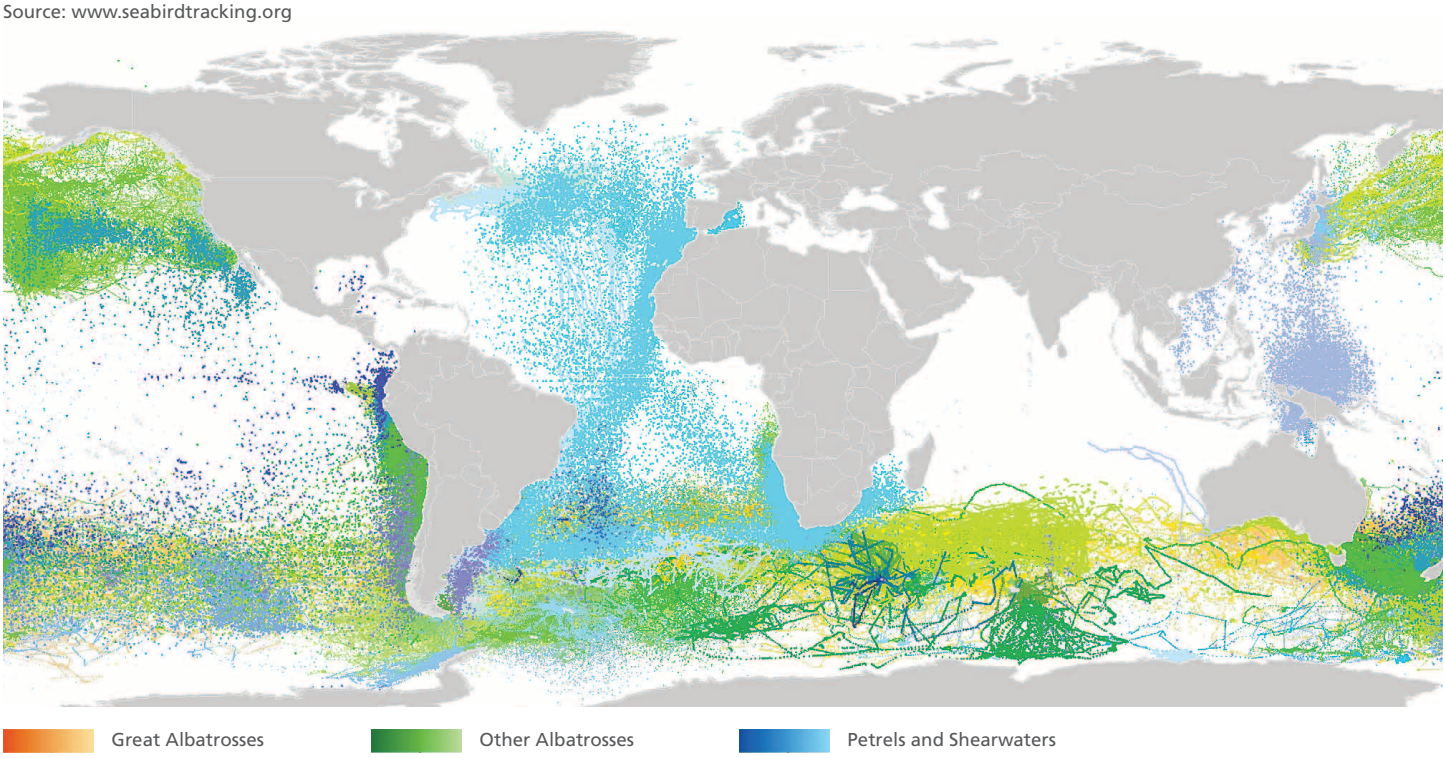
www.BirdLife.org



Migratory species include: Razorbill *(Alca torda)* (left) which is general found in coastal waters, and European Storm-petrel *(Hydrobates pelagicus)* (right) a highly pelagic species. Photos: B. Lascelles

Figure 1. Map of tracking data held in the BirdLife International Global Procellariiform Tracking Database

The database is the largest collection of seabird tracking data in existence. Data on over 40 species has been contributed by more than 70 scientists and institutes. Data points or tracks (lines) are shown for each species in a different shade corresponding to the three main groups of seabirds (see key below). Source: www.seabirdtracking.org



Steps in the Marine IBA Process

The marine IBA toolkit follows six steps for defining a set of consistent and comparable sites that meet the IBA criteria. These sites can be used to describe areas meeting the EBSA criteria.

Step 1: Identify Priority Species

Species may be considered for priority status on the basis of the following:

→ Threatened species, such as those on the International Union for the Conservation of Nature's (IUCN) Red List, available at www.birdlife.org/datazone/species

→ Species listed as priorities in conservation agreements (e.g., EU Birds Directive, Agreement on the Conservation of Albatrosses and Petrels, Convention on Migratory Species), available at www.birdlife.org/datazone/sowb/casestudy/244

Step 2: Gather Data

Data gathering is usually focused on a combination of four major sources:

1. At-sea surveys such as those freely available through:

→ Ocean Biogeographic Information System (OBIS): www.iobis.org

→ Royal Navy Birdwatching Society: www.rnbws.org.uk

→ Australian Antarctic Division: http://data.aad.gov.au/

→ North Pacific Pelagic Seabird Database (NPPSD): http://alaska.usgs.gov/science/biology/nppsd/index.php

2. Satellite tracking such as that held in:

→ Tagging of Pacific Predators (TOPP): http://topp.org

→ BirdLife managed Global Procellariiform Tracking Database: www.seabirdtracking.org

3. Land-based counts of breeding populations or migratory seabirds.

4. Literature reviews and expert opinion.

Step 3: Determine primary and supplementary data layers

The process should identify the highest-quality data possible as the primary support for candidate IBAs, with other data as a supplement. Sources of primary data include large tracking datasets, systematic at-sea survey data, and land-based counts collected over multiple years. Supplementary data sources include small tracking datasets, bycatch data, at-sea distribution data from fishing boats or ad-hoc surveys, and habitat suitability models.

Step 4: Identify candidate IBAs

Candidate IBAs are identified using multiple data layers. The strongest case for an IBA can be made when two primary data layers overlap to indicate a specific area, and the next strongest is when one primary layer and one supplementary layer overlap. A case can sometimes be made for an IBA based only on a single, high-quality primary layer, such as a large satellite tracking dataset.

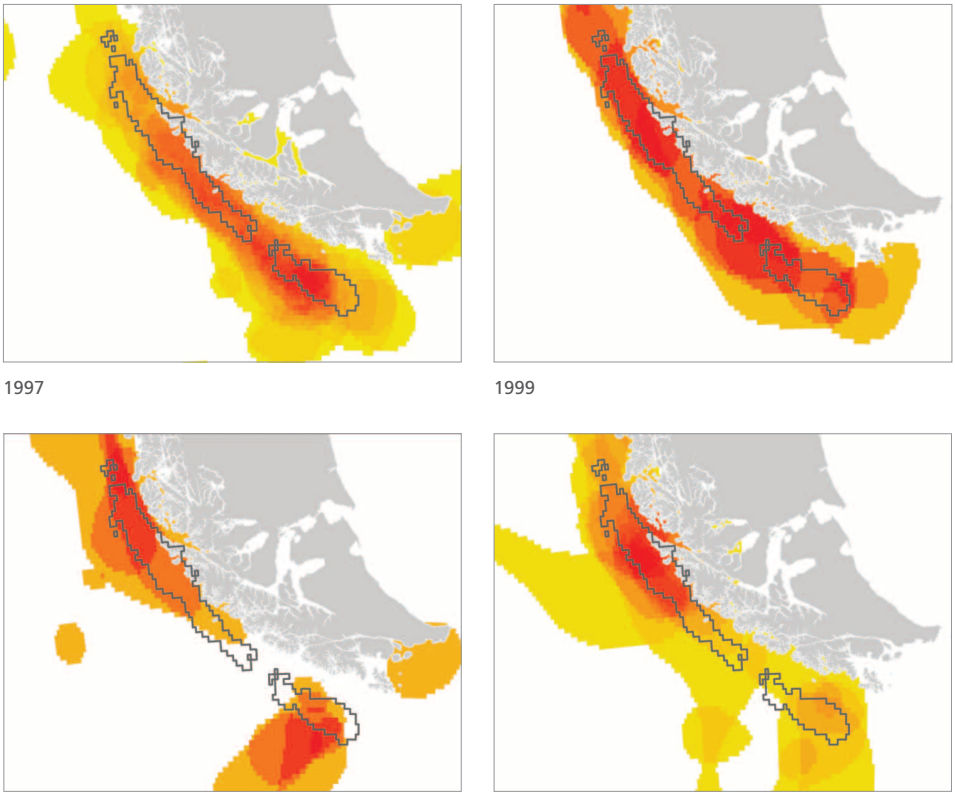


Figure 2: Satellite tracking data for Black-browed Albatross *(Thalassarche melanophrys)* from Diego Ramirez Island, Chile during the incubation periods in 1997, 1999, 2000, and 2001
These data were used to determine regularity of use in different areas. This resulted in the proposed IBA shown by the grey outline, which is awaiting final approval. Data Courtesy of www.seabirdtracking.org and G. Robertson (Australian Antarctic Division), J. Arata (Instituto Antártico Chileno), and K. Lawton (Australian Antarctic Division).

Step 5: Apply IBA criteria to candidate sites

To qualify as an IBA, a candidate site must be known or thought to regularly hold a threshold number of birds. Thresholds are set using criteria from IUCN and the Ramsar Convention, among other sources. For seabirds, a site may qualify as an IBA if it regularly holds:

- a significant number of a species categorized by the IUCN Red List as critically endangered, endangered, or vulnerable.
- at least one percent of a biogeographic population of a congregatory waterbird species.
- at least one percent of the global population of a congregatory seabird.
- at least 20,000 waterbirds or 10,000 pairs of seabirds of one or more species.
- significant numbers of a migratory species at bottleneck sites.

Step 6: Define boundaries

Extensive experience from defining IBAs in the terrestrial environment suggests that an IBA should be:

- different in character, habitat, or ornithological importance from surrounding areas;
- a Protected Area, with or without buffer zones, or an area that can be managed in some way for conservation; and
- an area which provides the requirements of the trigger species (i.e., those for which the site qualifies) while present, alone or in combination with networks of other sites.

Figure 2 shows an example of satellite tracking data that were used to propose a marine IBA off the southern coast of Chile.

Wandering Albatross *(Diomedea exulans)* fitted with a satellite tracking device. Data collected from devices like these are accessible on seabirdtracking.org
Photo: Jonathan Ashburner

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BirdLife International (2010). *Marine Important Bird Areas toolkit: standardised techniques for identifying priority sites for the conservation of seabirds at sea.* BirdLife International, Cambridge UK. Version 1.2: February 2011. www.birdlife.org/eu/pdfs/Marinetoolkitnew.pdf

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LENFEST OCEAN PROGRAM

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