

HOW can we find birds at sea?

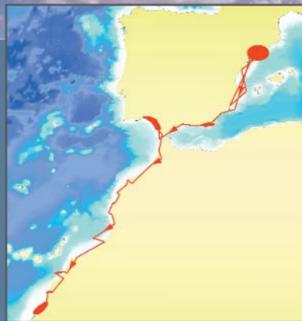
Although the study of birds at sea is complex, several recent technological developments have helped us to form an increasingly accurate picture of the distribution and habitat needs of birds in the marine environment. The LIFE projects in Spain and Portugal both rely on two basic types of information to identify marine IBAs: seabird distribution data and marine habitat characterization.

In order to obtain this information the most direct method is to conduct bird counts carried out from ships (preferably oceanographic research vessels) or, in some cases, from the air. In addition, different devices can be attached to the birds, so that their movements, behaviour and relationship with their marine habitat can be studied. This is the case with transmitters (either radio or satellite), or data-loggers that give information on location, diving depth, activity rhythms, ambient temperature, etc. Satellite images are analysed to establish habitat features such as temperature or chlorophyll concentration.

The combined analysis of the seabird distribution data, together with the habitat features allows the most important areas to be identified, and highlights the variables that best explain why seabirds select these areas.

On a broader scale, information on the relationship between habitat and seabirds will allow us to identify marine IBAs even for seabird species for which we have no direct data available.

These rich seabird areas may be highly nutrient-rich habitats such as sandbanks, river deltas or fishing banks, which often boast a great diversity of invertebrates, fish, turtles, cetaceans and, of course, birds.



Attaching satellite transmitters to seabirds is one of the methods used to establish their distribution at sea. Route of an Audouin's Gull *Larus audouinii* from its breeding grounds (the Ebro Delta) to its wintering area (the Sahara Bank).



Mediterranean Shag

WHEN is an area a marine IBA?

As with terrestrial IBAs, certain objective criteria will be defined and agreed worldwide for the identification of marine IBAs. These criteria will be based mainly on numerical data, both absolute and relative, that will give an idea of the need to conserve a certain area. The importance of an IBA will depend on how endangered the species which inhabit it may be, as well as on the percentage of the global or regional population found there. Applying these numerical criteria will allow areas of importance at a global, European, etc. level to be identified.

And then... WHO will manage marine IBAs?

The role of BirdLife International is not confined to identifying marine IBAs and arguing for their effective protection (through SPA declaration in the case of the European Union). It is also important to follow this up by helping to prepare adequate management plans for later implementation by the competent authorities.

In the case of marine IBAs, management is a complex challenge as legal responsibilities at sea are difficult to define. This problem is particularly acute in the case of those zones far from the coast and beyond the territorial waters of each country, in 'international waters'. That is why cooperation between countries is fundamental. International treaties (for example the Barcelona Agreement or the OSPAR Convention) will allow the effective protection of marine areas in "no-man's-waters".

For each marine IBA that is identified, management measures will be defined which aim to tackle any specific threats and thus ensure the area's conservation and, where appropriate, restore its ornithological value.

There are many factors that threaten seabird populations. In their breeding colonies on land, these include habitat loss, predation, disturbance, etc. In the marine environment there are many more potential threats, such as: scarcity of food due to overfishing or habitat alteration, oil-spills and diffuse pollution, fisheries bycatch, the impact of new infrastructure such as harbours, wind farms or gas pipes, disturbance from human activity such as ship traffic, excessive human presence - e.g. leisure boats - in access, resting and distribution areas associated with seabird colonies.



SEO/BirdLife

LIFE PROJECT IN SPAIN

SEO/BirdLife is carrying out the LIFE project "Important Bird Areas for seabirds in Spain" that aims to prepare a detailed inventory of marine IBAs in Spain, to identify the threats faced by seabirds and to draft appropriate management plans to ensure their protection. The Spanish Ministry of Environment co-finances the project, which also enjoys the support of the Ministry of Agriculture, Fisheries and Food, the regional autonomous governments which have legal responsibilities in the marine environment, and other bodies such as the Spanish Institute of Oceanography, the University of Barcelona and the Mediterranean Institute of Advanced Research.



Balearic Shearwater



SOCIEDADE PORTUGUESA PARA O ESTUDO DAS AVES

LIFE PROJECT IN PORTUGAL

In 2004, SPEA began a 4-year LIFE project in parallel with that of SEO/BirdLife. Portugal has the largest Economic Exclusion Zone (EEZ) in the European Union. Furthermore, the islands of Madeira and The Azores are real havens for marine birds, inhabited by the largest Atlantic populations of several species, such as Cory's Shearwater, Bulwer's Petrel, Roseate Tern, Fea's and Zino's Petrels. Mainland Portugal is also of very high importance for seabirds like the Northern Gannet *Morus bassanus* or the Balearic Shearwater, which migrate or congregate in their thousands during migratory or over-wintering periods.



Cory's Shearwater



SEO/BirdLife



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Marine IBAs

a SEA of BIRDS



The Important Bird Area (IBA) Programme of BirdLife International aims to identify and conserve those places that are important for the survival of birds and their habitats.

Since the 1980s, great advances have been made in identifying terrestrial IBAs, and some 7,500 such areas have been identified around the world. Many benefit already to a greater or lesser extent from some degree of effective protection under the status of National Park, Natural Reserve, etc.

In most European countries, including Spain and Portugal, seabirds generally enjoy a reasonable degree of protection in their breeding colonies, that is, on land. These colonies are often protected through having been declared Special Protection Areas for birds (SPAs) under the EC Birds Directive (79/409/EEC) and in their having received protection at a national, local or even international level.

WHY are marine IBAs necessary?

Seabirds are the most endangered group of birds worldwide. So far, protection has focused on tackling land-based threats (habitat loss, introduced predators, disturbance, etc.), mainly because of the difficulty involved in understanding their behaviour and any associated threats in the open sea.

As a result, there is an urgent need to identify marine IBAs in order to guarantee the conservation of seabirds throughout their life cycle. This is a particularly difficult challenge in the marine environment, but it is the main objective of two LIFE projects in Spain and Portugal.

European seas host over 60 seabird species that, to varying degrees, show a poor state of conservation. Many are so specialized that they are extremely vulnerable to habitat loss or alteration. Many, like the Balearic Shearwater or Zino's Petrel, are on the verge of extinction.



WHERE can seabirds be found?

Despite the apparent uniformity of the sea's surface, different factors make the sea a varied, dynamic and complex environment. These include the influence of topography (seabed relief, extent of the continental shelf, coastal profile) and oceanography (physico-chemical features of the seawater, presence of currents).

This complexity is also reflected in the patterns of distribution and behaviour of most seabirds, which vary between different species. Some, like shearwaters and storm-petrels, spend most of their life at sea and only come ashore to breed. Others, such as cormorants, and most gulls and terns, have more coastal habits and do not normally venture beyond the continental shelf.

Three main types of IBA can be distinguished in Spain and Portugal:

1. Seaward extensions of breeding colonies.

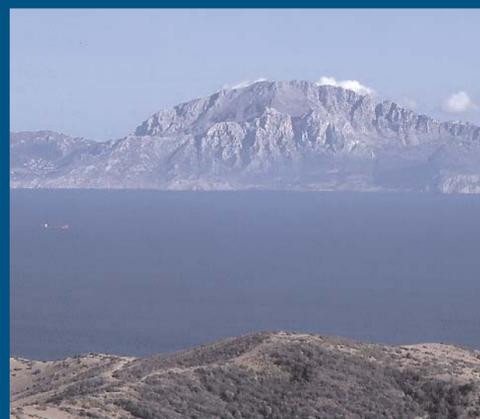
A significant number of birds associated with breeding colonies gather in the surrounding waters, either when they are in transit to or from feeding areas, or when they are using the area for feeding, resting, courtship displays, or preening. During breeding periods the more coastal species focus their activity - including feeding - in this area, while the more pelagic species feed mostly in areas far from the colony and its surroundings.

2. Coastal or pelagic seabird congregations.

Seabirds tend to concentrate in large numbers in certain areas mainly because of the abundance of food, although other factors could also be decisive (shelter, water temperature and/or salinity, etc.) These areas may be located either close to the coast, or in the open sea. Seabird density will depend upon the species and the characteristics of the area. In some cases IBAs will be identified through being used by high bird numbers on a regular basis, whilst in other cases they will be areas frequented by certain key species of high conservation importance.

3. Migration bottlenecks.

Finally, there are areas which, due to their geography, act as true bottlenecks constraining the movements of entire bird populations (or a large share of them) during migration. The Straits of Gibraltar are a clear example of this type of Marine IBA.



Potential marine IBAs



Cory's Shearwater



European Storm-Petrel



Audouin's Gull



Common Tern

Breeding seabirds of Spain and Portugal* included in Annex I of the Birds Directive

Bulwer's Petrel	<i>Bulweria bulwerii</i>
Fea's Petrel*	<i>Pterodroma feae</i>
Zino's Petrel*	<i>Pterodroma madeira</i>
Cory's Shearwater*	<i>Calonectris diomedea</i>
Balearic Shearwater	<i>Puffinus mauretanicus</i>
Little Shearwater	<i>Puffinus assimilis</i>
White-faced Storm-Petrel	<i>Pelagodroma marina</i>
European Storm-Petrel	<i>Hydrobates pelagicus</i>
Madeiran Storm-Petrel	<i>Oceanodroma castro</i>
Mediterranean Shag	<i>Phalacrocorax aristotelis desmarestii</i>
Mediterranean Gull	<i>Larus melanocephalus</i>
Slender-billed Gull	<i>Larus genei</i>
Audouin's Gull	<i>Larus audouinii</i>
Sandwich Tern	<i>Sterna sandvicensis</i>
Common Tern	<i>Sterna hirundo</i>
Roseate Tern*	<i>Sterna dougallii</i>
Little Tern	<i>Sterna albifrons</i>
Iberian Common Guillemot	<i>Uria aalge ibericus</i>

In Spain

1. Waters off the Ebro River Delta - Columbretes Islands.

Highly productive area which represents a very important foraging ground for those seabirds breeding in the Balearic Islands (shearwaters, European Storm-petrel), as well as for those species breeding in the Ebro Delta (gulls and terns).

2. Palma Bay - Cabrera Island.

Important due to the abundance of small pelagic fish, thus providing food to many seabird species breeding in the Balearic Islands (shearwaters, European Storm-Petrel, Mediterranean Shag, Audouin's Gull).

3. Straits of Gibraltar.

The passage of marine migratory seabirds between the Atlantic Ocean and the Mediterranean Sea is concentrated in this area. It is crossed by practically the entire world population of Balearic Shearwater as well as by the mediterranean subspecies of Cory's Shearwater.

4. Rías Baixas.

Very productive area where many seabirds gather to look for food. Very important as a feeding area for the Balearic Shearwater during the post-reproductive period and for the local Shag populations.

5. Concepción Bank.

An important fishing bank that also attracts significant numbers of birds which breed in the Chinijo Islands, where the most important breeding populations of the Canary Islands gather.

In Portugal

1. Azores: Praia Islet, La Graciosa Island.

The Azores are home to many seabird species. Hundreds of pairs of Roseate Tern, Common Tern, Cory's Shearwater and Madeiran Storm-Petrel nest here.

2. Berlengas Islands.

The small archipelago of Berlengas, located off the coast of Peniche (the most important fishing port in the country) is inhabited by several hundred pairs of Cory's Shearwater and dozens of Madeiran Storm-Petrels. Many other seabird species feed in these waters during migration.

3. Madeira: Desertas Islands.

Thousands of pairs of Cory's Shearwater, Little Shearwater, Madeiran Storm-Petrel, Bulwer's Petrel, as well as the rare Fea's Petrel, nest in these islands.