

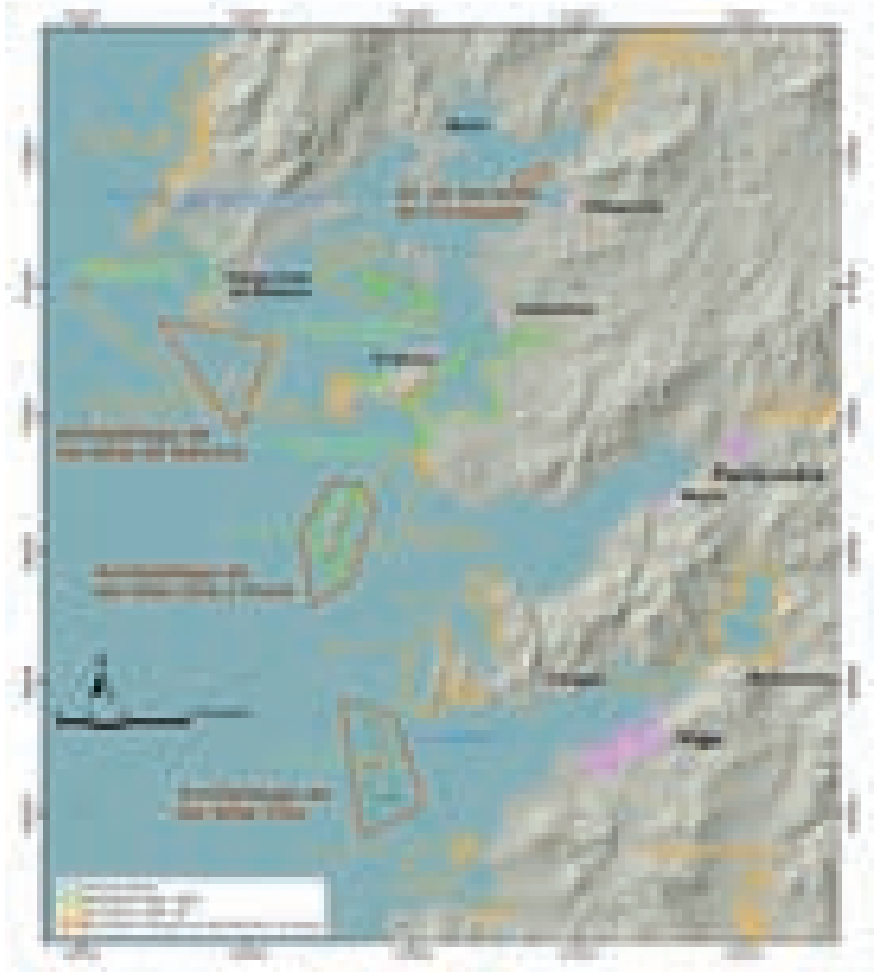
VI. Management and Strategies



Management and strategies applied to the conservation and development of the Galician Atlantic Islands National Park.

The Galician Atlantic Islands National Park constitutes an excellently conserved sample of the Atlantic coastal and marine ecosystems, the species of fauna and flora associated with them and the cultural heritage of these areas. Management of the Park includes conserving its natural assets and characteristics through managing fishing, controlling invasive species and protecting its most exceptional habitats, fauna and flora. Tourism is of great importance to the Park, contributing major resources to be used for its ongoing development. Tourism must, however, be appropriately regulated to prevent negative impacts on the Park's conservation. In addition, the Park must take actions to facilitate public use of the park and inform visitors about the environment, while making them aware of its conservation needs. Finally, there are the basic principles that govern the Park's strategy for achieving its objectives, which are focussed on advancing scientific knowledge, working with the conservation networks, establishing priorities and organising tourism and fishing in a way that is sustainable - since it should not be forgotten that this is an environment that is linked to the sea and is of extraordinary biodiversity, with a wide variety of ecosystems, the most important of which are the cliffs, the beaches, the dune systems and the seabed ecosystems.

The tall granite walls of the cliffs house colonies of sea birds, some of which are of world-wide importance due to their size, such as the yellow-legged gull (*Larus michahellis*) and the European shag (*Phalacrocorax aristotelis*). The cliffs are also home to exceptional flora, including some species that are native to the Atlantic coasts of the Iberian Peninsula. The beaches and dunes are of great importance for conservation in the Park, where they are well represented. This is especially important given the considerable loss of these habitats along the whole of Spain's Atlantic coast. They are very sensitive to human influence and also house a large number of endangered or vulnerable species, especially plant species.



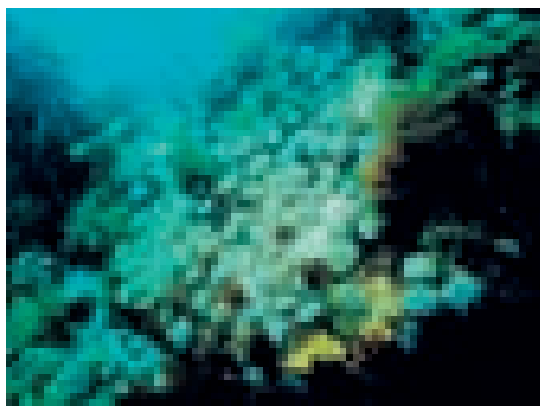
Archipelagos making up the National Park

Marine environments make up most of the surface area of the National Park - approximately 86% of its total surface area. Important marine habitats include the "forests" of large brown seaweeds of the genus *Laminaria*, which are home to a wide variety of fish and marine invertebrates, and the seabed areas where Maerl (or marl) is found. Marl is made up of calcareous algae growing loose in the form of small nodules, which provide an intricate network of shelters that can house very diverse animal species

In addition to this very valuable natural heritage, the Park has an interesting archaeological and architectural heritage. There are palaeolithic remains, Bronze Age settlements ("castros", or forts), mediaeval hermitages and sanctuaries and more modern fortifications, salting factories, drinking fountains and washhouses, mills, cemeteries, monuments and lighthouses. There are also important wrecks and other underwater archaeological remains.

Wrecks are often the result of a shipwreck, which is studied by archaeologists. But this is not the only type of site, nor even the most valuable from the point of view of historical knowledge - and knowledge is the final objective of all the National Park's activities. A wreck is a time capsule, which preserves a moment of the past, and may contain very useful information for rediscovering history and helping us to better understand the history of our protected environment.

The island customs are also an interesting legacy, made up of small-scale fishing, traditional vessels, fiestas and gastronomical specialities - in brief, a great intangible heritage to be preserved.



MANAGING THE NATIONAL PARK: PRESERVING ITS NATURAL ASSETS

The establishment of the National Park: reasons and objectives

As stated in the Master Plan for the Network of National Parks, "the National Parks are natural areas of great ecological and cultural value that have been little changed by human occupation and exploitation and which, by reason of the beauty of their landscapes, the representative nature of their ecosystems or the exceptional nature of their flora, fauna or geological formations, are ecologically, aesthetically, educationally and/or scientifically valuable and deserve special care and attention and have been declared of general interest to the nation because they represent our natural heritage and include some of the principal Spanish ecosystems ...".

The Atlantic islands of Galicia were declared a National Park in 2002, in order to protect one of the best samples of the ecosystems linked to the Atlantic Ocean. Although there are very unique and valuable land-based ecosystems in the cliffs, sand dunes and scrubland, it is the marine environment - which occupies 86 % of the Park - that is the most valuable, with seabed habitats that house a wealth of flora and fauna species. This enormous biodiversity, which also supports the traditional fishing activity, needs to be preserved since it represents the country's most valuable Atlantic coastal and marine ecosystems, and guarantees that future generations can continue to enjoy these places and benefit from sustainable fishing and shellfish harvesting.

Law 15/2002, of July 1, which established the Galician Atlantic Islands Maritime-Terrestrial National Park, was proposed by the Galician Parliament and approved by the National Parliament. It states that “the establishing of the Atlantic Islands as a National Park aims to:

- Protect the integrity of ecosystems linked to coastal areas and the continental shelf of the Eurosiberian region.
- Ensure the conservation and recovery, as appropriate, of habitats and species, while the preserving genetic diversity.
- Ensure the protection, recovery, promotion and dissemination of its environmental characteristics and value and its natural heritage, regulating visitor access, research and educational activities in a manner consistent with conservation.
- Promote and support, within the Park, the traditional activities that are compatible with protecting the natural environment.
- Contribute a representative sample of the Eurosiberian region’s coastal ecosystem to the country’s common heritage, by incorporating the National Park into national and international biodiversity conservation programs.”

Although we are gradually creating awareness that promotes knowledge of marine biodiversity and its conservation, it is still true that almost all Spain’s protected areas are on land. The Cabrera Archipelago National Park established in 1991, and the Atlantic Islands of Galicia National Park, established in 2002, contribute - with other marine protected areas - to the conservation of representative areas of the Mediterranean Sea and the Atlantic Ocean. They set a trend of promoting knowledge of the marine environment, so that the sea will no longer be “that great unknown”.



The National Park, in addition to having legal instruments for achieving its conservation objectives, has material and human resources, and coordination and cooperation between the different authorities is very important. The team of people working in the park includes the director-curator, technicians, forestry officials, guides, boat crews, security guards, maintenance personnel, information staff, firefighting personnel and administrative staff. The work is divided into different areas and subjects, all of them related to conservation.

Conservation of the natural and cultural resources

In the National Park, the conservation of its natural assets and characteristics and of the processes that sustain them is considered to be the main priority. The objectives are to maintain the marine and terrestrial ecosystems in a state as similar as possible to that which would result from natural evolution and interfere only minimally in natural processes, in addition to retaining the cultural resources found within the Park.

With this aim, there are ongoing studies of the Park's natural and cultural features, and measures are taken to minimise human impact, to conserve the areas that are the most valuable and have the rarest species, and to eradicate the non-native species that have been introduced by man, do not belong in the islands' naturally occurring ecosystems and even displace the native species. Some examples of these measures are, fencing around unique and fragile dune ecosystems, denying access to certain reserved areas, eradicating the invasive Australian blackwood, and repopulating certain areas with native oak.

In terms of combining conservation and public use, land zoning is one of the National Parks' fundamental management tools. On the basis of the permitted uses given an area's fragility, natural value and danger to the

visitor, the Park's areas are divided into the following types: reserve, restricted use, moderate use, special use and traditional settlements.

A fundamental aspect of conservation is prevention, and in this respect, any plan, project or activity that may have negative environmental effects on the Park is subjected to an environmental impact analysis.



Farms, uses, and traditional uses

The objective is to maintain the uses, both traditional and otherwise, that are compatible with the environment, and prevent the mining and drilling activities that threaten protected areas. In this context, underwater and sports fishing and hunting are prohibited, while traditional agriculture and traditional non-industrial fishing are allowed, provided that they are sustainable and do not negatively impact conservation.

Fishing and shellfish gathering, which are carried out in all the Park's archipelagos, are regulated by the autonomous regions' plans that were prepared on the basis of National Park's reports. The National Park, in collaboration with researchers and scientists, conducts studies to improve knowledge of these resources. To ensure that these activities are conducted in a sustainable manner, there are various limits, quotas, and closed seasons.

Fisheries management

The great wealth of the seabed around the Atlantic Islands has contributed to sustaining local populations through fishing and shellfish gathering. In most cases, fishing has been small-scale, traditional and non-industrial and thus more environmentally friendly than industrial fishing, since the catches are smaller and more selective. Regulating fishing within the National Park can make both conservation and sustainable use possible while at the same time bringing social and economic benefits to the entire local community, becoming a factor of social cohesion and one of the most powerful management tools.

The waters of the Park are fished by much of the non-industrial inshore Rias Bajas fleet. The following are particularly important: octopus, offshore shellfish gathering (mainly bivalves), goose barnacles and diving for shellfish - razor shells and sea urchins. There is also a large multi-species fishing fleet that uses pots and gill nets.

The fact that this activity takes place inside a protected area means that careful management is required to prevent conflicts, such as over-fishing, the impact on the seabed of certain types of nets, and the capture and drowning of seabirds or cetaceans in gillnets or encircling nets.

The National Park works with the Department of Rural Environment and the Sea, which is in charge of fishing, to

ensure that fishing and conservation are compatible. The fishery plans are prepared by the fishermen's guilds and approved by the Administration after the National Park has prepared its report to ensure that environmental criteria are included. In addition, the Park's officers collaborate on surveillance with the fisheries inspection agents, in order to ensure compliance with the regulations.

Control of invasive species

Invasive species that have been moved out of their original areas by human actions, and then proliferate in other areas at the expense of other species, are one of the major problems threatening biodiversity conservation. The islands are particularly sensitive to this problem, since their ecosystems usually contain fewer species and are more fragile; here, invasive species, free of natural enemies, multiply more easily.



Control of invasive species

The Atlantic Islands National Park is no exception to this rule. Throughout its history, the various settlers introduced plants and animals that are now causing problems. Invasive species are strong competitors that reduce the survival, growth and size of the native species. In order to preserve the National Park's native biodiversity, several measures are being taken to control and eradicate certain invasive species, as well as to control new outbreaks of those that have already been eliminated, such as the ice plant (*Carpobrotus edulis*). *Arctotheca calendula* and *Zantedeschia aethiopica* affect several areas in the park, especially where there are dunes.

The following species are being monitored:

- Cape weed (*Arctotheca calendula*), an invasive species from the Cape region in South Africa, was introduced as an ornamental species. This plant is being controlled manually by attempting to remove not only the visible part but also the underground roots.
- The Australian blackwood (*Acacia melanoxylon*), a species native to Australia and Tasmania, and the black locust or false acacia (*Robinia pseudoacacia*), which is native to the US, were introduced as ornamental woodland species. In the Cíes archipelago, they are being felled and treated (painted with glyphosate). It is necessary to maintain ongoing control work to prevent regrowth.
- The eucalyptus (*Eucalyptus* sp), from Australia, has been introduced into many parts of the world. It consumes a lot of water and its allelopathic effects mean that areas it has invaded are impoverished in terms of the local flora and fauna. In the Cíes archipelago, this species is being felled and certain very resistant cases are painted with weedkiller.
- The cala lily (*Zantedeschia aethiopica*), from South Africa, was introduced as an ornamental plant. This plant spreads rapidly and is somewhat toxic to the local fauna. Work is being carried out to remove this species from Sálvora Island.

- *Crassula multicaeva* is of South African origin and was introduced as an ornamental plant. Work is also being carried out to remove it from Sálvora Island.

The invasive fauna includes feral domestic cats (*Felis silvestris catus*), originally introduced as pets, and the American mink (*Neovison vison*), which has reached the Park by swimming after escaping from fur farms. Both species have a major impact because they are predators of seabirds (especially the European shag) and other small vertebrates. There are deer (*Cervus elaphus*) on Sálvora, which were introduced many years ago for hunting. They have a detrimental effect on dune flora, and a study has therefore been made of how they could be moved from the island to the mainland. The black rat (*Rattus rattus*), which is found throughout the Park, affects seabirds and many species of flora.

Control of invasive species is one of the Park's biggest jobs. There are plans to control several species (for example, White 2007), which define the actions to be taken. In the case of flora, they must be cut down or pulled up, and measures must then be taken to prevent regrowth and restore ground cover. In the case of fauna, there are programs for the in vivo selective capture of mink and cats, and exhaustive measures to eradicate the black rat. In addition, to prevent possible damage by these species, exclusion fences have been built to protect some seabird nesting areas. It is, in any case, a question of long-term action, with a special emphasis on monitoring to prevent areas already cleared being reoccupied.

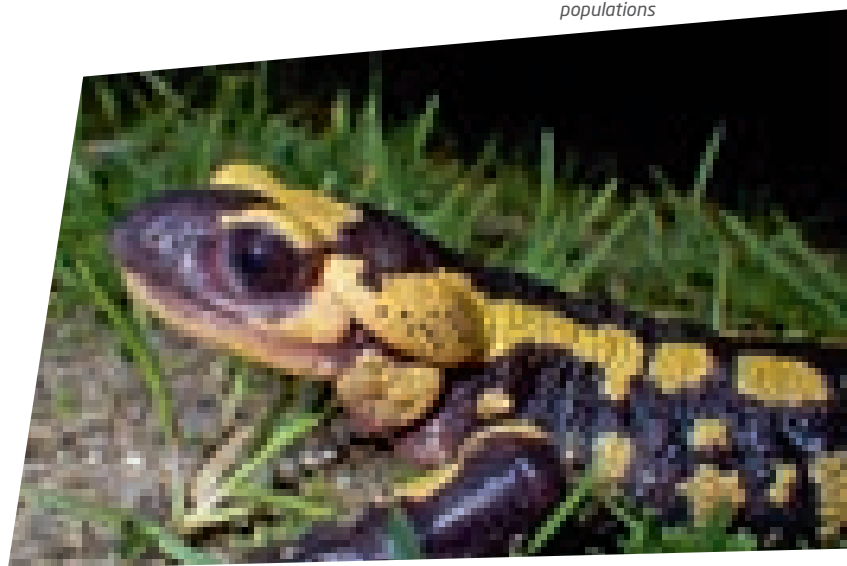
Trapping and removal of feral domestic cats

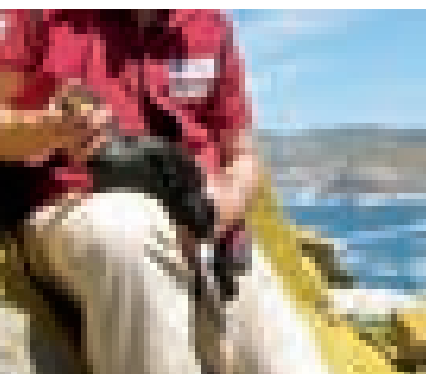


Managing the species that are important to conservation

The insular nature of the Park has led to there being several very uncommon species. This is due in part to the biogeographic isolation for around 15,000 years when there was no contact with the continent. This has led to a genetic differentiation in species such as the *Cytisus insularis* broom, the fire salamander (*Salamandra atra*) and the Ocellated lizard (*Timon lepidus otero*). The low level of human influence, due to the difficulty of access, has also meant that species that are no longer found on Spain's Atlantic coast are still present in the Park. This is the case of the Portuguese crowberry (*Corema album*), and of species in delicate conservation status, such as *Linaria arenaria*, *Erodium maritimum* and *Rumex rupestris*. The Park's island habitats have also had a positive influence on certain seabird populations. Seabirds are a vital aspect of the Park, which is home to very important colonies of yellow-legged gull and European shag, as well as other important protected species, such as the Cory's shearwater (*Calonectris diomedea*) and the European storm-petrel (*Hydrobates pelagicus*).

Monitoring of amphibian populations



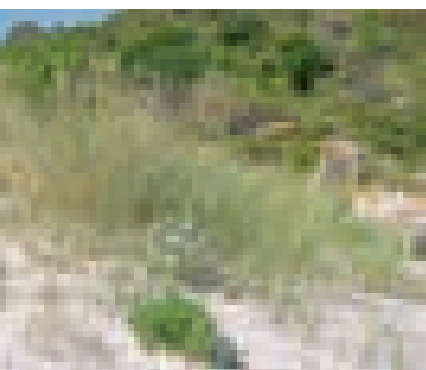


Marking European shag

For these species, the Park has developed action plans (Galán 2007, Navarro and Sanchez 2010) that includes studying and monitoring their populations and specific conservation measures, such as protection from trampling in dune areas, the management of ponds and water sources for amphibians, the control of invasive predators, and, in specific cases such as the Portuguese crowberry and the *Cytisus insularis* broom, offsite breeding.

The protection of habitats of conservation importance

Protection of dune flora



The Atlantic Islands National Park hosts several habitats that are considered of interest or priority by the Habitats Directive (IBADER 2011). In the case of the terrestrial environment, there is a full inventory that catalogues and georeferences these habitats, determining the threats they face and their conservation needs. For their protection, measures are implemented to regulate visitors' access, control the traditional activities, and strictly regulate the infrastructure and buildings. Measures are also taken to prevent and fight forest fires. In the marine environment, the inventory is currently being carried out, and the protective measures taken are primarily in the fields of fishery management and combating marine pollution.

MANAGING THE NATIONAL PARK (II): TOURISM AND PUBLIC USE

Regulating access to the Park

The landscapes in the Atlantic Islands National Park have made it one of Galicia's main tourist attractions. Since the Park was established, its popularity has steadily increased, especially outside the Galicia. This large influx of visitors provides opportunities for publicising the Park's importance, its assets and its protection needs, and contributes to the socio-economic development of the Park and its area of influence. This activity, however, must be regulated in order to make it compatible with conserving its natural and cultural heritage and to prevent overcrowding, which would spoil the visitor experience.

The main pillar on which this regulation is based is a study of the Park's visitor capacity (IBADER 2010), which establishes maximum permissible levels for each archipelago. These limits are implemented by regulating the numbers of people the ferry companies may bring (the way most visitors reach the Park) and the number of people sailing recreational craft in the Park, anchoring and coming ashore. Most of the ferry trips take place during the high season - summer and Holy Week - when there are regular services to the islands. In addition, throughout the year and with a lower quota, shipping companies also bring groups to all the islands for guided tours. This system is regulated by disembarkation authorisations issued by the Park. In the case of the Cíes archipelago, which receives most of the visits, there is also a central computerised reservation system, to which the ferry companies must connect in order to issue each ticket. This system ensures strict compliance with the quotas.

*Boating*

In the case of recreational boating, there is a regulation system that is independent of that for ferries. Any owner of a small vessel wishing to sail in the waters of the Park must obtain an authorisation from the Park authority. This authorisation must be renewed annually. To anchor and disembark, the holder of this authorisation must also obtain a permit to anchor for the date in question. These permits are obtained via the internet, and are subject to a maximum daily quota per island.

Scuba diving, which is one of the reasons for visiting the Park, is also subject to a permit-based system of regulation. It requires a special permit, which can also be obtained via the internet.

Together, these authorisation-based regulatory systems provide a flexible mechanism for managing the stream of visitors. For the visitors, procedures are simplified, while the Park is able to effectively control the numbers.

The Public in the National Park

The management of use by the public, in the sense of the activities designed to bring visitors closer to the natural and cultural assets of the Park, is one of its principal lines of action. It is made up of the actions described in the chapter “Public Use and Visiting the National Park”.

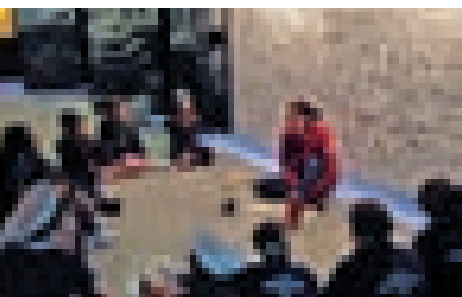
STRATEGY FOR THE CONSERVATION AND SOCIO-ECONOMIC DEVELOPMENT OF THE NATIONAL PARK

To manage the Galician Atlantic Islands National Park, in the terms proposed in this document, it is necessary to ensure that conservation is compatible with an adequate quality of life and socio-economic development for the local population and allowing visitors to enjoy the Park. This requires appropriate strategic planning, based on the following principles:

Know in order to conserve

The Master Plan for the Network of National Parks states that one of the main objectives is to provide a framework for scientific research. In the National Parks, natural processes are exceptionally well protected and they are thus true laboratories where scientific progress can be made, provided that this is carried out in a way that is compatible with conservation. This research can, in turn, contribute to protecting the Parks, since it can find new solutions to the new and every-changing challenges they present.

The Park therefore supports the research activity that takes place there, providing transport, accommodation and logistical support to researchers. Every year, the Autonomous National Parks Agency awards grants for research into areas that are relevant to Park management and conservation. In return for this support and funding, researchers make their results available to the Park, and give advice on planning specific actions and implementing them. Research projects are subject to a licensing system that ensures that they don't have a negative impact on the environment.



The Atlantic Islands National Park also runs a program that monitors a large number of environmental variables, in order to evaluate any changes to the Park's conservation status and support management decision making. The monitoring involves ongoing automatic recording by equipment in the field and field samples

taken and analysed by specialised staff. It is currently in its implementation phase, and includes: measuring oceanographic parameters using buoy-based sensors; measuring the physical and chemical parameters of the marine environment from the coast; a network of weather stations; hydrophones to monitor the cetaceans; monitoring invasive flora and fauna; ultrasound recorders for monitoring bats; counting the seabirds nesting and overwintering; monitoring threatened species of flora; counting visitors; and monitoring both fishing and shellfish gathering.

Working as part of a network

Collaboration with other institutions and protected areas is an important aspect of effective management. Working as part of a network facilitates the exchange of knowledge and creates synergies, and is thus an ongoing tool for improving the efficiency of nature conservation. The Atlantic Islands National Park is therefore part of the following networks:

- The Network of National Parks, managed by the Ministry of Agriculture, Food and the Environment, is made up of Spain's 15 National Parks.
- The OSPAR network of marine protected areas, which is governed by the Convention for the Protection of the Marine Environment of the North-East Atlantic.
- EUROPARC Network - Spain, an organisation that brings together the all institutions involved in planning and managing Spain's protected areas.

- LTER Network - Spain, which engages in long-term ecological research, and in turn is part of the LTER international network.

Establishing conservation priorities.

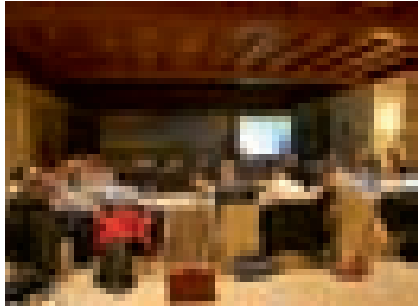
In an era of scarce resources and great challenges for nature conservation, it is necessary to optimise all available resources. The Park's planning process is therefore rigorous, to ensure maximum benefit from its activities, based on:

- Identifying the main assets: marine and terrestrial habitats in line with European regulations, marine biodiversity, seabirds colonies, fauna and flora species of importance for conservation, etc.
- Assessing threats to these assets and the associated conservation problems.
- IPrioritising actions.
- Evaluating results and redefining procedures.

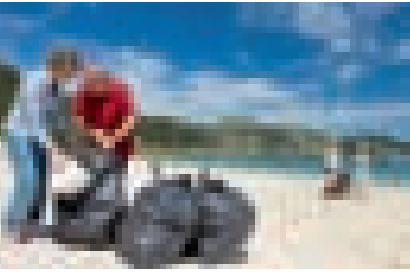
Promoting sustainable tourism.

On the basis of the above statements on tourism and the public's use of these areas, and the need to ensure compatibility with the socio-economic development of the environment, the Park aims to achieve sustainable tourism by working on the following:

- Prioritise quality over quantity, when it comes to visits, by providing good visitor information, along with the chance to enjoy the natural beauty of the Park.



OSPAR meeting. MASH (Marine Protected Areas, Species and Habitats) COMMITTEE



- Make visits less seasonal - currently most people come in the summer - by opening the Park to visitors all year round.
- Offer new activities that allow the visitor to enjoy the Park in different ways, by making its natural environments and cultural activities more accessible.
- Obtain European Charter for Sustainable Tourism certification, which is a recognition by the EUROPARC network that is based on a voluntary commitment between all the parties involved in the development of tourism to implement a local strategy for sustainable tourism.
- Enhance awareness of the need to reduce the amount of waste produced.

Reconcile traditional uses and conservation: fishing.

The Park's current objective is to regulate fishing activity in order to support conservation and improve its marine ecosystems while maintaining sustainable and non-industrial fishing within its limits. This is based on:

- Determining the type of fishing gear and number of catches that are compatible with conservation.
- Marine zoning will govern the different uses (cruising/sailing, anchoring, diving and fishing) and include fully protected areas where no entry or usage of any type would be permitted. These would act as natural nurseries and would not only assist in regenerating marine ecosystems inside the Park, but also those outside it.
- Fishing is of intrinsic social, economic and cultural value to this protected area and so must be combined with ensuring the sustainability of the natural, environmental, economic and social resources.

