



ISLANDS OF THE ATLANTIC OCEAN

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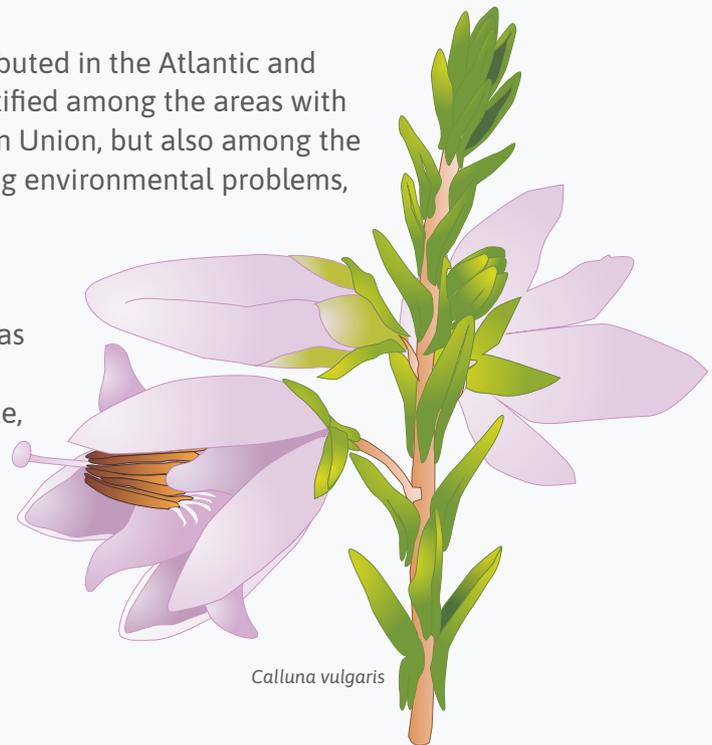
LIFE Insular

LIFE INSULAR (LIFE20 NAT/ES/001007), is a large-scale transnational project between Ireland and Spain for the conservation and management of Natura 2000 islands of the Atlantic Ocean. The project has a duration of five years and a total budget of 5.2 million euros. The main objective of the project is to implement a transnational strategy for the comprehensive restoration of 2130* habitat Fixed coastal dunes with herbaceous vegetation (grey dunes) and their contact habitat on the Atlantic Ocean islands, 4030 habitat European dry heaths, promoting their favourable conservation status, as well as increasing their resilience as the main adaptation measure against current global changes. LIFE INSULAR has selected eight Natura 2000 SACs from Ireland and Spain to develop restoration actions on target island habitats in 5 islands in both Member States, addressing common conservation problems and threats to increase their area of occupancy, and improve their structure and future perspectives:

- Irish Atlantic Region: In Éire, four SACs (counties Donegal and Wexford) have been selected
- Spanish Atlantic region: three SACs on Cíes, Ons and Sálvora islands (Galicia)
- Spanish Macaronesian region: one SAC on La Graciosa islands (Canary Islands)

The Islands of the Atlantic Ocean (distributed in the Atlantic and Macaronesian Regions) have been identified among the areas with the greatest biodiversity in the European Union, but also among the most threatened for generally presenting environmental problems, today aggravated by global change.

LIFE INSULAR will apply the most appropriate and proven practices, such as the elimination of senescent forest plantations and their invasive regenerate, elimination of exotic invasive flora species, protection measures against anthropogenic pressures, restoration of island habitats through sowing/planting characteristic species that will be collected/cultivated by the project itself.



Calluna vulgaris

Duration: 01/09/2021 - 31/12/2026 - **Total budget:** 5.274.922 € - **EU contribution (75%):** 3.956.056 €



Project partners



IBADER (Universidade de Santiago de Compostela)

as the coordinating beneficiary, it assumes responsibility for the general management of the project, in addition to executing the preparatory actions in Galicia and the Canary Islands. It also participates in raising awareness and dissemination and monitors the actions that are carried out in Spanish territory



COILLITE CGA

it will be in charge, together with the Department of Housing, Local Government and Heritage, of developing preparatory and conservation actions in Irish sites, also collaborating in the management and monitoring of the project in them



Dirección Xeral de Patrimonio Natural, Xunta de Galicia

it will be, together with TRAGSA, the partner in charge of developing conservation actions in the Galician sites, as well as participating in dissemination and awareness-raising tasks



**An Roinn Tithíochta,
Rialtais Áitiúil agus Oidhreachta**
Department of Housing,
Local Government and Heritage

Department of Housing, Local Government and Heritage

will be in charge, together with COILLTE, of developing the preparatory and conservation actions in the Irish sites, assuming their monitoring and also collaborating in the management of the project and its dissemination



Organismo Autónomo de Parques Nacionales (OANPN)

participates in the dissemination and awareness-raising actions of the project, also collaborating in its monitoring and management on Canary islands



Empresa de Transformación Agraria S.A., S.M.E., M.P (TRAGSA)

It will be, together with Dirección Xeral de Patrimonio Natural and Organismo Autónomo de Parques Nacionales, the partner in charge of developing preparatory and conservation actions in the project sites on Spain



The EU LIFE program

Since 1992, the LIFE Program is the only financial instrument of the European Union dedicated entirely to the environment, nature conservation and climate action.

The general objective of the LIFE program ([cinea.ec.europa.eu/programmes/life_en](https://inea.ec.europa.eu/programmes/life_en)) for the period 2021-2027 is to contribute to the protection and improvement of the quality of the environment, as well as to stop and reverse the loss of biodiversity, thus contributing to sustainable development and supporting the shift towards a clean, circular, energy efficient, low-carbon and climate resilient economy, including through the transition to clean energy. The program also contributes to the development, implementation, monitoring and compliance of relevant legislation and policies in the EU, acting as a catalyst for the large-scale establishment of successful technical solutions.

The LIFE Program is managed by the European Commission, and is structured in two fields, each of which includes two subprograms:

“Environment” field

Subprogram "Nature and Biodiversity"

Subprogram "Circular Economy and Quality of Life"

“Climate Action” field

Subprogram "Climate Change Mitigation and Adaptation"

Subprogram "Clean Energy Transition"



Natura 2000 network

One of the most ambitious objectives of Directive 92/43/EEC was the creation of a coherent ecological network, the Natura 2000 Network, made up of the sites declared in accordance with Directive 79/409/EEC (currently replaced by the Directive 2009/147/EC), as Special Protection Areas for Birds (SPA), as well as those designated for the conservation of the habitats of Annex I and the species of wild flora and fauna of Annex II of the 92/43/EEC Directive itself, designated in its initial phase as Sites of Community Importance (SCI), and in its final phase as Special Areas of Conservation (SAC).

According to data provided by the Directorate General for the Environment of the European Commission at the end of 2021, Natura 2000 is made up of more than 27,000 sites, occupying more than 1 million km², which represents 18% of the terrestrial area and 4% of the marine surface in the European Union (EUR27). Including 3,372 SPAs, occupying an area of 823,362 km², with marine environments represented in 894 SPAs, which represent an area of 298,324 km². As for the SCI/SAC, their number amounts to 23,659, which cover an area of 940,510 km², with marine environments represented in 2,027 sites, occupying an area of 350,570 km².



The islands of the Atlantic Ocean

The islands of the Atlantic Ocean are one of the areas with the greatest biodiversity in the EU, thanks to the combination of climatic, soil and coastal dynamics conditions, which is why they host a very high diversity of habitat types and species included in Directives 92/43/EEC and 2009/147/EC, many of them considered priorities for their conservation. These island ecosystems generally present shared environmental problems, which is why they are extremely threatened and, consequently, the habitats present in them, which form complex mosaics that present joint patterns of fragmentation and vulnerability, nowadays intensified by global change.

It is recognized that the most threatened habitats on the islands of the Atlantic Ocean are dune ecosystems. Thus, LIFE INSULAR is a project that aims to achieve a favourable conservation status of the fixed grey dune habitat (2130*) and its contact habitat (4030) on 5 islands of the Atlantic Ocean, spread across the Atlantic and Macaronesian biogeographical regions. The project has a transnational scope, so 8 Natura 2000 SACs in Ireland and Spain have been selected to develop conservation actions, addressing common problems and threats to increase the area and improve the structure and future prospects of the targeted island habitats.



Island areas

Island environments are terrestrial ecosystems separated from the continent by the sea, and whose delimitation is perfectly demarcated by the coastline, a characteristic that defines their isolation with respect to the continents. This separation, in the short or long term, has made it possible a greater simplicity of ecosystems and a higher difficulty or impossibility of the species settled there to carry out genetic exchange with continental species, which present much more extensive, diverse, and interconnected populations.

Broadly speaking, the islands can be divided based on their geological origin between the so-called continental islands and oceanic islands. Continental islands may have their origin in ancient phenomena of continental drift, which make up the so-called microcontinents, or be formed by spaces close to the continental coast, whose insular origin is linked to sea level oscillations, which is why they have been functioning alternatively as islands or as a continent throughout the Pleistocene. In LIFE INSULAR, this group includes the targeted archipelagos located in the European Atlantic region.

On the other hand, oceanic islands are linked to the volcanic activity of the seabed, presenting a greater degree of confinement and therefore, in general, a greater degree of relictualism and endemism, both due to greater isolation and the absence of an initial biota. In LIFE INSULAR, this group includes the targeted islands located in the Macaronesian region.



Although they only represent a small percentage of the Earth's surface, islands are home to an important part of the planet's biodiversity, which is why they form ecosystems with exceptional natural wealth. Not only does the emerged part of the islands have high biodiversity values, but the marine areas make up a mosaic of habitats that support a great diversity of flora and fauna species. Both terrestrial and marine environments are highly unique and fragile and are exposed to damage caused by human activities.

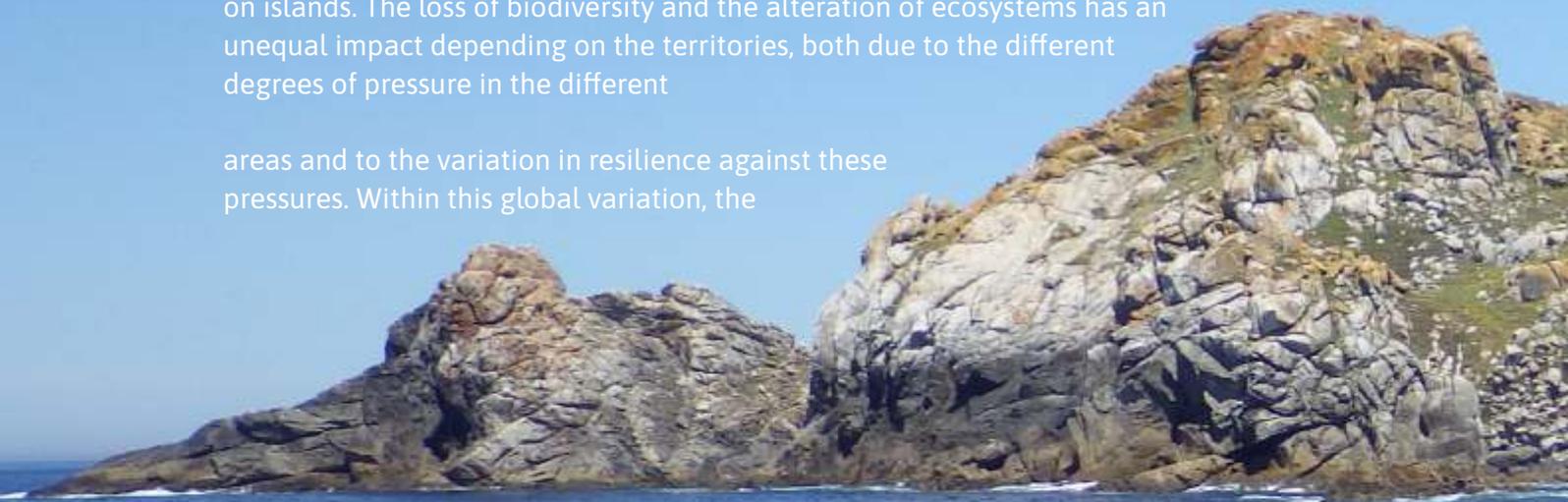
In recent decades, both high tourism and fishing pressure, and the presence of invasive species, have caused the extinction or endangerment of numerous insular species. Thus, according to IUCN data, more than 40% of the animal species included in the Red List live on islands. The loss of biodiversity and the alteration of ecosystems has an unequal impact depending on the territories, both due to the different degrees of pressure in the different

areas and to the variation in resilience against these pressures. Within this global variation, the

particular biogeographic conditions of island territories determine that they currently stand out in terms of biodiversity loss, presenting a specific problem in terms of conservation of habitats and species, which requires a different management.

In turn, fragility depends on both the size of the space and the insulation. The phenomenon of insularity is very variable, depending on its size, its origin, and the distance from the continent of the island spaces. These factors determine whether or not there is an initial biological endowment, the degree of possibility of exchange with continental spaces or the possibility of developing complete trophic chains. All these particularities mean that conservation problems appear more intensely in island areas.

Among the main problems of island territories are the alteration of habitats, either due to the occupation of the territory by forest plantations or infrastructure, or due to tourist pressure. In addition, climate change also represents a significant threat in these areas, due to difficulties in the movement of species. However, the main conservation problem faced by island biocenosis is the alterations produced by the introduction of invasive exotic species, determined by the great invasibility that characterizes insular areas.



Targeted habitats

The islands of the Atlantic Ocean (distributed in the Atlantic and Macaronesian biogeographical regions) have been identified as one of the areas with the greatest biodiversity on the European continent, thanks to the combination of climatic conditions, edaphic and coastal dynamics, which is why they host a very high diversity of habitat types and species included in Directives 92/43/EEC and 2009/147/EC, many of which are considered priority for conservation. These insular ecosystems generally present common environmental problems, which are currently aggravated by global change, which causes them to be highly threatened and, consequently, the habitats present in them.

The predominantly coastal nature of the LIFE INSULAR sites motivate that the largest group of habitats are the coastal types and halophilic vegetation along with the habitats of the group of maritime and continental dunes. In some of the project areas, heaths acquire great territorial importance, while different types of habitats of herbaceous, rocky and forest groups are also harboured, but with a lower surface representation.

The internal limit of the littoral zone corresponds to the coastal space, a margin that constitutes the interface between the maritime and terrestrial environments, where the ecological processes and their uses directly affect the other. Functionally, it is considered as a broad and irregular ecotony with great intensity in the processes of synthesis, degradation and exchange of matter and energy.

This coastal space is subject to a strong and continuous dynamic both in its configuration and in its delimitation. In relation to this coastal dynamic, two units are established: a rocky coast, with a clear predominance of vertical forms, and in contrast to this, the sandy coasts and salt marshes. The dominant energy processes in these environments condition the habitat types and the biotic communities present in them.

From an ecological perspective between marine and terrestrial ecosystems, it is established a succession of different environments and habitat types that present great diversity and environmental complexity. The great extension of the European coastline and its exposure to the dominant winds from the West favour the formation of dune complexes of highly variable morphology and extension. In recent times, the processes of elimination or serious environmental modification of these environments have intensified to the point that a large part of them have disappeared, or present a high degree of alteration, mainly in the areas of greatest tourist attraction. This phenomenon is common to the island areas included in the LIFE INSULAR project. proxecto LIFE INSULAR.



Ammophila arenaria

Among the set of dune habitats present in the selected sites, there are two priority habitats: 2130* Fixed coastal dunes with herbaceous vegetation (grey dunes) and 2150* Atlantic decalcified dunes (Calluno-Ulicetea), being 2130* one of the targeted habitats by LIFE INSULAR project.

2130* dune ecosystems contact, following a horizontal axis, cliff habitats of type 1230 on the islands of the Atlantic Region and 1250 on the islands of the Macaronesian Region. Simultaneously, following a vertical axis, they contact catenally with different types of coastal heaths and cliff habitats. Among the groups of heaths habitats, the broad representation of habitat 4030 stands out, another of the habitats targeted by the project.

As a whole, LIFE INSULAR SACs are noted for the variety, the contact and the continuity established between the different groups of marine and coastal habitats. These spaces house representations of a large part of the typologies identified in the Atlantic and Macaronesian biogeographical regions, playing an important role from the biodiversity and natural heritage conservation point of view, as these ecosystems are highly fragile and vulnerable because of the threats identified by LIFE INSULAR project.

Among the most threatened island habitats are dune ecosystems (2130*) and their contact habitats (4030), so LIFE INSULAR will implement specific actions to improve their conservation status on eight Natura 2000 SACs of five islands located in the Atlantic Ocean, spread over the Atlantic and Macaronesian biogeographical regions, mitigating the four main threats identified for habitats 2130* and 4030.



2130* Habitat Fixed coastal dunes with herbaceous vegetation (grey dunes)

Priority habitat type 2130* is a representative habitat in terms of presence and surface distribution in all the Natura 2000 areas of LIFE INSULAR, both those included in the Atlantic and Macaronesian biogeographical regions, since it is present in all of their respective standard data forms and occupies significant surfaces in them. Every LIFE INSULAR SAC will receive specific conservation actions on 2130* habitat type, which totally occupies 1,163.1 hectares within the project SACs, representing 3.5% of its total territorial scope (just over 35,400 ha), while within the selected insular SACs (Cíes, Ons, Sálvora, La Graciosa, Eire), habitat 2130* occupies 703.5 ha, which represents 6.8% of the island territories in the chosen SACs.

Priority habitat type 2130* constitutes the main habitat type targeted by LIFE INSULAR, since this project will develop specific conservation actions on type 2130* to improve its conservation status in a total of 152.6 ha (discounting overlapping areas) on eight Natura 2000 SACs of five islands located in the Atlantic Ocean, spread over the Atlantic and Macaronesian biogeographical regions.



CONSERVATION STATUS

The conservation status of priority habitat type 2130* in the Atlantic biogeographical region is unfavourable-bad according to its area of occupancy, structure, functionality, and future prospects. This negative trend has also been detected in the archipelagos targeted by the project, being aggravated by their island nature. The conservation status of the priority habitat type 2130* is considered unfavourable-inadequate in the Macaronesian biogeographical region, detecting a series of pressures and threats that cause a significant impact specifically on type 2130* on La Graciosa island



THREATS

Among the main threats identified on habitat type 2130* in the Spanish and Irish Atlantic biogeographical regions, as well as in the Spanish Macaronesian biogeographical region, LIFE INSULAR will act by eliminating senescent forest plantations, controlling the presence of invasive exotic flora species, correcting the effects caused by anthropogenic pressures, and contributing to minimizing the effects of global climate change that increases the previous ones



ACTION PROPOSALS

The project will increase 32 ha of the area occupied by type 2130*, which represents an increase of 5.2% of habitat 2130* in the island territories of the involved SACs, as well as the improvement of its structure and future prospects on 133.6 ha, through actions that implement measures against anthropogenic pressures, which represents an improvement of 19.0% of habitat 2130* in the project islands



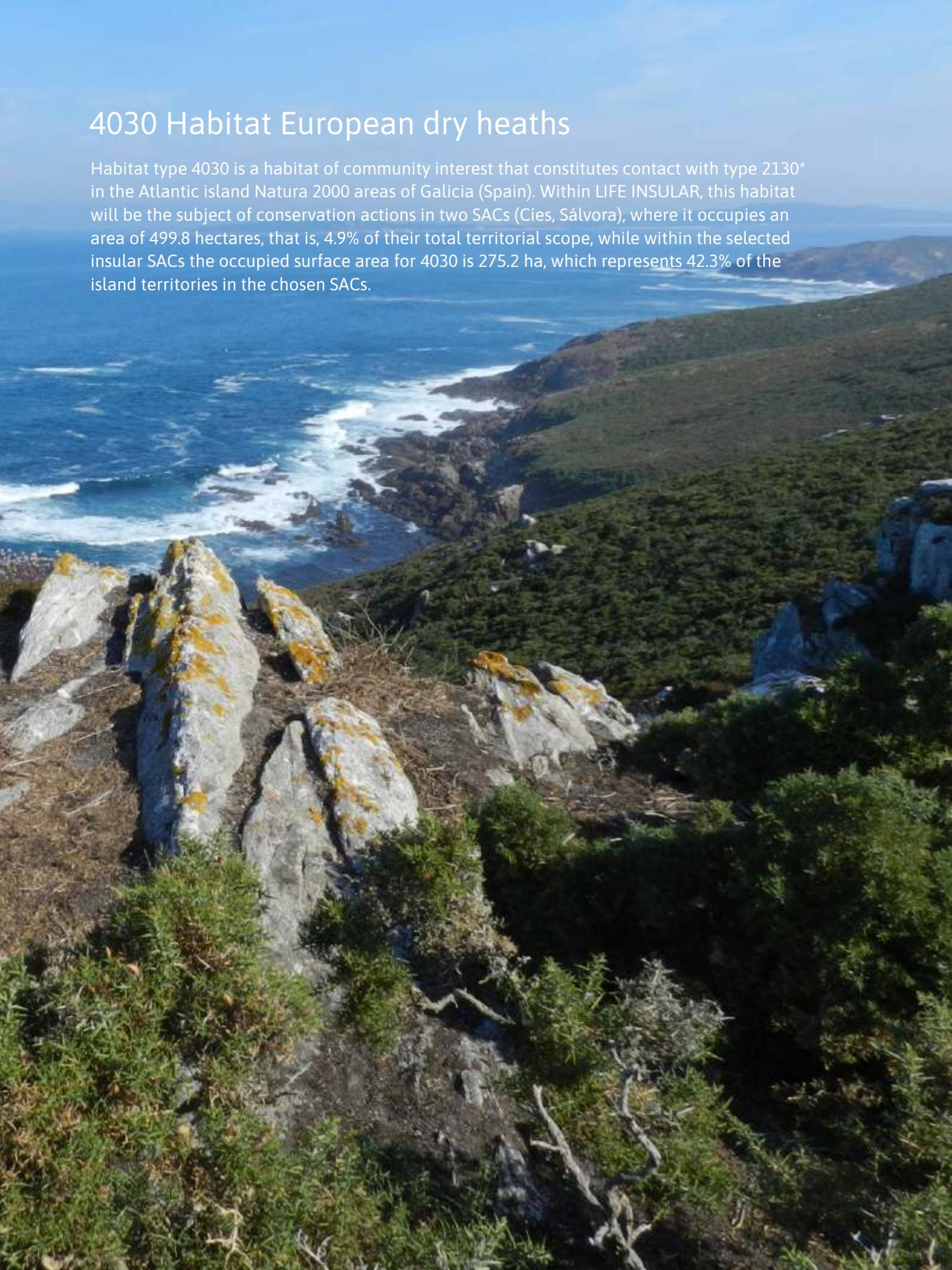
PROJECT IMPACT

The impact of the project will be very relevant, since it acts urgently in the island territories where it is necessary to mitigate or halt the effects of climate change and the pressures detected on priority habitat 2130*, serving as a method of early action against a series of negative impacts that cannot be recorded in the standard data forms of the selected SACs



4030 Habitat European dry heaths

Habitat type 4030 is a habitat of community interest that constitutes contact with type 2130* in the Atlantic island Natura 2000 areas of Galicia (Spain). Within LIFE INSULAR, this habitat will be the subject of conservation actions in two SACs (Cíes, Sálvora), where it occupies an area of 499.8 hectares, that is, 4.9% of their total territorial scope, while within the selected insular SACs the occupied surface area for 4030 is 275.2 ha, which represents 42.3% of the island territories in the chosen SACs.



CONSERVATION STATUS

The current conservation status of habitat type 4030 for the Atlantic biogeographical region is unfavourable-bad in terms of structure, functions and future prospects, a negative trend also detected in the Spanish Atlantic region and generalized to the rest of the Member States in the European Atlantic biogeographical region



THREATS

Among the main threats on habitat type 4030 in the Spanish Atlantic biogeographical region are reforestation with exotic species, the presence of IAS and the effects caused by anthropogenic pressures, all of them of medium degree. The negative effects caused by these threats have also been identified in the project archipelagos, aggravated by the island effect, considering the influence that the effects of global climate change have on insular ecosystems



ACTION PROPOSALS

LIFE INSULAR will carry out specific conservation actions for habitat 4030 to mitigate the main effects of the threats and pressures detected, to improve its conservation status in a total of 117.0 hectares in Cíes and Sálvora archipelagos. In this way, the project aims to increase the habitat 4030 area by 22 hectares (11.6%) and improve its structure and functionality by 95 hectares, which represents an improvement of 34.5%



PROJECT IMPACT

The impact of the project will be of great relevance because it will contribute to mitigating or halting the effects of the pressures detected on type 4030 in the island territories, where it is necessary to act urgently, serving on the other hand as a method of early action against a series of negative impacts that are not recorded in the standard data forms





Action Sites



Raven Point Nature Reserve SAC

The Raven is located on the southeast coast of Ireland, County Wexford. Its name comes from the Irish term Rabhainn which means "a spade shaped piece of land", in reference to the narrow original shape of the spit of sand that shelters Wexford Harbour, located to the south of the site. It is currently part of a large ecosystem of sand dunes, coastal lagoons and sandbars, which comprise a set of coastal habitats included in Annex I of Directive 92/43/EEC.

The sandy formation is dominated by a coniferous plantation carried out in the early 1930s and 1950s. In the northern and western part of the plantation, the herbaceous stratum is characterized by a fern/bramble/ivy community. In the most exposed eastern part of the forest plantation, some herbaceous species that are commonly found in fixed dunes persist.

A dynamic system of sand flats, saltmarshes, lagoons, sand dunes and small humid dune slacks is present at the southern distal end of the sand formation, known as The Raven Point. Due to different degrees of exposure, the southeast experiences cycles of erosion and accretion with little long-term dune formation, while in the more protected southwest, the dunes have stabilized, forming low-rise open units typical of the habitat 2130*, with a characteristic flora of fixed dunes. The southern part contains the most developed examples of habitats 1210, 2110 and 2120.

In this dune system, the presence of several species of protected plants has been recorded, including *Pyrola rotundifolia*, *Centaureum pulchellum* and *Asparagus officinalis* subsp. *prostratus*. The Bufo calamita toad, a rare and protected species, has a small population that remains associated with semi-natural ponds. Additionally, The Raven Point is of great interest to birds, highlighting its relevant importance as the main nocturnal refuge for the internationally important population of *Anser albifrons flavirostris*, located in Wexford Harbour.





Archipiélago Chinijo SAC

This site, located in the Macaronesian biogeographical region, includes the islets of La Graciosa and Alegranza, located northwest of Lanzarote, as well as an important coastal strip that covers the entire western flank of the Famara massif (Famara cliffs) and the flats of Lomos Blancos, Sacominas and Costa Blanca. This entire complex constitutes a space of exceptional landscape and natural value within the Canary Archipelago (Spain), characterized by the presence of notable volcanic edifices and lava fields.

The cliff is formed by the stacking of a multitude of ancient tabular basalts, interspersed with pyroclastic and terrigenous deposits, the latter often transformed into reddle. The volcanic landscape has continuity under the waters of the sea, the islets have a wide rocky platform, where there are numerous veriles, cornices, and some tunnels such as the one that crosses the Roque del Este. Below the rock beds appear detrital beds, with sands of organic origin in some areas and rhodolith beds in others. The biota supported by the bottoms of the archipelago is unique, both for its biodiversity and its biomass since it is the area of the Canary Islands with the highest diversity index of macroalgae species.

The cliffs of Famara are a genetic reservoir of flora with a high concentration of exclusive elements, Canarian and Macaronesian endemisms (more than 75% of the endemic flora of Lanzarote and up to 12% of the endemic Canarian flora). The population of invertebrates is also very interesting, with species that are found at greater depths in other seabeds and that can be observed here by scuba divers. The abundance of ichthyofauna serves as a food resource for numerous seabirds that present exceptional diversity, especially on the islets. Raptors also nest on the coast of Lanzarote, and in the interior plains of the island there is a good representation of steppe and wading birds.





Complexo Ons - O Grove SAC

It is located within the Atlantic biogeographical region, including the Ons Archipelago, the Umia - O Grove intertidal complex, the Lanzada dune system, a coastal stretch of the O Grove peninsula and the southern part of Arousa island and its associated islets. This entire system is located between the Ría de Pontevedra (Lérez river estuary) and the Ría de Arousa (Ulla river estuary) in Galicia (Spain).

The Ons Archipelago is located in front of Ría de Pontevedra, being part of a mountain range sunk a few million years ago, which reaches low-rise heights, the highest being 128 m, where the lighthouse is located. All the sides of Ons island are cliffs, except the East face, which is less steep and where sedimentary formations appear forming beaches, which gives it a geomorphological originality.

Much of the territory of the SAC around Ons Archipelago corresponds to marine surface, highlighting several enclaves with species of interest, such as horny corals, fields of anemones, and of course the maërl beds present in this territory, with coralline algae of interest for conservation. Among the terrestrial ecosystems, on Ons island the majority cover is occupied by coastal heaths defined by a coastal mosaic of *Ulex* spp. which stand out for their abundance and for having the recently described endemism *Cytisus insularis* in their specific composition. The dune systems and the important rocky outcrops present on the coastal cliffs come into contact with the heathlands.

Among the species of flora and fauna present in this territory, it is worth highlighting the occasional presence of two priority species of sea turtles, protected flora species, a high number of wintering birds that visit this area, and a very diversified herpetofauna community. Likewise, the presence of various aquatic mammals has been detected, as well as the presence of terrestrial mammals (mainly chiropterans).





Horn Head and Rinclevan SAC

This site is located west of the town of Dunfanaghy, in the north of County Donegal (Ireland). Extensive areas of sand dominate the southwestern and eastern parts of the site, while peaty soils predominate in the north, with occasional rocky outcrops. The area includes a complex of main habitats, such as open marine areas, sea cliffs, sand dunes (various types), peat bogs and heathlands. Other habitats present include intertidal mudflats and saltflats or wet meadows.

In the southwestern part of the site there is a dune system that impresses with its size, the variety of dune types and the absence of disturbances. It is possible to see the embryonic dunes (2110) as a thin strip along the margins of the large white dunes (2120), although of priority interest are the fixed dunes 2130* present in this space. Habitats 2190 and 2170 are also very extensive, with this site hosting the largest area of humid dune slacks in Ireland. Habitat 21A0* Machairs, whose EU distribution is limited to Ireland, is in the northwest of the site.

The dunes are bounded by rocky headlands with meadows and heaths. On the rocky cliffs (maximum height 207 m), exposure is a limiting factor, but inland the slopes support lush vegetation dominated by heather. The cliffs at Horn Head are of great importance for seabirds, supporting an internationally important population of razorbill, as well as nationally important populations of *Fulmarus glacialis*, *Rissa tridactyla* and *Uria aalge*. *Falco peregrinus* and *Pyrhacorax pyrrhacorax* are site breeders, while regular wintering populations of *Cygnus cygnus*, *Anser albifrons flavirostris* and *Branta leucopsis* are found, along with a variety of other waterfowl species.





Donegal Bay (Murvagh) SAC

This site occupies the inner part of Donegal Bay in northwest Ireland. It contains the River Eske estuary and other important rivers, especially for salmonid species. The area is underlain by limestone and carboniferous shales, although sand and other recent deposits obscure much of the geology.

Most of the site consists of intertidal habitats, particularly mudflats and sandflats, inlets and bays, estuaries, estuarine channels, and sandy beaches. These areas are generally devoid of vegetation, but are obviously rich in nutrients, as extensive shellfish beds exist in some parts of the bay. The following macroinvertebrate species are common in much of the bay: *Arenicola marina*, *Hediste diversicolor*, *Scrobicularia plana* and *Macoma balthica*. Along some parts of the coast, several salt marshes have developed, in which the dominant plants include *Armeria maritima*, *Festuca rubra*, *Cochlearia officinalis*, *Triglochin maritima*, *Juncus acutus* and *J. gerardi*.

Sand dunes include the presence of fixed dunes 2130* and wet depressions 2170, which feature species characteristic of their typical communities, including plant species included in the Irish Red List. Murvagh is also an important site for butterflies, with records including *Cupido minimus*, *Erynnis tages*, *Argynnis paphia* and *Speyeria aglaja*, among others. Most of the fixed dune habitat 2130* is limited to the southwest of the SAC. In addition to 2130*, there are also habitats 2190 and 2170 on the border between forest plantations and open dunes.

Donegal Bay offers one of the most important sites in the country for various species of birds, such as *Melanitta nigra* or *Branta bernicla hrota*. Other notable wintering species at the site are *Anser albifrons flavirostris*, *Charadrius hiaticula*, *Haematopus ostralegus* and *Calidris alpina*.





Complejo húmido de Corrubedo SAC

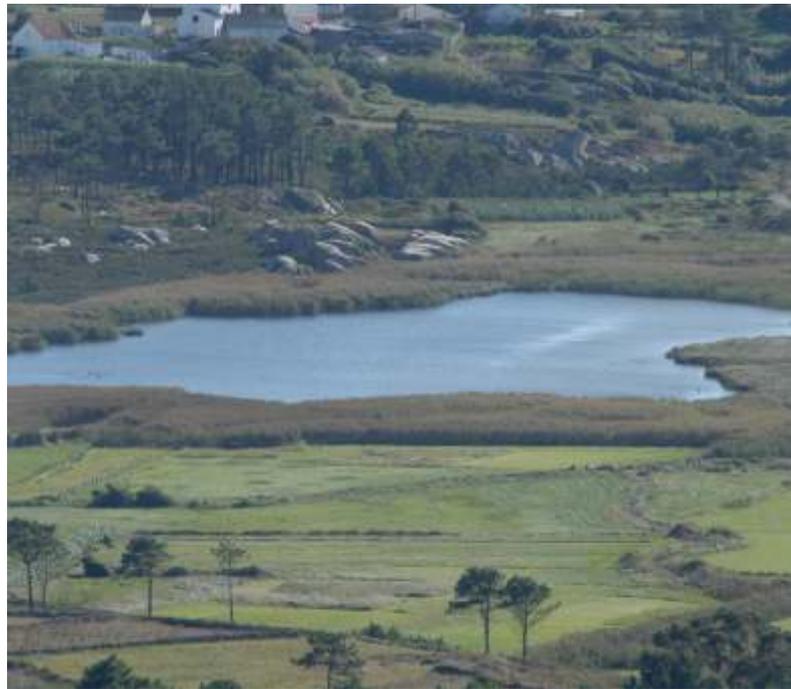
The territorial scope of the Complejo húmido de Corrubedo SAC, located within the Atlantic biogeographical region (Galicia, Spain), includes, from North to South, the coastal territory of the southernmost part of Ría de Muros e Noia (Tambre river estuary) where the Muro e Xuño wetland complex and its associated dune system are located, the large sandy amphitheater of Corrubedo, and Sálvora island together with its small islets Vionta, Con de Noro, Herbosa, Rúa, Insabela, Gaboteira, Sagres and Forcadiñas, located at the entrance of Ría de Arousa (Ulla river estuary).

The relief of the continental zone in this area corresponds to a low and slightly rugged coast, in which the Corrubedo dune complex stands out, with the large mobile dune more than 1 km long, 200-250 m wide and between 12 - 15 meters high. The presence of this large sandy barrier favoured the creation of a large interior sedimentary space composed by stabilized dunes (grey dunes), humid dune slacks and isolated coastal lagoons.

Sálvora island, where there is no stable human population, presents similar landforms to those on the nearby coastal areas, including very smooth surfaces (whalebacks) and other more erect tabular or spherical ones, as a result of fracturing. In the northern area of Sálvora, as in the central part of Vionta, there are important dune systems of great naturalness given the reduced anthropogenic pressure that this archipelago has received, a situation that extends to all the ecosystems of the territory.

Complejo Húmido de Corrubedo SAC is a coastal area of undoubted ecological value, since the diversity of ecosystems, together with its geographical location, makes it an area with a high number of species, many of them protected by the different regulations at a European, Spanish or regional level, being a territory of special interest for plant, herpet and bird species.





Sheephaven SAC

Sheephaven Bay is a north-facing inlet, on the north-west coast of County Donegal, north-west Ireland. The site occupies the entire inner part of the bay and contains a diversity of habitats ranging from intertidal flats, salt marshes and sand dunes, to lakes, rivers, heathlands and forests.

The site is particularly notable in the national context due to its intertidal zone. The mudflats and sandflats support one of the largest areas of annual vegetation in Ireland, dominated by *Salicornia europaea*, the largest known extent of habitat not affected by *Spartina townsendii*, an invasive species that threatens this habitat.

The sediment on the beaches is fine, well-stratified sand, and the communities present are representative of coasts moderately exposed to wave action. The rare species of hermit crab *Diogenes pugilator* is present at its northernmost recorded locality in Ireland here. Large areas of sand dunes are present in the site. The white dunes are dominated by *Ammophila arenaria*, with abundant fixed dunes behind. Wet dune slacks are also present, as well as a relatively small area of Machairs, which show an interesting transition to marsh vegetation.

In Ards Forest Park, there are several areas of native deciduous tree formations such as oak, holly, hazel and birch, while conifer plantations are also found. The habitats of this locality support a notable collection of Red Listed and Near Threatened butterflies, including one of the most northerly localities of *Leptidea juvernica* in Ireland. The site is of particular importance for birdlife conservation, as the extensive intertidal mudflats and sandflats tend to concentrate moderate numbers of waterfowl in autumn and winter.





Illas Cíes SAC

Illas Cíes SAC is located in front of the Ría de Vigo (Galicia, Spain), in the Atlantic biogeographical region, with a very small stable human population. Within its scope the islands of Monteagudo or North, Faro or do Medio and San Martiño or Sur are included, as well as the islets of Agoeira or Boeiro, Penela dos Viños, Carabelos and Ruzo. These are the steepest islands on the Galician Atlantic coast, as their highest point is Alto das Cíes, with a height of 197 meters.

Cíes Archipelago houses natural values of great interest from the conservation point of view. Among the most important ecosystems we can mention the seabed, the dune ecosystems, as well as the coastal heaths and lagoons. On the dune systems various vegetation belts can be found, characteristic of the embryonic dune, the white dune and the grey dune, as well as hygrophilous dune areas or humid dune slacks. Also noteworthy is the presence of active dune systems that occupy topographic surfaces clearly elevated, under the name of steep dunes.

Regarding the flora and fauna of Cíes Archipelago, it has a significant number of species of conservation interest, with more than 90 species with some category at a European, Spanish or regional protection level, mostly corresponding to birds, as it is a place that houses various colonies of migratory birds, with important wintering populations of yellow-legged gull (*Larus cachinnans*), also highlighting the populations of common shag (*Phalacrocorax aristotelis*), common turnstone (*Arenaria interpres*) and common guillemot (*Uria aalge*).

Among the flora, the presence of *Erodium maritimum*, *Linaria arenaria* and *Rumex rupestris* stands out, although the maërl-forming coralline algae must be also mentioned, *Lithothamnium corallioides* and *Phymatholithon calcareum*. As for terrestrial invertebrates, Cíes Archipelago has populations of *Zerynthia rumina* and *Euphydryas aurinia*.







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DIRECCIÓN XERAL DE PATRIMONIO NATURAL



An Roinn Tithíochta, Rialtais Aitiúil agus Oidhreachta
Department of Housing, Local Government and Heritage

 MINISTERIO PARA LA TRANSICIÓN ECOLÓGICA Y EL RETO DEMOGRÁFICO

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