

MADEIRA (MACARONESIA)



Current situation & main challenges

Socio-economic context

With a population density of about 330 inhabitants per km² (approximately three times higher than the Portuguese average), the Madeira archipelago is the most densely populated of the Macaronesia region.

The Madeira economy contributes, on average, with 3% to the national economy of Portugal, and its GDP per capita is 19,569 € (2012, preliminary data)⁽⁹⁾, 25% higher than the national average⁽¹⁰⁾.

The region's economy is dominated by the tertiary sector: favorable fiscal conditions have attracted many international finance companies. Besides, Madeira has been a tourist destination since the XIXth century and the tourist industry mobilized nearly one million visitors in 2012, accounting for 5% of the archipelago's GDP⁽¹¹⁾. There is little industry, most of it related to the production of artisanal goods, such as embroideries. The bananas, flowers and wine produced on Madeira are destined for the local and metropolitan markets.

Legal and political context

Madeira is an autonomous region of Portugal, situated in the Atlantic Ocean 660 km to the west of Morocco, which consists of two main islands (the Island of Madeira, which represents 90% of the land of the archipelago and the island of Porto Santo), other uninhabited islands (Desertas and Selvagens) and several small islets.

Besides the protected areas designated under a regional framework (one nature Park, covering 60% of the surface of Madeira island, and 5 Nature Reserves), the archipelago has 16 Natura 2000 sites (5 Special Protected Areas and 11 Special Areas of Conservation).

In terms of Global Agreements, Portugal has concluded or ratified the main Treaties and Conventions on Nature and Biodiversity Conservation, such as CBD, Bern Convention, CITES, Bonn Convention and Ramsar Convention. Other policy instruments of direct importance for biodiversity of the archipelago are the EC Birds and Habitats directives and the Natura 2000 network and the Man, Biosphere programme and the network REDBIOS.

Facts & figures

Geography

Total area:	453,967 km ²
Land area:	828 km ² (0.18%)
Protected land area:	470 km ² (57%) ⁽¹⁾
Total marine area:	453,139 km ² (99.82%) ⁽²⁾
Exclusive economic zone (EEZ):	442,316 km ² (98%) ⁽²⁾
Marine protected area (MPA and/or MMA):	2,223 km ² (0.5%) ⁽¹⁾

Overseas Regions

(Governance/Dependency): PT

Socio-economic facts

Total population:	267,785 (2011) ⁽³⁾
Population density:	334/km ² (3) ⁽³⁾
GDP (2012, preliminar. data):	4,812 million € ⁽⁴⁾
Main income sources ⁽⁵⁾ :	
1. Wholesale and retail trade; repair of motor vehicles and motorcycles; transportation and storages; accommodation and food service activities (32.1%)	2. Public administration; education; human health activities (22.2%)
	3. Information and communication activities; Financial activities; Real Estate activities (15.4%)

Biodiversity

Threatened ecosystems*: Laurel forest 150 km² (20% from the original 60% cover)⁽⁶⁾

Endemic species**: 1,419 taxa (1,286 species & 182 subsp.) (19%)⁽⁷⁾

- Land Mollusca (210) and Arthropoda (979) comprise about 84% of the Madeiran known endemics. Endemism within Mollusca reaches 71%⁽⁷⁾

- Iconic endemic sp.: *Pterodroma madeira*; *Columba trocaz*; *Pieris brassicae wollastoni*; *Tarentola bischoffi*; *Geranium maderense*; *Echium candicans*; *Isoplexis scyprum*

Threatened species***: 145⁽⁸⁾

Pterodroma madeira; *Pterodroma deserta*; *Monachus monachus*; *Pipistrellus maderensis*; *Tarentola bischoffi*

Current conservation status

Threats and pressures on biodiversity

Having suffered extensive clearance after the islands were settled, Madeira's native vegetation is currently threatened by invasive species, mismanagement of pastures and grazing, and tourism development.

During the last 500 years, most of the Madeira's forest has been destroyed through exploitation for agricultural purposes, ship-building, road building and urbanization. Today felling is strictly controlled and the main threat to forest today is forest fires. The preservation in Madeira of the largest extension of laurel forest still existing today can be credited to the largely inaccessible mountain systems that cover such a large proportion of the island. Reforestations with non-native species, *Pinus pinaster* and *Eucalyptus globulus*, are widespread at mid-altitudes. In the more accessible areas, many sensitive habitats were severely altered, leading to the extinction of species. This occurred, for instance, in humid habitats of Southern Madeira (where *Rupia maritima* disappeared from brackish habitats and *Osmundia regalis* and *Dracunculus canariensis* vanished with the artificialization of riparian habitats). In the highlands of Madeira Island, grazing was the main threat to the native vegetation, but a recent total ban (and previous restrictions) give hope of restricting the degradation trend.

A similar process took place in Porto Santo, which today is almost completely humanized. Overgrazing by rabbits and livestock has led to severe regression of the endemic flora also on Desertas and Salvages, which in turn has caused erosion of the coastline.

Fossil records for molluscs and birds show that 9 terrestrial molluscs disappeared in the 600 years since human colonization⁽¹²⁾, and also that the archipelago of Madeira was inhabited by endemic birds (at least three flightless rails, two quails, a scops owl, and several passerines) that probably went extinct after human arrival.⁽¹³⁾ Many arthropod species have not been found since they were described from laurel forests in the XIXth century. The Laurisilva area was much larger then that it is today, leading researchers to fear that some of these described but never seen again species may have in fact disappeared. The information available for the marine species and habitats is limited, but there are indications of impacts, including those related to intensive fishing.

Current investments

- [Establishment of a Nature Park in Madeira island](#) which is a protected area covering 60% of its surface. In addition, 5 Nature Reserves were established in the archipelago.
- [Designation of a Biosphere Reserve in Madeira island](#) which includes the threatened Laurel Forest ecosystem.
- Accomplishment with the actual establishment of the Natura 2000 network, by designating 5 Special Protected Areas (for birds) and 11 Special Areas of Conservation.
- [Development of several projects for the conservation of species and habitats](#), such as: the protection and subsequent recovery of the only surviving Macaronesian population of the monk seal, *Monachus monachus*, the most endangered pinniped species in the world; the recovery of habitats and species of the Natura 2000 Network sites "Ilhéus do Porto Santo" (Porto Santo islets) and "Ponta de São Lourenço & Ilhas Desertas"; Recovery of the *Pterodroma madeira* habitat, an endemic species and one of the rarest marine birds.
- The entire remaining laurel forest ecosystem is protected and classified as a European Council Biosgenetic Reserve since 1992, as well as a UNESCO World Natural Heritage site since 1999.

Critical areas for action / Investment niches

- Development of a biodiversity data base/portal (similar to the existing ones for the Azores and Canary Islands, based on the ATLANTIS software)
- Development of a RED LIST for the Madeiran fauna and flora, ideally following IUCN's recommended criteria for Red Lists.

Important conservation activities (iconic conservation projects)

Project "Ilhéus of Porto Santo": a partnership between the Natural Park of Madeira (Madeira government) and the NGO SPEA (Portuguese Society for the Study of Birds), which main objective is the recovery of habitats and species of the Natura 2000 Network site "Ilhéus do Porto Santo" (Porto Santo islets).

Budget: 1,150,016 € (2010-2014)

Activities: Preparatory actions, elaboration of management plans or action plans; Conservation actions (control and eradication of invasive species of fauna and flora, the fauna and the expansion of indigenous and endemic flora of the islets); Dissemination of the project and its outcomes.

Results: Recovery of the original habitats; Safeguard of the genetic heritage of native and endemic species of the islands in study.

Conservation of the monk seal (*Monachus monachus*) and its habitat: a project started in 1988 and has been extended through several strategies for the conservation of the species and recently by a new LIFE project.

Budget: 1,143,364 € (2014-2018)

Activities: *In situ* protection; monitoring and studying of the monk seal; environmental education.

Results: Creation of Desert Islands Protected Area in 1990 that became a Nature Reserve in 1995, specifically to protect the monk seal; recovery of the only surviving Macaronesian population of the monk seal, a critically endangered species with an overall declining trend (presently, the Nature Reserve shelters 30-35 adults, from a low point of 6-8 individuals in 1980).

Research projects aiming at the conservation of cetaceans

- **CETACEOS MADEIRA II:** Identification of critical marine areas to the bottlenose dolphin (*Tursiops truncatus*) and surveillance of the cetaceans conservation status in the Madeira archipelago.
- **EMECETUS:** Study, monitoring and education for the conservation of cetaceans in the Macaronesia region.

Marine birds study program led by Natural History Museum of Funchal. Annual ringing campaigns are conducted in Selvagens Islands, targeting mainly the Cory's Shearwater, and on Madeira Island, targeting endemic and endangered petrels. This self-financed program is operating since the 1960's and has resulted in numerous scientific papers and the production of crucial management information.

Useful links

<http://ec.europa.eu/environment/nature/biodiversity/best/index>

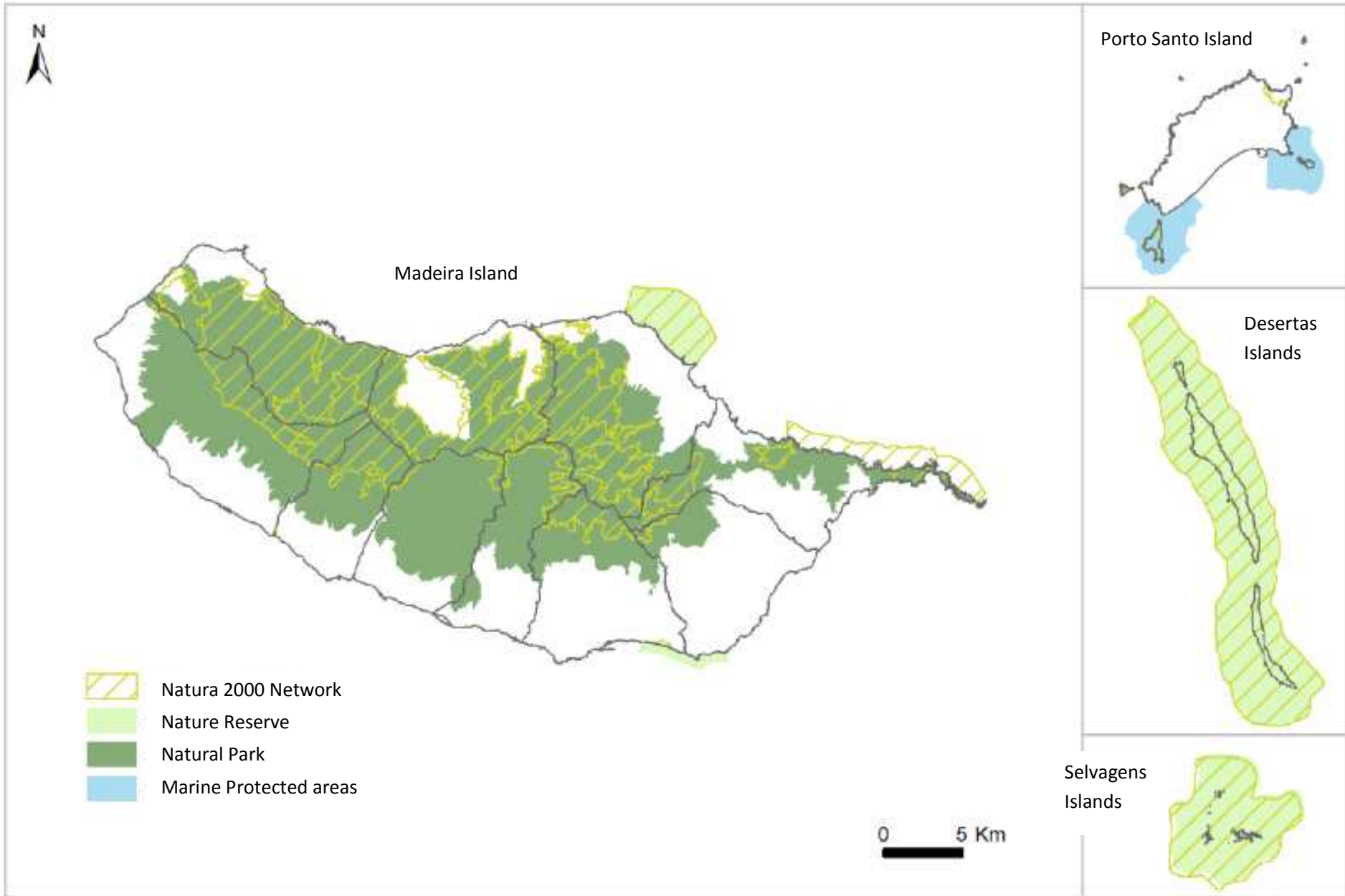
<http://www.pnm.pt/>

<http://biodiversidade.gov-madeira.pt/>

<http://santanamadeirabiosfera.com/en>



Madeira archipelago – Regional protected areas and Natura 2000 sites



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