

10: Gibraltar



Introduction

Gibraltar lies at 36° 07' N 05° 20' W, at the southern extreme of the Iberian Peninsula. It has a total area of 6.5 km². The Rock of Gibraltar, formed of Jurassic limestone, rises in a sheer cliff on the eastern side, reaching 426 m. and slopes more gently to the west. It is joined to Spain by a low-lying sandy isthmus.

International obligations relevant to nature conservation

- Convention Concerning the Protection of World Cultural and Natural Heritage (World Heritage Convention)
- Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar Convention)
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)
- Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention)
- Convention on Biological Diversity (CBD)
- International Convention on the Regulation of Whaling
- Agreement on the Conservation of Bats in Europe (an agreement under the Bonn Convention)
- Council Directive (79/409/EEC) on the Conservation of Wild Birds (Birds Directive)
- Council Directive (92/43/EEC) on the Conservation of Natural Habitats and of Wild Flora and Fauna (Habitats Directive)
- Council Regulation (338/97) on the Protection of Species of Wild Fauna and Flora by Regulating Trade Therein

Implementation

World Heritage Convention: there are moves to declare parts of Gibraltar a World Heritage Site.

CITES: the Convention is implemented through the Endangered Species Ordinance 1990 which was amended in 1993. Gibraltar has also implemented the relevant EU Regulation, and has further legislated to ensure inclusion of locally important species in the Control of Trade in Endangered Species Ordinance 1998.

Birds Directive: Article 4 of the Directive requires member states to designate important areas as special protection areas.

Habitats Directive: a report on the implementation of this Directive was recently prepared by the Gibraltar Ornithological and Natural History Society (GONHS 1994a). This identifies which species and which habitats listed under the Directive occur within Gibraltar.

Proposals to designate areas under both Directives, as part of the Natura 2000 series, is in hand.

In addition Gibraltar may become a biosphere reserve in combination with other areas in the Straits of Gibraltar, as an international effort.

Protected areas

- **The Nature Protection Ordinance 1991:** provides for the designation and preservation of protected areas. The Gibraltar Nature Conservancy Council was created by this Ordinance. It is charged with overall responsibility for nature protection (Part IV Section 20) and is empowered to enforce the Ordinance. This body has the authority to appoint wildlife wardens and honorary voluntary wardens. An area may be designated:

- Nature conservation area:
 - a) by reason of any of its flora, fauna, geological or physiographical features;
 - b) by reason of being the habitat of any wild bird, wild animal or plant specified by the Ordinance;
 - c) for the purpose of securing the survival in Gibraltar of species specified by the Ordinance;
 - d) for the purpose of complying with any international obligation;
 - e) for the provision of suitable research opportunities relating to the natural environment.
- Marine nature area:
 - a) for the purpose of conserving marine flora or fauna or geological or physiographical features of special interest in the area;
 - b) for the provision of suitable research opportunities relating to the natural environment;
 - c) for the purpose of complying with any international obligation.

Consultation on site designation is with the Gibraltar Nature Conservancy Council. No site designation can be made on Crown land without the consent of the Secretary of State. There are restrictions on activities within designated sites and species occurring there are fully protected.

Since the first designation of a part of the Upper Rock of Gibraltar as a nature reserve, the entire area of the Upper Rock is now a nature reserve. The area is managed by Sights Management Ltd. on behalf of the Government of Gibraltar; its responsibilities include control of the Barbary macaque *Macaca sylvanus* population. Visitors to the reserve are charged an entrance fee which also includes access to tourist sites of historical interest.

Much of the Upper Rock has been managed sympathetically with the interests of nature conservation in mind, prohibiting actions harmful to wildlife. As such, the Upper Rock was a *de facto* protected area, even before the Nature Protection Ordinance, not having been farmed, grazed, hunted, farmed, managed for forestry or built upon in any way for the last 30–50 years. A plant community of

unique characteristics has thus developed. This is now under threat as 'firebreaks' are no longer managed annually, and so the open areas important for the foraging of certain species, such as the Barbary partridge *Alectoris barbara*, are vegetating over.

Other important natural sites are on Ministry of Defence land, nine of which have been singled out as being of particular conservation value (GONHS 1990). In 1987 proposals were presented to the MOD for the fencing of Jacob's Ladder as a nature reserve, and it was subsequently incorporated into a conservation area (Cortes 1978). As of October 1991 discussions were underway between Government departments and the GONHS leading to the protection of a series of sites of importance. Proposed areas for nature conservation include: the Upper Rock—southern terraces and Windmill Hill Flats, Upper Rock—east slopes; Governor's Beach and Sea Caves, and also southern coastal areas of Europa Point Foreshore (GONHS 1990; Cortes *in litt*). The Government of Gibraltar is undertaking a study with a view to implementing a management plan for the caves of Gibraltar.

A marine reserve was declared with effect from 1 January 1996, covering all of Gibraltar's territorial waters. Capture of wildlife is prohibited, including fishing with nets and raking of the seabed, under the principle Ordinance (Nature Protection Ordinance 1991). Due to technical difficulties the full effect of the designating Regulation has not yet been brought to bear.

Crown Estate property and Ministry of Defence land continues to be under the jurisdiction of the British Army and the Royal Navy, although a proportion of Ministry of Defence (MOD) land is gradually being handed over to the care of the Government of Gibraltar. Expenditure in 1990 for nature and landscape conservation (including public gardens) amounted to approximately £0.3 million (Cortes *in litt*).

In the 1980s the Windmill Hill area on MOD land had been set up as the Windmill Hill Conservation Area, followed by the addition of

Jacob's Ladder in 1987. It is managed by the MOD Conservation Group, and has representatives from the Gibraltar Ornithological and Natural History Society (GONHS), the British Army and the Royal Navy. The aims of this body are to co-ordinate improvements to the natural environment of the above-mentioned areas (GONHS 1990).

Habitats of major significance

It is likely that the original vegetation of Gibraltar was woodland that has been destroyed over the centuries by tree felling and extensive goat grazing. Since the removal of goats early this century, maquis (mattoral) has become the dominant vegetation type. Cliff communities are also important. There are nearly 500 species of flowering plant, and the existing semi-natural vegetation is dominated by a maquis scrub of olive *Olea europea*, pistachio *Pistacia lentiscus*, *Osyris quadripartita* (Santalaceae) and the buckthorn *Rhamnus alaternus*. There are also areas of pseudo-steppe and garigue. A rich flora is found particularly on the inaccessible cliffs and ledges of the eastern slopes (for species lists and details see Gibraltar Environmental Group 1980).

Europa Point foreshore is the only limestone shoreline on the northern shore of the Strait of Gibraltar. Its characteristic plants therefore form a unique community totally different from the Spanish shore across the bay. It is an important site for the endemic Gibraltar sea lavender *Limonium emarginatum*, and other rare plants and land snails. The shoreline and its offshore reef are important for marine life.

The southern shoreline of Gibraltar, from the South Mole to Europa Point, forms an exposed rocky shore which is rich in littoral and sublittoral species. The south-western shore, along with the southern coast to the southern end of Sandy Bay (which includes Governor's Beach) is proposed as a marine nature reserve. Governor's Beach is a nesting site for the threatened western Mediterranean shag *Phalacrocorax aristotelis desmarestii*.

Relicts of seagrass meadows occur along the northern periphery of the Bay of Gibraltar, covering the area between the La Linea pier, around the airfield and again in the northern two-thirds of the harbour. Reclamation work in the harbour threatens the Bay's remaining seagrass meadows (Shaw 1993).

Species of major significance

Biodiversity assessment

Gibraltar's biodiversity has been recorded in considerable detail. Species lists for birds, reptiles, terrestrial molluscs and plants have been published and updated by GONHS, largely in its journal *Alectoris* (Cortes *et al.* 1980; Cortes 1983; Linares 1993; Menez 1993). The avifauna of Gibraltar and the Strait has been comprehensively reviewed by Finlayson (1992). Major review work on the botany of Gibraltar was presented at the First Conference on Research and Conservation of the Flora of Gibraltar and the Campo de Gibraltar in September 1993, and published in 1994 in *Almoraima* (e.g. Cortes 1994a, b; Linares 1996; Linares *et al.* 1996). Marine species lists have similarly been prepared (GONHS 1994b).

Plants

The flora of Gibraltar consists of about 600 plant species including several predominantly North African species which have their only European presence on Gibraltar. Examples include Gibraltar candytuft *Iberis gibraltatica* and Gibraltar mouse-ear *Cerastium gibraltarium* both of which occur on rocky outcrops. Gibraltar thyme *Thymus willdenowii* is very common locally on rocky outcrops and very rarely, if at all, found elsewhere.

The Gibraltar campion *Silene tomentosa* was thought to be extinct until its re-discovery in 1994 on rocky outcrops (three plants left in the wild). It is currently the subject of a propagation and re-introduction programme by the Gibraltar Botanic Gardens and the Royal Botanic Gardens, Kew. The campion was thought to be endemic to Gibraltar

until its recent discovery in north-west Africa (Valdés & Parra 1999). Other endemic plant species include:

Gibraltar sea lavender *Limonium emarginatum* (VU): an endemic species that occurs on cliffs and rocky shorelines.

Gibraltar restharrow *Ononis natrix ramosissima* (VU): an endemic subspecies found on rocky outcrops.

Gibraltar saxifrage *Saxifraga globulifera gibraltatica* (VU): an endemic sub-species found on rocky outcrops.

Invertebrates

A number of land snails and marine nudibranchs (sea slugs) are endemic (Garcia-Gomez 1983; GONHS 1994b).

Amphibian and Reptiles

Marine turtles

No marine turtle nesting occurs in Gibraltar. Loggerhead turtles *Caretta caretta* (EN) and green turtles *Chelonia mydas* (EN) occur in the surrounding waters; vagrant hawksbill turtles *Eretmochelys imbricata* (CR) and leatherback turtles *Dermochelys coriacea* (EN) occasionally enter the Mediterranean through the Strait of Gibraltar.

Birds

Over 300 bird species have been recorded on the Rock (GONHS 1990), although the majority of them are migrants or rare visitors. Some populations of these migrants utilise the Rock as a migratory stopover, but the importance of the Rock to each species or population is not known and under investigation (Finlayson 1992). Gibraltar is renowned for its spectacular spring and autumn passage of migrating raptors that take advantage of the narrow sea crossing between western Europe and north Africa. Up to 190,000 raptors of 15

species may pass over the rock in a single season with numbers dominated by honey buzzards *Pernis apivorus* and black kites *Milvus migrans*. The most important bird species resident on the Rock are western Mediterranean shag *Phalacrocorax aristotelis desmarestii* and Barbary partridge *Alectoris barbara*, Gibraltar is the only site on mainland Europe for this partridge species.

Important bird areas in Europe (Grimmett & Jones 1989), lists two sites in Gibraltar, one of 600 ha on the Rock of Gibraltar and the other as part of the Strait, including land and water under the jurisdiction of the United Kingdom, Spain and Morocco.

Mammals

Gibraltar is renowned for its Barbary macaques *Macaca sylvanus* (VU), a long-established introduction (Drucker 1978). The macaque population now exceeds the carrying capacity of the Upper Rock and will need to be managed.

Four species of bat are recorded from Gibraltar: greater mouse-eared bat *Myotis myotis*, Schreiber's bent-winged bat *Miniopterus schreiberi*, the pipistrelle *Pipistrellus pipistrellus* and the free-tailed bat *Tadarida teniotis*. All bats and their roost sites are protected under the Nature Protection Ordinance 1991.

The sei whale, *Balaenoptera borealis* (EN) is occasionally recorded and is a vagrant from the Atlantic. Fin whales *Balaenoptera physalus* (EN), humpback whales *Megaptera novaeangliae* (VU), northern right whales *Eubalaena glacialis* (EN) and sperm whales *Physeter catodon* (VU) occasionally pass through the Strait of Gibraltar. In addition there is a resident population of common dolphin *Delphinus delphis* and striped dolphin *Stenella coeruleoalba* (LRcd), both of which calve in Gibraltar Bay during summer. A number of other species have been recorded (Shaw 1998).

Species protection

- Nature Protection Ordinance 1991: under this Ordinance all wild birds are protected, together with their nests and eggs. A list of other protected animal species forms Schedule 1 of the Ordinance. Schedule 2 provides a list of plant species that are not offered protection by the Ordinance. All other wild plants are protected.

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Key names and addresses

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The Gibraltar Museum, PO Box 939, Gibraltar. Tel: 74289; fax: 79158.

The Gibraltar Ornithological and Natural History Society (GONHS), Gibraltar Natural History Field Centre, Jew's Gate, Upper Rock, Gibraltar.
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Ministry of the Environment, Main Office, City Hall, John Mackintosh Square, Gibraltar.
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Environmental Health Section, Town Range, Gibraltar. Tel: 70620; fax: 74119.

Nature Conservancy Council and Environment and Heritage Council, c/o Ministry of the Environment.

Sights Management Ltd (managers of the Upper Rock Nature Reserve), Napier of Magdala Battery, Rosia Road, Gibraltar. Tel: 42400.

Conservation agencies

The Gibraltar Nature Conservancy Council advises the Governor on conservation matters relating specifically to the Nature Protection Ordinance 1991, and more generally in relation to wild species and the protection of areas of special interest.

The Gibraltar Ornithological and Natural History Society (GONHS) works closely with the Government of Gibraltar in promoting and implementing nature conservation. The GONHS has its origins in the Gibraltar Ornithological Society (GOS) founded in 1978. Amongst others, its aims are to safeguard all natural assets, to educate and to work for the improvement and implementation of wildlife and environmental protection. It now has 200 members and includes the former Gibraltar Environmental Group (GEG) which was formed in 1978 with express concerns for the conservation of the environment on the Rock (Gibraltar Environment Group 1980). The GONHS runs a field centre within the designated protected area, and there is an active museum based not far away in the main town of Gibraltar which maintains an extensive natural history collection (GONHS 1991). The field station, which was established in 1990–1991, is manned by volunteers, and runs on a budget of £2,000 per year (Cortes 1991). GONHS additionally runs Bruce's Farm Biological Station on Upper Rock. The Gibraltar Trust for Natural History and the Helping Hand Trust are charitable trusts allied to GONHS contracted by the Government of Gibraltar to advise and contribute towards the management of the Upper Rock Nature Reserve and the Marine Reserve respectively.

The newly formed Gibraltar Botanical Gardens at the Alameda intends to undertake extensive plant conservation and threatened plants propagation programmes (Cortes pers. comm.). Other interested bodies include the Gibraltar Heritage Trust with interests in preservation of the valuable cultural heritage.

Bibliography

- Cortes, J.E. 1983. A checklist of the current herpetofauna of Gibraltar. *Alectoris*, 5: 22–23.
- Cortes, J.E. 1984. *The ecology of lacertid lizards at Gibraltar*. DPhil. Thesis, Oxford University.
- Cortes, J.E. 1994a. The history of the vegetation of Gibraltar. *Almoraima*, 11: 39–50.
- Cortes, J.E. 1994b. The exotic flora of Gibraltar. *Almoraima*, 11: 155–169.
- Cortes, J.E. 1996. Windmill Hill Flats: a good view of migration across the Straits of Gibraltar. *Almoraima*, 15: 163–184.
- Cortes, J.E., & Linares, L. 1993. The Gibraltar campion *Silene tomentosa* Otth.: probable extinction of a Gibraltar endemic. *Alectoris*, 8: 64–65.
- Cortes, J.E., Finlayson, J.C., Garcia, E.F.J., & Mosquera, M.A.J. 1980. *The birds of Gibraltar*. Gibraltar, Gibraltar Books.
- Davis, S.D., Droop, S.J.M., Gregerson, P., Henson, L., Leon, C.J., Lamlein Villa-Lobos, J., Synge, H., & Zantovska, J. 1986. *Plants in danger: what do we know?* Gland, IUCN.
- Drucker, G.R. 1978. *Population dynamics of the Barbary macaque in Gibraltar*. London, Royal Holloway College, University of London. Unpublished report.
- Fa, J.E. 1987. A park for the Barbary macaques of Gibraltar? *Oryx*, 21(4): 243–245.
- Finlayson, J.C. 1979. Movements of the fan-tailed warbler *Cisticola juncidis* at Gibraltar. *Ibis*, 121: 487–489.
- Finlayson, J.C. 1980. The recurrence in winter quarters at Gibraltar of some scrub passerines. *Ringing and Migration*, 3: 32–34.
- Finlayson, J.C. 1992. *Birds of the Strait of Gibraltar*. London, Poyser.
- Finlayson, J.C., & Cortes, J.E. 1987. The birds of the Straits of Gibraltar its waters and northern shore. *Alectoris*, 6: 1–74.
- Finlayson, J.C., Garcia, E.F.J., Mosquera, M.A.J., & Bourne, W.R.P. 1976. Raptor migration across the Straits of Gibraltar. *British Birds*, 69: 77–87.
- Garcia-Gomez, J.C. 1983. Moluscos opisobranquios del estrecho de Algeciras. *Iberus*, 3: 41–46.
- Garcia-Gomez, J.C. 1987. Adiciones a la fauna de opistobranchios del estrecho de Gibraltar (sur de Espana). *Iberus*, 7: 197–209.
- Garcia-Gomez, J.C., & Cervera, J.L. 1989. A new species of the aeolid genus *Flabellina* (Nudibranchia) from the Strait of Gibraltar. *Journal of Molluscan Studies*, 55: 411–417.
- Gibraltar Environmental Group. 1980. *Environmental*

conservation in Gibraltar. Report prepared by Bensusan, J., Cortes, J.E., Fa, J.E., Finlayson, J.C. & Mosquera, M.A.J. Gibraltar, Gibraltar Environmental Group.

GONHS. 1990. *Custodians of wilderness, the wildlife importance of MOD land in Gibraltar*. Unpublished report.

GONHS. 1991. *The southern coasts: proposal for a marine nature reserve*. Gibraltar, GONHS.

GONHS. 1994a. *The Habitats Directive and Gibraltar. Implementation in Gibraltar of Council Directive on the Conservation of Natural Habitats and of Wild Flora and Fauna*. Gibraltar, GONHS. Unpublished report.

GONHS. 1994b. *The Biodiversity Initiative: Gibraltar. A case for maintaining diversity*. Unpublished report.

Grimmett, R.F.A., & Jones, T.A. 1989. *Important bird areas in Europe*. Cambridge, International Council for Bird Preservation.

Hunter, B., ed. 1991. *The statesman's year book 1991-92*. London & Basingstoke, Macmillan Press Ltd.

Linares, L. 1993. Checklist of the Gibraltar flora. *Alectoris*, 8: 30-49.

Linares, L. 1996. The succession of vegetation on the Upper Rock, Gibraltar. *Almoraima*, 15: 93-98.

Linares, L., Harper, A. & Cortes, J.E. 1996. *The flowers of Gibraltar: Gibraltar*, Wildlife Gibraltar.

Martin, R.D., & Segesser, F. von 1996. Fragmentation of natural populations, genetics and

conservation biology. *Almoraima*, 15: 311-326.

Menez, A. 1993. A systematic list of the Gibraltar non-marine mollusca. *Alectoris*, 8: 50-55.

Ocana, R. 1997. *An investigation into the ecology and life history dynamics of the pulmonate limpet Siphonaria pectinata (Linnaeus) at Gibraltar*. PhD Thesis, King's College, University of London.

Oldfield, S. 1987. *Fragments of paradise: a guide for conservation in the UK dependent territories*. Oxford, British Association of Nature Conservationists.

Santana, A. 1996. La conservacion de los mamiferos en Gibraltar. *Almoraima*, 15: 191-196.

Shaw, E. 1992. Gibraltar's sea grass meadows. *Gibraltar Nature News*, 43.

Shaw, E. 1993. The sea grass meadows of Gibraltar. *Alectoris*, 8: 66-69.

Shaw, E. 1996. The Gibraltar artificial reef: habitat manipulation. *Almoraima*, 13: 197-204.

Shaw E. 1998. Dolphins in the Bay of Gibraltar. *Almoraima*, 19: 161-171.

Valdés, B., & Parra, R. 1999. Difficulties in determining the distribution of species that occur in SW Europe. *Acta Botanica Fennica* 162: 111-117.