

**ISLAND BIODIVERSITY PRIORITIES AND ACTION IN THE UK**  
**THE BERN CHARTER ON THE CONSERVATION AND SUSTAINABLE USE OF**  
**BIOLOGICAL DIVERSITY IN EUROPEAN ISLANDS**  
**CONTRIBUTIONS TO THE CBD REVIEW ON ITS ISLAND BIODIVERSITY**  
**PROGRAMME OF WORK (IBPoW)**

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## **1 BIODIVERSITY ON THE UK'S ISLANDS**

The mainland of the United Kingdom is an island itself, although current UK biodiversity legislation and policy does not have a specific focus on islands; more it reflects the six main work programmes of the CBD. The UK also includes a large number of smaller islands (over 700 vegetated islands and around 70 populated islands), and there are four main archipelagos (Shetland, Orkney, the Outer and Inner Hebrides) and a number of other island groups across the UK, although the great majority of the islands are within Scotland. There are a large number of initiatives that work on the islands of the UK.

A significant number of the UK's 257 Special Protection Areas (SPAs) are located on offshore islands<sup>1</sup>, however listings are currently by site and country – the 'island' classification is not included.

### **1.1. Internationally-important populations**

A review of UK SPAs<sup>2</sup> highlights that the UK is of major international importance for several groups of birds. These include a number of groups that are especially reliant on the UK's islands: breeding seabirds, breeding and wintering waders and passage and wintering wildfowl.

UK is one of the richest areas in the world for seabirds. Just under 8 million seabirds of 25 species breed in Britain and Ireland, including 90% of the world's Manx shearwaters (*Puffinus puffinus*), 68% of Gannets (*Morus bassanus*) and 60% of Great skuas (*Stercorarius skua*), as well as almost all of Europe's Leach's petrels (*Oceanodroma leucorhoa*). The UK SPA network holds over 4,946,000 breeding seabirds, and protection has recently been extended into inshore waters around the breeding colonies in many cases. 31 of the UK SPAs are on offshore islands. These protect some 3,788,000 breeding seabirds - a substantial proportion of all the seabirds breeding in the north-east Atlantic and North Sea areas.

The Scottish islands hold some of the densest populations of breeding waders in Europe. 30% of the biogeographic population of Southern dunlin (*Calidris alpina schinzii*) breeds on the machairs and peatlands of the Outer Hebrides. There are important breeding populations of nine other species, including Ringed plover (*Charadrius hiaticula*) Redshank (*Tringa totanus*) and Snipe (*Gallinago gallinago*) on

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<sup>1</sup> <http://www.jncc.gov.uk/page-2598>

<sup>2</sup> <http://www.jncc.gov.uk/page-1415>

the grasslands and Golden plover (*Pluvialis apricaria*) and Greenshank (*Tringa nebularia*) on the peatlands. Internationally important wintering populations of Curlew (*Numenius arquata*), Sanderling (*Calidris alba*), Turnstone (*Arenaria interpres*) and Purple sandpiper (*Calidris maritima*) occur on the islands rocky and sandy shores. The habitat protection provided for these birds is a major contribution to their international conservation.

The UK's islands hold around 200,000 Grey seals (*Halichoerus grypus*); 85% of Europe's and 45% of the world population (of which 90% are in Scotland). There are also 46,000 Harbour seals (*Phoca vitulina*); representing 30% of Europe's population (of which 85% breed in Scotland).

## 1.2 Grassland systems and species

Grassland systems and the species associated with them are also an important element of island biodiversity in the UK. Much island grassland is managed traditionally with little modern agricultural intensification, and hence it has a high wildlife value. Machair; a shell-enriched dune grassland, found extensively in western Scotland, is a classic UK habitat holding a wide range of threatened flora and fauna. Most of the UK's Corncrake (*Crex crex*) population occurs on the Scottish islands, in the machair grassland. Breeding numbers have risen from 480 in 1993 to almost 1300 in 2008; due to direct intervention activities influencing island farming (crofting) management. It is likely that Corncrakes will continue to be largely restricted to Scottish islands, but their recovery is a success story.

Machair also supports endangered insects such as the Great yellow bumble bee (*Bombus distinguendus*); which is now restricted to the western and northern islands and the north Scottish coast. The slender Scotch burnet moth (*Zygaena loti scotica*) is found only on Mull on grazed coastal turf, though the nominate subspecies of this moth is found across mainland Europe.

Another widespread European bird species, the Chough (*Pyrrhocorax pyrrhocorax*), is largely restricted to island grasslands in the UK, and requires special habitat management for its conservation.

## 1.3 Endemism

There is relatively little UK island endemism, but *Primula scotica* is a coastal heath and grassland species restricted to northern Scotland and Orkney; the Shetland mouse ear (*Cerastium nigrescens*) is endemic to north Shetland, and the Lundy cabbage (*Coincya wrightii*) is endemic to Lundy Island off south-west England, and also hosts an endemic flea beetle. Maintenance of grassland through appropriate grazing levels (and in the case of the Lundy cabbage, control of Rhododendron (*R. ponticum*)) are vital for these species.

## 2 MANAGEMENT ISSUES THAT AFFECT BIODIVERSITY IN UK ISLANDS

There are a number of important management issues affecting island biodiversity in the UK.

## 2.1 Farming management

The Scottish islands hold important populations of both breeding and wintering geese. For much of the twentieth century, breeding Greylag geese (*Anser anser*) were confined to the Outer Hebrides, and the population declined to around 50 breeding pairs. A range of protection measures led to their recovery and there are now around 40,000 birds spread across the western and northern Scottish islands. These are seen as causing conflict with farming management and may have effects on traditional farming which is beneficial to a range of other species.

In winter, the Scottish islands host large populations of Greenland white-fronted geese (*Anser albifrons flavirostris*) and Greenland barnacle geese (*Branta leucopsis*); around half of the world population of each species occur here. Almost all the Icelandic greylag goose population winters in Scotland; 80% (80,000) now winter on Orkney, having vacated the central Scotland mainland in the last decade. These also cause management conflict with farming interests, and several local goose management schemes have been in place on Scottish islands for the last ten years. The 2010 Scottish Government Goose Management Review concluded that recent goose management policy and in particular the system of Local Goose Management Schemes, had been successful in improving the fortunes of most goose species and reducing the conflicts with agriculture. The exception to this is the populations of Greenland White-fronted goose, whose populations are still declining. The Review also concluded that there was a lack of equity in how agricultural managers who were all facing pressure from expanding goose populations were treated. This is particularly notable in Orkney & Caithness where populations of Grey geese are expanding rapidly and goose schemes are largely unavailable. The Review also noted the high costs which were unlikely to be sustainable with public sector cuts.

The Government has now committed to developing revised Schemes with a reduced budget, which can focus on enhanced protection for species of conservation concern (Greenland White-fronts), and supports a greater emphasis on adaptive management, where data and management controls allow effective monitoring of hunting effort. There was a general steer that local costs could be reduced with minimum impact on conservation targets by reducing the goose scaring and modifying monitoring efforts, within agreed limits. A decision has been made to enter into Interim Goose Management Schemes for the year 2011/12, which will require Local Schemes to reduce costs, following the general approach set out by the Scottish Government. Work will begin on tailoring the Schemes more significantly to address the revised policy direction during Summer and Autumn 2011. It is also recognised, however, that these goose populations also provide major tourism income from both birdwatching and shooting.

On a number of the UK's islands, there is overgrazing from deer and sheep, severely impacting habitat. As a consequence of difficulties in managing sheep on remote islands, a lack of grazing is also an issue on some islands. There are examples of how a lack of grazing has given rise to vegetation that is unsuitable habitat for threatened species: e.g. for Barnacle geese (*B. leucopsis*) which depend on short-cropped turf.

White-tailed sea eagles (*Haliaeetus albicilla*) have been reintroduced to Scotland over last 35 years (with grateful thanks to Norway for providing the birds). There are now around 52 breeding territories, mostly on Scottish islands. These are providing major tourism income to the islands of Mull and Skye. In the west there is however, some perceived conflict with sheep farming, which continues to require efforts to resolve, though two recent scientific studies suggest there is little predation of lambs. A third reintroduction on the east coast of Scotland is progressing well and is into its fifth year; the birds are using east coast seabird islands amongst other areas.

## 2.2 Marine renewables

The next substantial issue is likely to be the development of marine renewables around the UK coasts. Major developments of offshore wind, tidal and wave power devices are proposed. The latter two are likely to be largely around the Scottish islands where the largest natural wave and tidal resources occur. It will be vital to assess what effects these developments may have on the marine environment and to develop strategies and methods to minimise these effects.

## 2.3 Genetic conservation

Islands have an important role to play in genetic conservation; several Scottish islands hold endemic subspecies of mice (e.g. *Apodemus sylvaticus hirtensis* on St Kilda) and birds (e.g. *Troglodytes troglodytes zetlandicus* on Shetland). Some islands act as genetic refugia for widespread species. Several Scottish islands hold genetically-pure populations of Red deer (*Cervus elaphus*). On the mainland, hybridisation with Sika deer (*C. nippon*) is widespread, and legislation is now introduced to protect the island deer populations' genetic integrity. There has been a major study of Red deer population genetics and demography on Rum for thirty years.

Machair management on the Scottish islands is partly-dependent on traditional local races of cereals, such as Bere barley (*Hordeum vulgare*) and Black oats (*Avena strigosa*); this represents important genetic conservation of farmed crop species.

In England, the Isle of Wight and in Wales, Anglesey act as refugia for populations of Red squirrels (*Sciurus vulgaris*) threatened elsewhere by the spread of Grey squirrels (*Sciurus carolinensis*) and the pox virus they carry.

## 2.4 Invasive non-native species

Invasive non-native species are a critical issue for the UK's island biodiversity, as is the case across much of the world. On the Outer Hebrides, Hedgehogs (*Erinaceus europaeus*), which were introduced in the 1970s by misguided individuals wishing to control slugs (*Arion* spp) in gardens, are having major effects on the internationally-important breeding wader populations, by their predation of wader eggs. A major removal programme is under way, and Hedgehogs have now been almost cleared from North Uist<sup>3</sup>. The American mink (*Mustela vison*) also causes serious problems

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<sup>3</sup> <http://www.snh.gov.uk/land-and-sea/managing-wildlife/uist-wader-project/>

to ground-nesting terns, gulls and waders, and a major removal programme<sup>4</sup> is under way on Harris and Lewis.

The most widespread non-natives issue is that of rats on islands with important seabird populations. These are mostly Brown rats (*Rattus norvegicus*) but there were also Black rats (*Rattus rattus*) on Lundy Island in south west England. Predation of seabird eggs and chicks has been a widespread problem. Over the last 50 years, twelve islands around the UK have had rat eradication programmes. There have been some excellent results in terms of seabird responses: Manx shearwaters (*P. puffinus*) numbers have trebled on Ramsey (Wales) and Lundy (S-W England) in the 5-10 years since rat eradication.

The rat eradication projects have become increasingly large and ambitious. The project on Canna (off west Scotland) has been the largest to date. Canna is a 1300 ha, farmed and populated island, owned by the National Trust for Scotland. A grid of thousands of poison bait tubes was set in 2005-06. The project needed to remove and maintain a population of Canna fieldmice (*Apodemus sylvaticus*), which were held and bred by the Zoological Society of Scotland for over twelve months, and reintroduced after the poisoning process was complete. The project was apparently effective but NTS continues a monitoring programme, of both the rat absence and seabird population responses.

Scottish Natural Heritage is also trialling Brown rat control on Rum; an 11,000 ha island, which holds 61000 pairs, 25% of the world's Manx shearwaters (*P. puffinus*). These nest on mountain-top slopes. This project is considering whether all-island control is necessary and is being implemented by The Food and Environment Research Agency (FERA). It aims to investigate the impact of predation by introduced rats on breeding success of Manx shearwaters on the island of Rum. Breeding success of Manx shearwaters was compared in areas where rats were removed by the use of rodenticides and in untreated control areas. Results from this trial will help to determine what future action will be taken to safeguard the future of the breeding Manx shearwater population on Rum.

Rat activity was monitored at key stages to evaluate the success of the rat control strategy used in the treated area, detect any subsequent reinvasion or population recovery, and monitor rodent activity levels at the control sites. Two main methods were used to monitor rat activity (tracking plates and chew sticks). The data indicate that the density of rats at the treatment site may have been reduced by the rodenticide treatment in May, but showed signs of partial recovery or reinvasion by late August. The density of rats was lower than expected at the study sites, and may be an indication of inter-year variation. The second phase of the rat control trial will begin in June 2011 when last year's treatment area will become a control area and one of last year's control areas will become the treatment area.

Quarantine vigilance is also needed in regards of rat invasions. A recent case of a shipwrecked Scottish fishing vessel on St Kilda brought the threat of rat introduction to the most important seabird islands in the UK. This resulted in a programme of rat

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<sup>4</sup> <http://www.snh.gov.uk/land-and-sea/managing-wildlife/hebridean-mink-project/>

monitoring work, both after the wreck and during the ship-breaking operations. A similar protocol is needed for all rat-free seabird islands.

New Scottish legislation, introduced in 2010, increases the protection of islands from introductions of non-native species, or species whose natural range within Scotland does not include island areas. It is now illegal, for example, to introduce mammals to islands where they are not native.

### **3 BIODIVERSITY IN THE UK CROWN DEPENDENCIES**

The UK also has three Crown Dependencies; Jersey, Guernsey (and their archipelago of smaller islands) and the Isle of Man. These have many biogeographical similarities with mainland UK. The Channel Islands are notable for holding a range of species whose range does not extend to mainland Britain; and insular forms of some species, such as the Guernsey form of the Common vole (*Microtus arvalis*) which also occurs on Orkney, its sole area in the UK. The Isle of Man holds important populations of breeding birds (e.g. seabirds, Chough and Hen harrier (*Circus cyaneus*); similar to some Scottish islands, and they hold a range of marine and terrestrial habitats which are significant in a UK and regional context.

### **4 WORKING PRINCIPLES**

A number of island biodiversity issues are very similar across islands, regardless of species, habitats, or geographical location. One of the key lessons learnt from experiences on inhabited UK islands is that the local people (local ownership and local involvement) are pivotal to the success of any conservation initiative. It is also important that conservation initiatives are appropriately scaled to the size of the populations of the islands to ensure long term sustainability and continuity.

Information-sharing across islands is important. For example, access to good quality scientific data about eradication or control of non-native invasive species on small islands (including costs, benefits, probability of success and how to maximise this) will help make the case for island-specific proposed actions.

### **5 CHARTER ON THE CONSERVATION AND SUSTAINABLE USE OF BIOLOGICAL DIVERSITY IN EUROPEAN ISLANDS**

Following the adoption by the Convention on Biological Diversity (CBD), in March 2006, of a Programme of Work on Island Biodiversity (and noting that the in-depth review of the Programme of Work will take place during the 11th meeting of the Conference of the Parties of the CBD in October 2012), the Bern Convention Expert Group on European Island Biodiversity has met three times since 2009 and has been instrumental in the drafting of the above Charter. The Charter focuses on those aspects of biodiversity that are unique, especially prominent and relevant on European islands compared to the continental mainland. The Charter, which will be submitted for adoption at the next Bern Convention Standing Committee meeting in November 2011, provides a framework under which the participating countries can work towards the objectives of its Programme of Work. The latest draft, open to some revision, can be found via the link below.

<https://wcd.coe.int/wcd/com.instranet.InstraServlet?command=com.instranet.CmdBlobGet&InstranetImage=1846654&SecMode=1&DocId=1736780&Usage=2>

Bern Convention member states, including the UK, are asked to take note of the Charter, applying it in the framework of their national policies and measures; and in addition promote the Charter towards sub-national and regional authorities.

## **6. PRIORITIES FOR CONSERVING BIODIVERSITY ON EUROPEAN ISLANDS**

The Charter establishes the principles on which strategy and actions should be based. This paper, which is still subject to further possible change, develops principles for an Action Plan to implement the Charter, can be found via the link below:

<https://wcd.coe.int/wcd/com.instranet.InstraServlet?command=com.instranet.CmdBlobGet&InstranetImage=1865005&SecMode=1&DocId=1741896&Usage=2>

The paper should be read in conjunction with the draft Charter: it explores the detail that underpins the Charter principles and the actions that flow from this. Like the Charter, it focuses on those aspects of biodiversity that are unique or especially prominent on European islands compared to the continental mainland. It reviews the nature and extent of these features and considers how these are specifically impacted by current threats to island ecosystems. From this it identifies island priorities and actions which might therefore require special attention, not otherwise explicit in Europe-wide biodiversity legislation or current activities.

The UK has played a substantial role in the development of the Charter and Action Plan Paper and will continue to work with European colleagues to develop the implementation phase of the process.