

CONSULTATION DRAFT - MARCH 2001

The Natural Heritage of

THE WESTERN ISLES

**WHAT CAN YOU DO TO HELP
SHAPE ITS FUTURE?**

**Natural Heritage Zones
Local Prospectus for Zone 3**



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Introduction and User's Guide

This consultation document puts forward for your comment a vision for the natural heritage of **The Western Isles Zone** in the year 2025. It describes the natural heritage as it is today; how it has come to be; how and why it is changing, and; sets out objectives for achieving the proposed vision through **sustainable development**.

The document comprises six parts:

Summary: a summary of the main environmental, social and economic features of the area and key issues that affect the natural heritage.

Description: what the natural heritage is like today.

Key influences on the natural heritage: how the natural heritage is changing, and key factors influencing those changes.

Vision: what the natural heritage could look like in 25 years' time based on sustainable stewardship of natural resources.

Objectives: what needs to be achieved in order to work towards the vision - priorities for the natural heritage with *Possible Actions*.

Key Stakeholders table: local and national partners - agencies, authorities, industry bodies, and organisations – whose role it would be to contribute to the *Actions* identified against each *Objective*.

The description and analysis of change provide the rationale for the vision. The objectives aim to close any gap between current trends and the vision, and the vision is therefore dependent on the objectives being achieved.

The document aims to present an integrated picture of the natural heritage and the factors influencing it – and the consultation seeks broad agreement on this and the actions required to work towards the vision. It is not an action plan, but a basis for stakeholders to agree action plans to pursue the objectives, preferably through existing, or rationalised, plans and strategies. The key stakeholders are all those with responsibility for the natural heritage and its sustainable use.

Natural Heritage Zones – further information

To arrive at this vision SNH has developed a framework called the **Natural Heritage Zones Programme**. The Programme covers the whole of Scotland, dividing it into 21 zones, each containing broadly similar landscapes and wildlife. This framework, referenced to the environment, allows us to identify the key issues for the natural heritage in different parts of Scotland, recognising and working with the great diversity in Scotland's natural heritage.

The Natural Heritage Zones Programme also includes **National Prospectuses** which set out long term national objectives for six settings: mountain and moorland, forest and woodland, farmland, freshwater, coast and sea, and settlements. Many national objectives are of course relevant to local priority issues raised in this **Local Prospectus**. These Prospectuses accompanied by six **National Assessments**, which provide more detailed supporting information and data. These documents are available on the SNH website at www.snh.org.uk, or on request from SNH.

Figure 1: The 21 NHZs highlighting The Western Isles

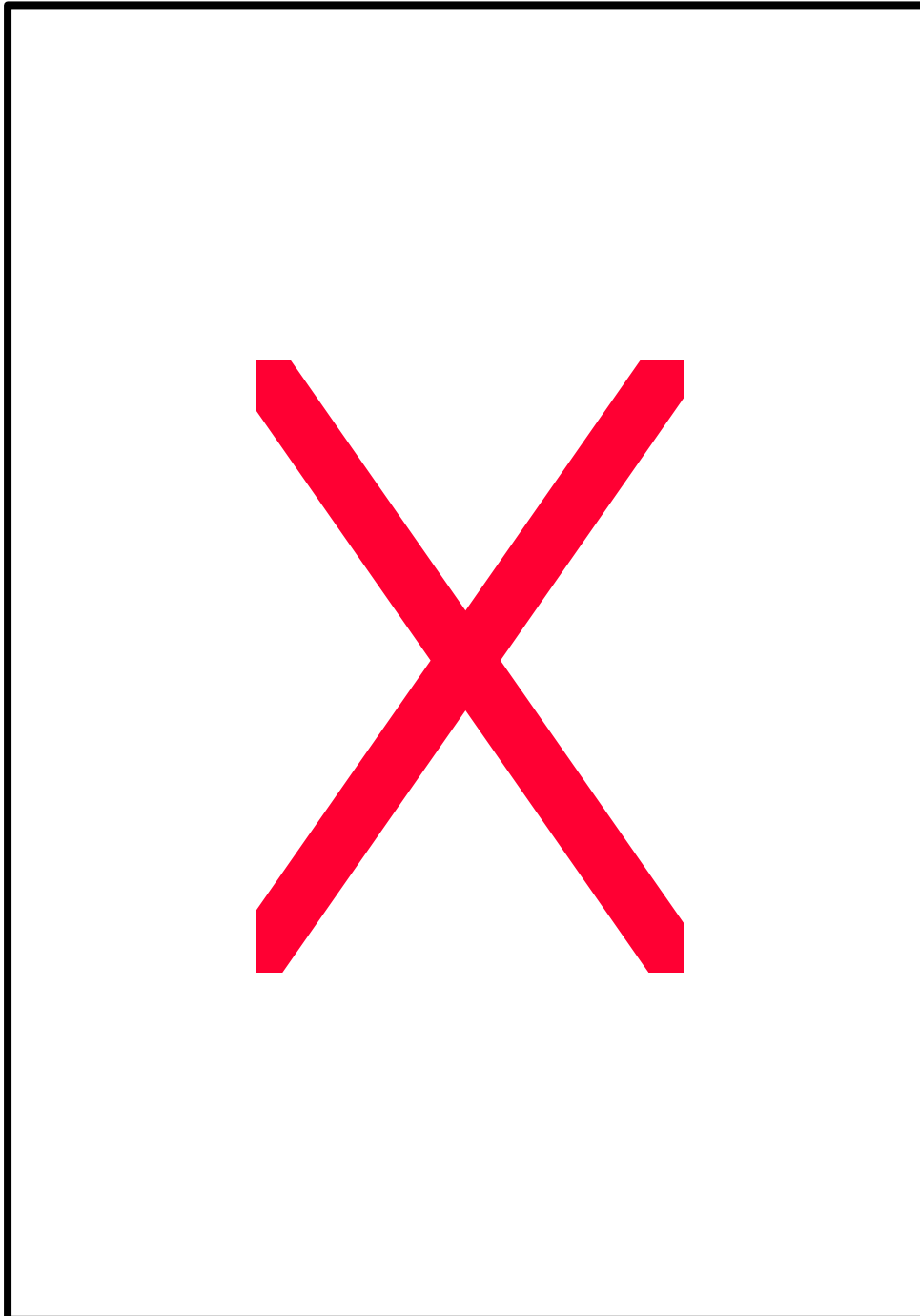
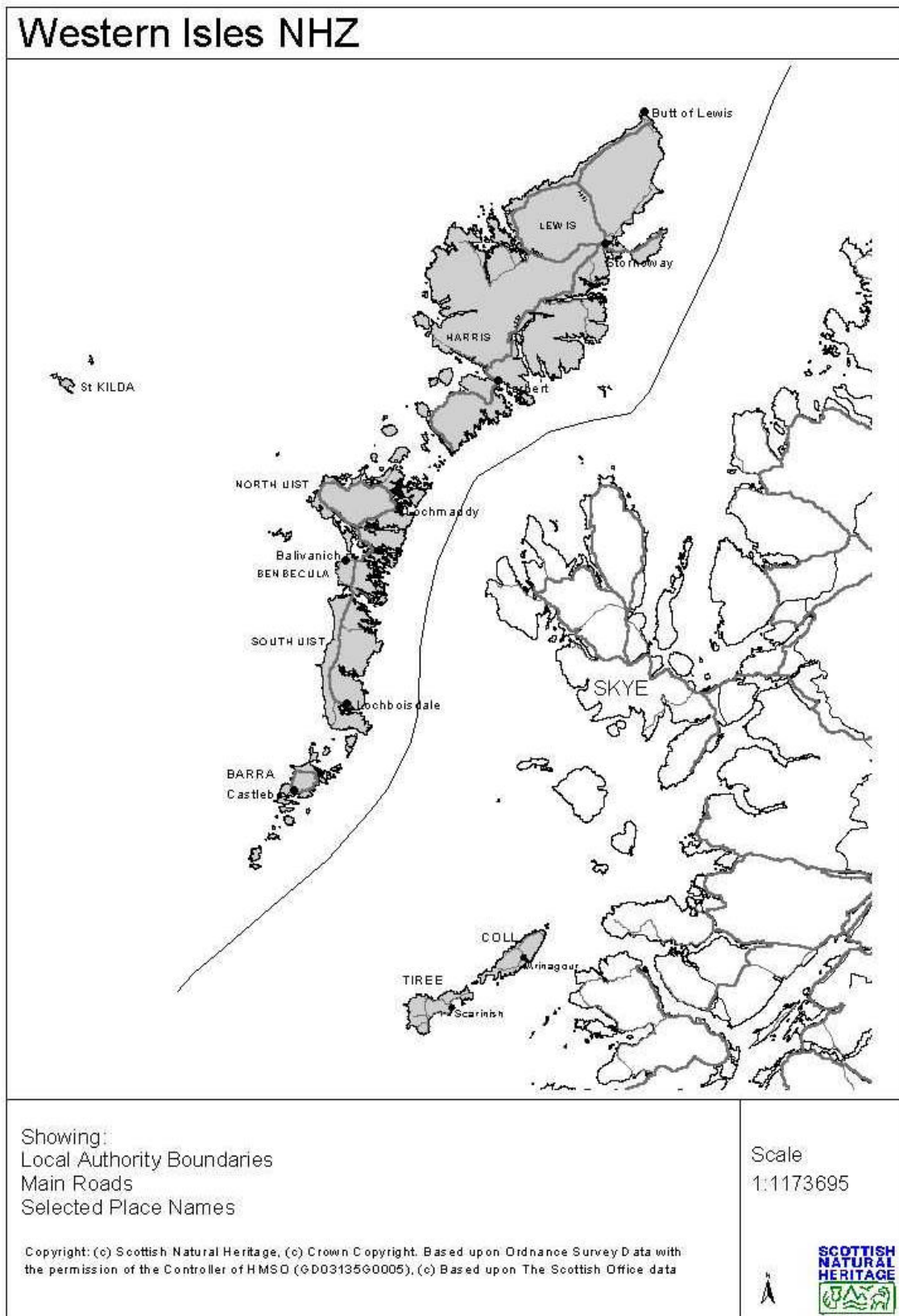


Figure 2: The Western Isles NHZ



Summary

1. The Western Isles Zone (Zone 3) stretches from Coll and Tiree in the Inner Hebrides to Sule Stack and Sule Skerry off Orkney, and includes all of the Outer Hebridean islands which make up the Western Isles chain. These islands are subject to oceanic influences, and are wet, windswept, and generally treeless (apart from small pockets of native scrub and forestry plantations). The islands are all extremely varied in character from the extensive moorland and hills of Lewis and Harris, to the machair of the Uists, Barra, Coll and Tiree, and the seabird cliffs of the offshore islands. The variety of habitats, influenced by climate, geology and agricultural activities supports large numbers of birds and a rich diversity of plants, all of which result in an outstanding natural heritage and landscape.
2. Throughout the Western Isles Zone, the human population level and structure varies from island to island, but apart from Stornoway and its surrounds, numbers are relatively low and in some cases still declining. Most people are involved with either crofting or fishing, and so have strong links with the land and the sea. Many are dependent on fishfarming, estate work, or tourism, and a significant number of people are employed by the local authorities, and a range of other organisations, agencies, and service providers.
3. Important wildlife and habitats of international conservation interest exist throughout these islands and it is difficult to find an area of land that does not support or host internationally important species or habitat. The condition of the natural heritage varies considerably throughout these islands, with some of the key factors influencing them including:
 - Changing crofting practices, (reduction in cattle and cropping, and changes to seasonal patterns of grazing, overgrazing, undergrazing, and a reduction in the diversity of management), leading to:
 - a gradual reduction in the diversity of flowering plants in some machair, grassland, moorland and upland habitats;
 - a decline in certain breeding bird populations in some areas.
 - Agri-environment schemes, leading to:
 - the continuation of traditional rotational cropping and grass crops in some areas;
 - the continuation of seasonal grazing of machair and other grasslands in some areas;
 - the continuation of early cover for corncrakes and bird-friendly mowing.
 - The introduction of voluntary management schemes within designated sites for corncrakes, leading to:
 - provision of additional habitat;
 - a reduction in damage to breeding birds from inappropriate mowing techniques.
 - The introduction of voluntary management schemes within designated sites for blanket bog, leading to:
 - a reduction in uncontrolled muirburn within some areas;
 - a reduction in damage to breeding birds in some areas;
 - a reduction in damage to blanket bog habitats in some areas.

- Inappropriate muirburn in some undesignated areas, leading to:
 - localised damage to breeding bird populations.
 - localised damage to blanket bog habitats.
 - The expansion of alien species, leading to:
 - a decline in certain breeding bird populations;
 - impacts on freshwater habitats and species.
 - Reduced rabbit control, leading to:
 - damage to machair habitats and landforms from erosion in some machair areas.
 - Climate change, leading to:
 - an increase in erosion of machair coastlines;
 - effects on habitats and species.
 - Expansion of fishfarming production, leading to:
 - damage to seabed communities and deterioration in the condition of sealoch habitats;
 - impacts on wild fish populations.
 - Introduction of locational guidance for fishfarming production, leading to:
 - reduction in further damage to marine habitats.
4. The priority for the future is to ensure that support mechanisms and regulations are tailored to suit local circumstances and enable sustainable management of agricultural land and the marine environment. High priorities should include increased cattle production, eradication of mink and polecat ferrets, and removal of hedgehogs from sensitive areas.

Description of the natural heritage

A description of the main features of the natural heritage and its enjoyment

5. The Western Isles Zone is made up of a spectacular chain of islands located on the western fringe of Scotland. It includes all of the Western Isles, Coll and Tiree in the Inner Hebrides and Sule Stack and Sule Skerry off Orkney. Each island has its own individual character, but are renowned for their diverse range of habitats, wildlife, geology, landforms, and landscapes; most of which are of international importance.

Geology and landforms

6. The Western Isles is composed almost entirely of Lewisian gneiss, which is the oldest rock type in Britain. The gneisses are closely related to rocks in southern Greenland and north east Canada, with which they were once part, before the opening of the North Atlantic Ocean. Small outcrops and dykes of different rocks have been inserted into the Lewisian gneiss bedrock at various times and make an important contribution to our understanding of geological history.
7. The volcanic rocks which form the Shiantas and St Kilda add an unusual contrast to our geological heritage. They are more similar to rocks found in Skye and are one of the youngest types of rocks found in Scotland. The impressive cliffs of vertical basaltic columns of the Shiantas are similar to the formations seen on Staffa and the Giant's causeway in Ireland.
8. During the Ice Age, glaciers scoured the surface of the gneiss, exploiting lines of weakness in the bedrock. Material was periodically deposited, and after the ice melted, lochs formed in the hollows created in the bedrock. Eventually peat has accumulated over most of the islands, although parts of south Harris still retain a large proportion of bare rock forming a distinctive almost lunar landscape. Since the ice age, sea level has been rising very slowly, producing our present day coastline.
9. Along the western coast, fragmented sea shells form sand banks, and sand blown inland from the shores has formed the extensive machair of the Uists, Benbecula, Barra, Coll, and Tiree. Small areas of machair are also present within Lewis and Harris.

Climate

10. The influence of the Gulf stream creates a much warmer climate than in other areas at the same latitude. The zone experiences a high degree of rainfall, and is windier and wetter throughout the year than mainland Scotland. It is cooler during the summer, and has less snow during the winter. Spring arrives later here, delaying the start of the growing season.

Agricultural land

11. The agricultural land within the zone consists of crofting townships, which are organised into individual crofts, inner common grazings around the crofts, outer common grazings on hill land, and occasionally common grazings on coastal machair. Each island may have an occasional farm, while Coll consists almost entirely of farmland. Agricultural activities result in hayfields, seasonally grazed grasslands and cropped areas, all of which provide a range of semi natural habitats on which wildlife thrives.

12. Machair is a rare habitat globally, and is particularly important for wildlife, which is strongly dependent on agricultural management. Hard grazing over the winter combined with a grazing break during the summer increases the abundance and diversity of flowering plants on the vegetated machair.
13. In Coll and Tiree the machair is used almost entirely for seasonal grazing, whereas in the Uists the machair is also used to grow crops such as corn and potatoes. These are grown in individually apportioned strips for several years and then left fallow for the same again, allowing the ground to rest. This ploughed ground is used by ringed plover, oystercatcher and little tern while also supporting a profusion of flowering plants; poppies and corn marigolds in the crops, for instance, give way to other plants such as storksbill and field pansy during the fallow years. As the corn grows it becomes attractive to breeding corn bunting, twite and skylark. Particular management activities, such as seasonal grazing with cattle, suit other breeding wading birds (such as dunlin and lapwing). Machair cropping has declined dramatically in Lewis and Harris and a lot of the machair there is grazed all year round.
14. Corncrake numbers appear to be stable in the Uists, Coll and Tiree, where hayfields, cornfields, iris beds, and late grazed pastures provide good habitat. However, the corncrake population in parts of Lewis is in serious decline and they have almost disappeared from Harris. These birds have also declined or disappeared from most other areas in Britain and this zone is one of the few last remaining strongholds for them.
15. On Coll and Tiree agricultural land provides feeding for wintering barnacle geese and Greenland white-fronted geese, both of which occur in internationally important numbers. In the Western Isles wintering barnacle geese are found on offshore and inshore islands which are grazed by sheep, with small numbers along the coast on clifftops. Greylag geese feed on croftland and farmland on the main islands and breed in moorland areas. There is an increasingly large population of resident greylag geese in the Uists, with a smaller population in Lewis and Harris.

Mountain and Moorland

16. A large proportion of this zone is dominated by heather; this includes mountainous areas, knock and lochan terrain and extensive areas of blanket bog, with smaller areas of more rocky moorland. Sheep and deer graze these areas, and heather is burned to improve the grazing. Limited stalking and angling, together with stock management, increasingly involves the use of All Terrain Vehicles (ATVs). Peat is cut beside many of the roads and tracks.
17. Within the zone, the mountainous areas are mainly confined to south Lewis, west Harris and the eastern side of the Uists. The distinctive Harris hills form the largest area of upland within the zone. The transition between sea and mountain summits is dramatic, and is reflected in the designation of a National Scenic Area for part of the zone.
18. Although the altitude is surprisingly low the climate is so exposed that the upland transitions and habitats are found at much lower levels here than in the highlands of Scotland.
19. The lower slopes of these hills are characterised by large numbers of boulders and scree, with patches of wet heath, and occasionally bog communities. On the upper slopes there is much exposed bedrock with species-poor Arctic-alpine vegetation

largely restricted to crevices and ledges. Most of these habitats are important in European terms and also support internationally important bird populations.

20. Large areas of Harris, South Uist and smaller areas in Lewis are dominated by knock and lochan landscape. Here there is a high diversity of form and aspect, created by areas of peat covered hillocks interspersed with lochans. Such areas are important breeding grounds for greenshank and black-throated diver.
21. Extensive areas of blanket bog, are found within the Western Isles. This habitat is very important in international terms and two large sites have been recognised as cSACs, one in North Uist and one in Lewis. A characteristic of this habitat is the perception of emptiness and of a uniform and simple landscape, broken only by an occasional hill standing above the surrounding moor. However, its complexity can be appreciated from the air, where an abundance of freshwater bodies can be seen. The vegetation is dominated by carpets and hummocks of bog mosses such as *Sphagnum* spp., together with areas of quaking ground. On closer inspection these areas reveal a colourful array of small plants and mosses. High numbers of birds such as golden plover are found throughout these blanket bog areas. Wetter areas are favoured by dunlin, whilst merlin nest in slopes with long heather, and eagles are found on crags. In the Uists, moorland birds such as hen harriers and short-eared owls are also present.

Woodland

22. A first time visitor to the zone will observe that there is scarcely any woodland. Formerly there was more woodland cover but it is thought to have been patchy. Changes in climate, together with direct and indirect clearance by humans and their grazing stock, reduced the woodland habitat to its present condition.
23. It is now confined to ravines, inaccessible ledges or islands within lochs. The commonest trees are willows, rowan and juniper, with some aspen, birch, hazel, and holly. Due to the exposed conditions, the trees tend to be small and stunted in form, their size determined by the availability of shelter from nearby landforms.
24. By far the largest extent of woodland now present in the zone is man-made, coniferous plantations, policy woodlands and those in and around settlements. Some mainly deciduous plantations have been planted in the last few years, and this is expected to increase in response to the various schemes on offer.

Freshwater

25. The freshwater lochs found in this zone may be small in comparison with some of the major water bodies of mainland Scotland, but they are so numerous and widespread that when you add them up, there are over 6000 separate lochs - some 15% of the total standing water resource of Great Britain - making this a habitat of particular importance for this zone.
26. They form three broad categories: the nutrient poor lochs of the moorland and upland; the nutrient rich machair lochs; and the brackish lochs (freshwater lochs that are influenced by sea water).
27. The lochs found on the moorland areas vary from the smallest pools up to the largest and deepest expanses. Typically, they are poor in nutrients and slightly acidic. Brown trout are resident in most of the lochs, and Arctic charr (a remnant from the last ice age) are still found in some of the bigger and deeper waters. In the summer months Atlantic salmon and sea trout enter most of the lochs which have clear connections with the sea.

28. In contrast the lochs of the machair are sweetened by windblown shell sand, making the water slightly alkaline. Coupled with nutrient input from agricultural activity, the machair lochs can be described as being eutrophic or nutrient rich. Thus they support richer plant and animal communities than their moorland counterparts. This in turn allows the trout of the machair lochs to grow bigger and faster than their moorland cousins.
29. Brackish lochs are of particular interest, displaying plant and animal species that are typical of either marine or freshwater depending on the degree of salinity. Many of the lochs of the north west of Lewis fall into this category. Loch Bee and Loch Roag are good examples in South Uist, while Loch Obisary in North Uist is unique with distinct layers of fresh and salt water.
30. Most of the rivers are short in length and of narrow width. They vary from slow moving streams in the flat peatland landscape to fast flowing burns in the uplands. The run off following heavy rainfall generates spate conditions very quickly, and the rapid rise and fall of Hebridean streams is a characteristic feature of the area.
31. Other freshwater species of particular note are: freshwater pearl mussel, slender naiad, American pondweed and Shetland pondweed. The lochs also provide good breeding and feeding habitats for otters and a wide range of birds including black-throated diver, red-throated diver, red-necked phalarope, mute swan, and greylag goose.

Marine Life

32. The marine life of the Western Isles Zone is reputed to be more diverse than found in the terrestrial habitats. Intertidal sand flats, non tidal sand banks, sheltered rocky coasts, sealochs, saline lagoons, reefs, and exposed rocky coasts, are all represented, many of European importance and designated as marine Special Areas of Conservation.
33. Intertidal sand flats support communities of worms and molluscs, and provide important feeding areas for populations of breeding and wintering wading birds. Sealochs are used extensively by fishfarmers, who value their sheltered conditions, tidal currents, and water quality. These conditions are also appreciated by marine creatures such as, brittle star, fan worms, anemones and sponges. Lochmaddy mSAC in particular contains many interesting animal and plant communities. Tidal rapids formed by sills at the entrance to saline lagoons (found in places like Tob Valasay marine SAC, in Lewis) form the conditions where a variety of colourful anemones and sponges thrive.
34. Out at St Kilda and other exposed places, reefs, caves, and vertical cliffs of coastline are colonised by different communities as the depth increases, producing a distinct vertical zonation. Here kelp continues down to greater depth than normal due to the exceptionally clear waters of the Atlantic Ocean. As the light fades this gives way to anemones and unusual corals such as Ross coral. The seas surrounding this area are rich in demersal and pelagic fish, whilst crabs and lobsters take shelter in amongst the rocks. Seals are often encountered asleep in undersea chambers formed by huge boulders.
35. The Minch between the Western Isles and the west coast of Scotland, supports an impressive range of habitats and fishing grounds. The smaller boats tend to fish for prawns on the sheltered east coast during the winter months, returning in the summer

months to the west coast of the Western Isles to places like Heisker (the Monach Isles) to fish for lobsters and fish.

36. Marine mammals are common but have favoured localities at different times of the year. In August whales and dolphins come in to the shallower waters to feed on squid and spawning fish. There are thought to be two resident schools of dolphins, one group of bottle nose dolphins in the Sound of Barra, and perhaps a group of Risso's dolphins in the Broadbay area near Stornoway. Common seals are abundant all year round in the Sounds of Barra and Harris, and around Coll, giving birth on these rocky coasts and sgeirs during the summer. Large numbers of breeding grey seals collect in remote colonies to give birth in the late autumn. Most colonies are formed on rocky exposed islands like North Rona, Shillay, Coppay, Haskeir and Gasker; but the largest colony of all in the Western Isles, and the second largest in the world, is found on the sandy beaches of the Monach Isles. Otters are numerous along the coastline, as well as inland, throughout the Western Isles, Coll and Tiree.

Offshore Islands

37. There are many spectacular offshore islands within the zone, from St Kilda which is a World Heritage Site, to North Rona, Sula Sgeir, the Flannans, the Shiant, the Monach Isles (Heisker), Mingulay, Berneray (Western Isles); and Sule Stack, Sule Skerry, (Orkney). Most have an abundance of cliffs and ledges, with a distinct maritime vegetation. These islands have a range of designations for their breeding sea bird populations, wintering geese, geology, and breeding grey seals. In summer they tend to be spectacular with huge whirling masses of puffins, gannets, guillemots, razorbills, kittiwakes, fulmar, skuas, and gulls. Some also have nocturnal petrels and shearwaters. The Monach Isles are the exception, with sandy machair islands reaching only 19 m at their highest point. Fulmar nest at the mouth of rabbit burrows in the sand dunes, and there are large numbers of black guillemots in the boulders and rocks of the storm beaches. Important populations of barnacle geese gather in winter on the Shiant and the Monachs, where they graze on the maritime grassland and machair kept short by sheep.
38. Islands closer to shore are still important for wildlife, coastal heath, otters, seals, breeding geese, eider duck, and terns.

Non-native species

39. Due to the isolation of the zone, the flora and fauna of these islands have evolved in the absence of many species that are common throughout much of the rest of Scotland. Hedgehogs, mink, polecat-ferrets, frogs, toads, and rabbits have all been introduced and have become established in the Western Isles, with mink and hedgehogs having the most significant impact on the native bird populations.
40. High numbers of rabbits are damaging the machairs of the Uists and Coll, affecting the machair vegetation and landforms, in contrast to Tiree, Berneray and Pabbay which are free of rabbits at present.
41. Canadian pondweed has been introduced and is colonising several lochs in the Uists, and *Rhododendron ponticum* poses a threat to several native wooded islands within South Uist and Lewis.

Settlements

42. Settlements in the Western Isles are generally organised into crofting townships with a few larger more urban villages, Balivanich, Lochmaddy, Lochboisdale, Tarbert and Castlebay. Stornoway is the only settlement that could be described as a small town.

43. Most of the crofting townships are situated close to the coast, and are organised into strips of land known as crofts. On each croft there is a croft house, and sometimes additional houses have been built on 1/4 acre de-crofted plots known as feus. The pattern of housing varies enormously from village to village, and there are a variety of styles from the upgraded old stone house, to the 1950s square bungalow and the mid-seventies centrally heated rectangular kit house. From these basic designs, the more modern kit houses have developed a number of additional styles and shapes.

Landscapes

44. Despite each island tending to have its own distinctive character, they do share certain elements: the proximity of villages to the coast, the large open skiescapes, the connection between people and the land, and between people and the sea, and the influence of weather. There is also a strong link between the working (agricultural, fishing, and aquaculture) and domestic landscapes. This provides a contrast to the more extensive, less frequented areas of hill, moorland and open sea.

Recreation and access

45. Arrangements for recreational activities within the zone are fairly informal and there is open access to most areas of moorland and coast for outdoor activities. There are few formal recreational facilities, except for several small scale outdoor centres, car parks, and some view points or picnic areas. A series of waymarked walks and leaflets have been developed throughout the Western Isles, and people can also use the old deer stalking paths. The majority of routes to hills, to good fishing lochs, or round the coast are very unobtrusive, and follow sheep or deer tracks, or old cairns. These have probably been used for many generations by the local population but may not be obvious to the casual visitor.

Key influences on the natural heritage – how and why the natural heritage is changing

An outline of how the natural heritage has changed, how it is changing and the key factors influencing change. The changes described are both positive and negative and, together with the Description, provide the rationale for the Vision.

46. **Climate change**, although a natural process, is being exacerbated by pollution, deforestation, and degradation of peatlands, all of which increase carbon dioxide in the atmosphere, and in turn accelerates the rate of global warming. It is now widely accepted that during the next 50 years the temperature will increase by approximately one degree centigrade. It is also expected that there will be an associated increase in rainfall, in wind speeds, in the frequency of stormy weather, with a continued rise in sea level. It is difficult to predict how this will affect our wildlife and habitats but the most obvious scenario would be the loss of a significant amount of machair, and the conversion of many freshwater lochs to saline lagoons.
47. Most of the natural heritage of the zone is either dependent on **agricultural activities** or is hosted on agricultural land and therefore changes to agricultural practices can have important and significant effects both beneficial and harmful on the natural heritage of these islands. Although the degree of change varies significantly between islands, there is a general trend towards a decline in: cattle production; crop and hay production; the use of seaweed and manure as a fertiliser; and seasonal patterns of grazing. Due to the age structure of some communities, the economic and employment situation in some parts of the islands, and the poor economic return from crofting activities there has been a decline in active management of croftland.
48. Sheep numbers have increased due to preferential subsidies and the breeds of both sheep and cattle have been replaced with larger, less hardy lowland or continental types with a higher market value but which require additional supplementary feed. These 'improved' stock cannot survive on the moorland and therefore there is an increase in stock being kept on the croftland all year round. The reduced movement of stock between common grazings and croftland combined with changing weather patterns has reduced hay production (sometimes in favour of silage) and increased the demand for supplementary feed and imported hay.
49. **Native woodland regeneration** is restricted by grazing pressure and climate. Earlier plantations were largely coniferous but following the introduction of crofter forestry grants, schemes now include a large percentage of broadleaves.
50. The introduction of **alien species** such as hedgehogs and mink is also adversely affecting the native populations of ground-nesting birds. Both species are expanding their range and effect within the Western Isles. Mink are colonising southwards from Lewis and Harris and now have been confirmed as far south as Benbecula. Hedgehogs have spread throughout most of the zone apart from the north and east of North Uist and Harris.
51. **Red deer** populations continue to increase and to have an impact on moorland habitats and the regeneration of native woodland. Concerns over liability and safety have in some areas resulted in restricted public access to the hill ground during the shooting season. Otherwise open access is the norm.

52. **Fishfarming** has created a new type of working landscape within the sea lochs and has assisted in the economic development of otherwise fragile rural areas. However, the use of chemical treatments and accumulation of excess feed beneath the cages have been implicated in environmental problems including plankton blooms, shellfish poisoning and the reduction in wild sea trout and salmon populations. In most of the suitable sea lochs, production is at the stage where there is now very little room for expansion. Recent changes to the existing guidance have required that more care be taken in siting cages.
53. Freshwater fishfarming is gradually colonising the freshwater lochs and efforts are being made to develop a strategy to assist with locating these fishfarms where they will cause less impact on water quality, landscape and reduce disturbance to birds.
54. **Commercial fishing** activity for local boats centres mainly on shellfish (lobsters, prawns, crabs, velvet crabs) although there are a small number which take fish or scallops. The number and size of boats from outwith the area but operating within these waters is increasing, and they tend to fish intensively for a period and then move on. This reduces the incentive to conserve stocks and also affects the stocks left for local boats. In general, however, fishing continues to make a valuable contribution to the economy of the Western Isles and most of the fishing activity does not appear to be causing a significant impact on natural heritage interests. The exception to this is scallop dredging which can cause damage to some areas of the sea bed.
55. **Development** is seen by many as the sole solution to the economic problems and ageing population structure in some parts of the Western Isles. On the other hand this can encourage people to sacrifice the natural resources which make the Western Isles special. However, it is becoming increasingly accepted that the natural heritage attracts people to return to the islands, attracts tourists and associated revenue, and attracts economic support. Whilst it is agreed that development is vital, the question of sustainability must become a primary consideration.
56. The manner and form of **conservation designations** has resulted in either hostility or indifference to wildlife conservation from the local population. However, now that it is being recognised that the maintenance of the wildlife interest is generally dependent on sustainable management carried out by local people, the level of interest in designated areas and wildlife in general has increased. In some areas, such as Lewis, recent voluntary management schemes for corncrakes and peatlands have been well received, in place of additional statutory Sites of Special Scientific Interest (SSSIs), which demonstrated that it is the method rather than the principle which has been unpopular.

Vision – what the natural heritage could look like based on better stewardship of natural resources

*The vision describes how the Western Isles Zone could look based upon sustainable use of natural resources. It is an illustration of a **possible scenario** based on fulfilling the Objectives and Actions in this Prospectus. It is neither a 'utopia' nor a 'blueprint', but the basis for developing a shared vision between all parties with a responsibility for, or an interest in, the natural heritage of the Western Isles Zone. **It is written in the present tense, in the year 2025.***

57. It is the year 2025, twenty years since the present agri-environment scheme was introduced. During that time it has produced some amazing changes and has far exceeded most expectations. The flexibility provided by the scheme encouraged crofters to do a variety of different things, increasing the diversity of management, and improving the condition of habitats and wildlife. The local economy has benefited and the islands no longer import animal feed, vegetables, eggs, dairy products, honey, lamb, beef or chicken, and the transport lorries travel full in both directions. The attitude towards wildlife and conservation has become more positive, and local communities are getting more actively involved in protecting their own areas.
58. When the present scheme was first introduced, some crofters moved from sheep to cattle production, whilst others reduced the number of stock to levels which the land could support. Gradually the area has become more self sufficient, with some crofters producing crops to sell to stocksmen, or producing garden vegetables and fruit.
59. As a result cattle numbers have increased throughout the zone, as has cropping of croftland and machair, and the use of manure and seaweed as a fertiliser. This has supported a revival in various bird populations, in particular in Lewis and Harris, where corncrake numbers have increased from thirty calling males in 2000 to a population of three hundred pairs this year. This has also been helped by a separate project which funded the repair and construction of stone dykes. The increased shelter enables early growth of vegetation in the spring, and provides early cover for corncrakes when they arrive in April each year. This, combined with the reduction in mink, polecat ferret, and hedgehog numbers, reduced predation on corncrakes and contributed to an improvement in the breeding success. The increase in corn has increased the number of field mice and shrews, and for the first time, the breeding population of short-eared owls, hen harriers and corn buntings is looking stable in Lewis and Harris.
60. The reduction in the number of sheep has improved the condition of the island flocks considerably with around half of the lambs produced being sold to the mainland, with the remainder being sold and eaten locally. Regardless of where they are sold, stock now fetch a good price consistently and are not dependent on global currency fluctuations. This is largely due to the product being marketed as high quality heather and machair reared lamb.
61. Although most people have favoured a return to the hardier breeds, some have continued to breed other continental types. The less hardy breeds need to be kept on the croft all year round and their owners are unable to take advantage of payments for seasonally grazing their land. This is seen as a useful contribution towards the local demand for hay, silage, turnips, beet and other crops grown by other crofters and generally adds to the diversity of management and habitats. The grass remains short on their land and birds find it attractive to feed there. Payments for making regular

applications of cattle manure or seaweed keeps the land in good condition, increasing the insect population for the birds and improving the growth of grass for stock.

62. The healthier sheep to cattle ratio has reduced the need for medicines and chemicals, further reducing costs of production. Cattle are put out to graze on the spring grass as they are more tolerant of worm parasites than sheep and lambs. People who don't have cattle, borrow some to perform this service.
63. Grazing pressure on some of the upland areas has been reduced and deer numbers are kept at sustainable levels. As a result the heather and associated plants flower and set seed, and tourists now feel its worthwhile coming to see the Western Isles in their autumn colours as well as the summer. Heather growth is good in most years and the population of red grouse and mountain hares has recovered well. Due to the improved condition of the sheep on the hill, and the re-introduction of employed shepherds, lambing percentages are now relatively high. The additional payments for hosting important habitats or species appears to be adequate to enable common grazings to employ shepherds at critical times of the year.
64. With better upland management the brown trout stocks have become more productive. Thousands of people are visiting the Western Isles each year to fish for them, putting a major boost into the local economy. Salmon stocks are thriving, helped by community involvement in their management. The revenue generated from angling and export of wild salmon complements that from aquaculture.
65. The improvements in the condition of heath habitats from the improved stocking levels have meant that nearly every common grazing has their own community bee hives and produce organic heather honey. This is sought after by consumers on the mainland as it is the only place in Britain that can produce honey which is guaranteed free from oil seed rape pollen.
66. The reduction in grazing pressure close to existing remnants of native woodland improved the natural regeneration of woodland species considerably throughout the zone. In addition, a new native regeneration forestry scheme was introduced and jointly funded by FC and SNH. Schemes were funded in various sites in South Lewis, Harris and North Uist, and during the course of the last twenty years a particularly distinctive open type of native woodland has formed, which has added a diversity of form and colour to the landscape.
67. The opportunity presented by these agri-environment and other schemes has been instrumental in encouraging local communities to get together, and employ croft workers to work a collection of crofts. This is not organised on a township basis but is done more informally. Complex groupings have arisen and tend to be based on a combination of family links, friendships and other ties. The benefit of this is that these groups work better together than the more formal townships, although townships still play their role in regulating grazings. Some communal projects (bees, ducks, hens, cattle herds and sheep stock clubs) involve several common grazings working together.
68. Since mink were finally eradicated the bird life in Lewis and Harris has improved considerably. As well as an improved breeding success at all the tern colonies, there are now high densities of lapwings, oystercatchers, and redshank throughout the crofting areas. Freshwater birds such as phalaropes, grebes, coots, moorhens, and water rail have returned to Lewis and Harris, and as the populations increased, they have gradually expanded their range.

69. The increase in wildlife tourism has provided additional jobs and some extra income for B&Bs. A recent tourist survey reported that there was a huge increase in the number of repeat visits, and that individual tourists were spending significantly more than before. This is due to the increase in the facilities and services on offer, and increased advertising through the internet.
70. There are now several boat operators and they work most of the year round now, doing trips to see: seabirds in the spring and summer; dolphins and whales and basking sharks in August and September; grey seals breeding from October through to December; and wintering barnacle geese and Greenland white-fronted geese from September to April. Most tend to employ wildlife guides from the various local ranger services, to increase the quality of the visitors' experience and to guide them to the best spots. When the weather is too bad to go out in the boat they provide alternative trips on land, thereby reducing their dependence on the weather. All cruise ships to offshore islands are obliged to take an authorised local guide as well as a local pilot which reduces the risk of unintentional disturbance and shipping accidents.
71. The large increase in fines for the theft of wild bird eggs, the introduction of prison sentences, and the employment of a ranger service has reduced the popularity of the Western Isles as a holiday destination for people engaged in that activity.
72. The freshwater fishfarming strategy, initiated in partnership with statutory bodies and the industry, proved useful to all and led on to other similar approaches. The fishfarming industry has radically altered its mode of operation, and now all the fish are reared in shore based tanks. The water is filtered, treated, and returned to the sea or the loch after bacteria, viruses, parasites and other particles have been removed or destroyed.
73. The fishing industry gained local control of most of their fishing grounds through community regulating orders. They are managing these areas well and are obliged to monitor catches and report on conditions annually. Stocks of fish and shellfish have improved considerably and the next target is control of waters further offshore.
74. Oil exploration is continuing and they have discovered several small fields to the west of the Hebrides, but it is not yet economic to develop these. In the meantime, they have continued to supply the Western Isles with oil pollution equipment and this has been used occasionally to mop up one or two small spills from shipping accidents. There have been no major oil spills, and large boats passing through the Minch have to take a local pilot onboard, reducing the risk considerably. Through an international agreement the recognised deep water route has been moved way to the west of St Kilda allowing more time to react to a shipping accident.
75. Renewable energy and energy efficiency projects have increased, following the success of several domestic demonstration projects. These were supported by a new housing grant which encourages the incorporation of solar power, individual wind turbines, and better waste management. Initially, this reduced household bills considerably but now the increased demand has reduced the cost and improved the technology, and households can earn a small income from their excess production. The first tidal turbine was constructed in the North Uist to Benbecula causeway to coincide with upgrading works. Once operational, it proved an instant success, allowing the Western Isles to export electricity to the mainland via the underwater cable to Skye. Following the success of this demonstration project turbines are being

constructed in all the causeways. Research and development work is underway into developing offshore wave and wind power.

76. The development of IT technology resulted in the creation of a relatively large number of new jobs at a range of different levels and locations. Multipurpose offices have been set up on the main inhabited islands within the zone, enabling employees of government bodies and agencies to live in rural areas. This has been a gradual process as previous employees were not moved. Instead, new employees have been able to choose which office to work from, and this has increased employment opportunities for island communities, in particular returning graduates. In practice, each office has staff from different agencies and one of the beneficial byproducts of this arrangement has been closer working links between organisations. The lower level of unemployment, and the healthier age structure of most communities has also reduced the demand for development at any cost.
77. The government's approach to 'joined up thinking' between government bodies has also resulted in a different approach to wildlife conservation in areas like the Western Isles Zone where there has been a change from designated sites towards wider countryside measures and voluntary agreements (backed up by the present agri-environment scheme).

Objectives – priorities for the natural heritage, and action required

*These are **objectives for the natural heritage** and indicate what needs to be done to ensure that we use the natural heritage sustainably – to close the gap between current trends and the vision. The objectives indicate the priorities relevant to the natural heritage in light of current changes. Once this has been agreed, key stakeholders can develop action plans with more specific objectives and resource implications. **Possible Actions** are identified under each Objective as a starting point for taking these forward at a local level. Changes to national or international policies will depend on action at a national level and these are identified in the relevant National Prospectuses.*

- 1. To maintain those moorland, coastal heath, and upland habitats which are in a favourable condition and encourage the regeneration of areas which have been damaged or degraded.**
78. The majority of the moorland and upland habitats within this zone are relatively intact and some are in good condition, but there are also occasions where there has been a gradual deterioration in the quality and condition of the habitat. Stocking density of sheep and/or deer and the frequency and method of heather burning are the main factors which determine the condition of these moorland habitats.
79. The numbers of sheep and deer grazing these areas varies considerably between different islands, estates, and common grazings. Some areas could take more grazing pressure whereas, in other areas, heather is being suppressed and replaced by rough grasses. Trampling can cause localised damage, churning up areas of ground and initiating erosion. On the other hand, low intensity and/or seasonal grazing can maintain botanical diversity.
80. The Deer Commission are working to reduce the number of deer in areas where they are causing damage to natural habitats and forestry. Two deer groups have been set up, one for Lewis and Harris and one for the Uists (there are no deer on Coll and Tiree). The need for an increased deer cull in some areas and the benefits of reducing the hind to stag ratio is gradually gaining support.
81. Muirburn is rarely carried out in Coll and Tiree, and is reducing in most parts of the Western Isles. However, when it does take place it tends to be less of a community activity and is more opportunistic and uncontrolled. It is not unusual for heather fires to be lit and left, covering large areas, including habitats such as blanket bog and wet heath which are more easily damaged by burning. Mosses found in these habitats regenerate slowly, so damage can still be obvious several decades later. Heather fires also happen in May and June outwith the legal muirburn season, and as a result cause more damage to ground-nesting birds. Uncontrolled fires are more likely to damage the underlying peat, which could initiate erosion.
82. When small areas of dry heath are burned over a long term rotation, small stands of both short and tall heather are formed which benefits flowering plant diversity and breeding birds.
83. There is potential to reverse the gradual deterioration of degraded moorland habitats by developing voluntary schemes which offer owners and occupiers financial incentives for managing these habitats in a particular way. Schemes such as the Lewis Peatlands Management Scheme are proving successful but are restricted to the Lewis Peatlands SAC, SPA, and Ramsar site. Positive management agreements and

demonstration projects can also be used but resource constraints and funding regulations limit the potential for this.

84. The most appropriate mechanism for supporting desirable management would be through appropriate voluntary wider countryside agri-environment schemes. At present they do include some elements for these habitats but are very competitive and as a result it has been extremely difficult for occupiers to gain entry. There is a need to expand the present schemes to include support for sustainable grazing levels, and for removing grazing pressure for a short time to enable regeneration of severely overgrazed habitats. Support mechanisms also need to be adequately resourced to enable significant areas to be entered and therefore maintained in good condition.
85. The benefit of voluntary support mechanisms is that it encourages enthusiasm and support for the objectives and increases the effectiveness of partnership working and incubating a more positive relationship to conservation interests.
86. If peatland habitats are damaged or eroded on a large scale they can release large amounts of carbon dioxide stored within the partly decomposed organic peaty material. This contributes to global warming and sea level rise and therefore it is in our interests to continue to protect the habitats found here from such significant damage.
87. The Local Biodiversity Action Plans (when developed) should also assist with identifying detailed management requirements for moorland habitats, in particular blanket bog, wet heath, dry heath, upland grasslands and scree slopes.

Possible actions

- Ensure local priorities for agricultural support include: sustainable grazing levels on moorland habitats; and muirburn plans where appropriate.
- Develop management agreements to encourage restoration of degraded peatland habitats, or to maintain existing conservation interest.
- Develop demonstration projects on: the regeneration of previously overgrazed upland habitats; the comparative benefits of varying grazing practices; and alternative production on moorland areas, ie heather honey.
- Develop marketing schemes for heather-fed lamb and beef.
- Manage deer numbers through Deer Management Plans developed by Deer Management Groups.
- Implement the Local Biodiversity Action Plans.
- Promote the muirburn guide.
- Undertake survey work and monitor the condition of the moorland, coastal heath, and upland habitats.

2. *To maintain the dynamic machair systems, with their important bird populations and diversity of plants.*

88. The Environmentally Sensitive Area (ESA) schemes which cover the machair of the Uists and the Argyll islands (Coll and Tiree) include financial incentives for most of the elements which are necessary to maintain the machair habitats. The introduction of these schemes appears to have slowed the decline of 'traditional' agricultural practices in these areas. However, there are some important elements which are missing from the scheme including support for seasonal cattle grazing and for corncrake-friendly mowing of cornfields.
89. Outwith these ESA areas wider countryside agri-environment schemes are available but are competitive so there is no guarantee of acceptance. Agricultural support

mechanisms need to be amended and adequately resourced to include support for the full range of measures required to maintain this habitat in a good condition.

90. Rabbits were introduced to these islands and were an important source of food for people in the past. However, the introduction of myxomatosis discouraged people from eating rabbits and as a result rabbit shooting declined sharply. The rabbit population fluctuates considerably now, but when numbers are high they can cause significant damage to crops as well as other machair habitats. There have been efforts both in the Uists and Coll to control or eradicate rabbits from certain areas. However, these short term measures are unlikely to be successful as rabbit populations have the capacity to recover quickly. There is a need for a sustained long term effort and commitment from the local community if rabbit damage is to be kept at a tolerable level. Appropriate methods include shooting, gassing, trapping and fencing.
91. The introduction of alien predators such as mink, hedgehogs and polecat ferrets could destroy the high density breeding wader populations which nest on the machairs of the Uists, Coll and Tiree. There is a need to eradicate these alien species (see Objective 6).
92. It has become more apparent in the last few decades through sea level rise, and the increase in stormy weather that climate change predictions are becoming a reality. Previously, these changes happened relatively slowly and were unlikely to change significantly during the course of a person's lifetime. Now the effects of high levels of global emissions of various pollutants, in particular carbon dioxide, are considered to have increased the rate and magnitude of climate change.
93. Communities in these islands are largely dependent on the use of fossil fuel for transportation of goods, travel, and to heat homes. Although there is little that can be done to reduce the dependence on this at the moment, there is potential to contribute to the reduction in emissions by developing the extensive renewable energy resources that exist here, namely wind, wave and tidal.
94. Wind farms have yet to be developed within these islands but there are several proposals at an advanced stage. Wave and tidal power is at an earlier stage of research and although there is huge potential to develop this in conjunction with at least some of the major causeways it is beyond local resources to fund development of this technology at present. Assistance to develop this would be required from national sources. There is also potential to reduce dependence on fossil fuels by supporting smaller energy efficient schemes designed for individual houses. Grants for installing solar power, individual wind turbines, and other energy efficient measures and designs would be helpful. In order to maximise the effectiveness of any renewable energy project it will be necessary to develop designs and choose locations where damage to habitats, species and landscapes is minimised.
95. If emissions of greenhouse gases were reduced instantly we would still have to deal with the effects of erosion from the present climate and the continuing modest increase in sea level. Unfortunately, there is little that can be done to prevent soft coastline, such as machair, from eroding. Coastal defences are unlikely to be effective in most situations. Costs are high, usually more than the land or buildings are worth, and hard defences could exacerbate erosion or cause problems further down the coast.
96. This has led to the development of a national policy of 'coastal retreat', which discourages new development from being situated in areas that are likely to be affected by coastal erosion. The Western Isles Council (Comhairle nan Eilean Siar) recently

held a seminar where it outlined the need for coastal management plans to identify areas where it is possible and practical to construct coastal defences and areas where it is not.

97. The Local Biodiversity Action Plans (when developed) should also assist with identifying detailed management requirements for machair habitats and communities, in particular semi fixed dunes, mobile dunes, damp hollows, vegetation of the strand line, breeding waders, corncrakes and wintering geese.

Possible actions

- Ensure local priorities for agricultural support mechanisms include: cattle grazing at sustainable levels; seasonal grazing of machair; rotational machair cropping; the use of seaweed as a fertiliser; rabbit control; payments for regularly hosting protected species of geese.
- Develop positive management agreements to maintain conservation interests where support is not available through agri-environment support mechanisms.
- Develop demonstration projects on beneficial management of machair habitats including: the link between cattle production and breeding bird populations; and rabbit control.
- Develop proposals to eradicate mink, polecat ferrets and control hedgehogs.
- Encourage rabbit control throughout machair areas, and develop proposals to control rabbits in areas where appropriate.
- Develop coastal zone management plans and implement 'coastal retreat'.
- Develop Local Biodiversity Action Plans and machair Habitat Action Plan.
- Undertake survey work and monitor the condition of machair habitats.

3. *To maintain existing freshwater habitats and species and encourage the restoration of habitats which have been modified or are affected by invasive non-native species.*

98. Freshwater fishfarms are being located on an ad hoc basis at the moment, and this is leading to a gradual degradation of freshwater habitats. In order to target them towards locations where they would have less impact on natural heritage interests a group of partner organisations (CNES, WIE, SEPA, SNH and fishfarmers) has been set up to develop a strategy.
99. Overgrazing and burning of moorland habitats in some areas has resulted in a lack of cover in places and a reduction in the insect population which wild fish feed on. A reduction in grazing pressure in the areas most affected would help to resolve this (measures discussed in Objective 1).
100. The spread of mink throughout Lewis and Harris has been implicated in the decline in the populations of young wild fish. Other impacts on wild fish populations include the expansion of fishfarms, linked to increased sealice infestations, and global warming which is increasing temperatures at sea. Western Isles Fisheries Trust is carrying out research and survey work to determine and resolve the factors responsible for declining fish populations within the Western Isles.
101. Rainbow trout and American brook trout have been introduced to some lochs in the Western Isles for fishing purposes. As far as we are aware they have not become established in the wild, but it is not certain what effect this could have on wild fish and therefore any further proposals to introduce these species should be subject to strict consideration. The Western Isles are free of coarse species of freshwater fish (such

as carp, pike, bream) at present, and measures should be developed to maintain this situation.

102. Canadian pondweed has colonised a few lochs within the Uists and poses a threat to native plants such as slender naiad and the overall quality of these lochs. Measures have been taken to eradicate it and the situation will continue to be monitored.
103. The Local Biodiversity Action Plan (when developed) should also assist with identifying detailed management requirements for freshwater habitats and species, in particular dystrophic, mesotrophic, and eutrophic lochs, freshwater pearl mussel, otter, salmon, mute swans, whooper swans, and slender naiad.

Possible actions

- Develop a freshwater fishfarming strategy for the Western Isles through the existing partnership group.
- Continue to research factors underlying the decline in local fish populations.
- Ensure local priorities for agricultural support mechanisms include: sustainable grazing and muirburn practices on moorland habitats; and reduced grazing off freshwater margins where appropriate.
- Develop positive management agreements to encourage the restoration of freshwater margins.
- Develop measures to control or eradicate Canadian pondweed.
- Develop measures to prevent the release of non-native species.
- Develop measures to eradicate mink.
- Develop Local Biodiversity Action Plans.
- Undertake survey work and monitor the condition of freshwater habitats and species.

4. *To maintain the marine habitats and species, and encourage the restoration of areas which have been damaged or degraded.*

104. The expansion of fishfarming production in some sealochs has caused concern regarding its potential to affect the quality and condition of the sealoch habitat and seabed communities. Recent Scottish Executive Guidelines have advised against continued expansion in some cases and this should prevent further deterioration. Localised damage underneath and around cages from deposition of waste products and the use of chemicals may be reduced as the companies involved increase the efficiency of production techniques. The use of chemicals to treat diseases and parasites could be used more effectively if all companies working in an area formally agreed on the timing of management and production.
105. The potential for oil pollution from shipping accidents continues to present a threat to the general marine environment of the seas surrounding the zone. However, international access to shipping routes such as those through the Minches is enshrined in international maritime conventions which cannot be influenced locally. Oil pollution plans have been developed and oil pollution groups have been set up. The outcome of discussions so far is that in the event of a major oil spill there will probably be very little that can be done to minimise the short term impact.
106. Oil exploration is continuing to the west of the Hebrides and care is being taken to minimise the potential for oil pollution from these activities. The companies concerned and local organisations have been working together on this for some time.

107. Populations of marine mammals and seabirds appear to be healthy and there does not appear to be a problem with available fishstocks as a food source. However, there are widespread problems regarding the lack of local control over the commercial fish resource and there is localised damage to some areas of the seabed from scallop dredging. Regulating and Several orders have the potential to enable more sustainable exploitation of species such as scallops, cockles and lobsters at the moment. However, they may have a more important role in wider inshore fisheries management in the future.
108. Marine conservation areas, SACs and SPAs, require a different approach to management than terrestrial sites due to the lack of a suitable legislative base (the Wildlife and Countryside Act 1981 does not apply below MLWS). Accordingly, marine SACs and SPAs will need to have their own specific arrangements developed in partnership with all the relevant authorities to reflect the specific issues and conservation objectives of the site. This has been trialled in Loch nam Madadh, and will be developed for other marine sites in the years to come.
109. The Local Biodiversity Action Plans (when developed) should also assist with identifying detailed management requirements for marine habitats and species, in particular obs, saline lagoons, intertidal sand flats, sand banks, maerl, reefs, caves, seals and cetaceans. The Lochmaddy LIFE project could also act as a demonstration of integrated management for other marine areas.

Possible actions

- Use Regulating and Several orders to obtain better management of fisheries in certain areas.
- Continue to develop and update oil pollution plans, and minimise the impact of oil exploration works.
- Develop the Lochmaddy LIFE project as a demonstration of integrated management.
- Examine the possibility of tankers using local pilots while travelling through the Minch or via the deep water route to the west of the Hebrides.
- Develop Integrated Coastal Zone Management Plans.
- Develop Local Biodiversity Action Plans.
- Undertake survey work and monitor the condition of marine habitats and species.

5. *To maintain the remaining woodland scrub and associated woodland species, and encourage natural regeneration of native woodland species.*

110. Native woodland is a rare asset within the Western Isles and the condition of the small remaining areas is variable. Regeneration tends to be hampered by grazing pressure and a lack of incentive to fence large areas off. By comparison townships can receive significant financial benefit by creating new plantations and a similar incentive is required to support natural regeneration schemes. At present funding regulations make achieving this objective very difficult.
111. The introduction of *Rhododendron ponticum* in some areas has the potential to cause problems for native woodland and may need to be controlled. The situation will need to be monitored and proposals developed if necessary.
112. Some of the earlier forestry schemes could achieve a higher conservation potential through restructuring to include more open spaces and a higher native broadleaf percentage. In particular, areas of dead trees caused by pine beauty moth could be

used as shelter to establish broadleaves or Scots pine woodlands. Although the majority of other plantations may reach maturity in the next twenty to thirty years an end use is not yet clear and there is a need to investigate the commercial viability of potential products.

113. The Local Biodiversity Action Plans (when developed) should also assist with identifying detailed management requirements for woodland habitats and species.

Possible actions

- Develop woodland schemes, management agreements, and demonstration projects on natural regeneration of native woodland.
- Develop proposals to control Rhododendron in sensitive areas.
- Develop Local Biodiversity Action Plans.
- Undertake survey work and monitor the condition of native woodland habitats and species throughout the zone.

6. *To maintain the population size and diversity of species and communities which are characteristic of the zone, in particular the breeding and wintering bird populations, and distinctive or rare species of plants and invertebrates.*

114. Maintaining healthy populations of the characteristic species of the zone depends to a large extent on the control or eradication of alien species, and the continuation of certain types of agricultural management. Other factors such as climate change and global warming will probably also have a significant impact over a long period of time.
115. Ground-nesting birds such as waders and some seabirds (gulls and terns) are particularly vulnerable to predation by alien predators such as mink, polecat ferrets, and hedgehogs. Of these the threat to bird populations is significantly greater from mink, which has spread throughout Lewis and Harris following the closure of fur farms a number of years ago. Mink predate on ground-nesting bird colonies particularly effectively, taking eggs, chicks and adult birds. Mink have now been found in the Uists and if they manage to establish, they could destroy the internationally important populations of ground-nesting waders found on the machairs. The internationally important colonies of breeding seabirds found on offshore islands could also be decimated if mink or other predators managed to gain access.
116. However, hedgehogs have been linked with a decrease in the breeding success of ground-nesting birds in the machairs of the Uists, and there is concern about polecat ferret predation in other areas. There are plans to attempt to remove and exclude hedgehogs from the Uist machairs and to include polecat ferrets in mink control or eradication projects. If this is successful then it will be even more important to ensure that other non-native (to the Western Isles) animals are not released here.
117. 'Traditional' agricultural activities such as seasonal grazing, low intensity grazing, rotational cropping, late mowing and cattle grazing benefits wildlife and habitats. In some instances large populations of birds and communities of plants have become dependent on the continuation of these activities.
118. Breeding and wintering birds utilise grasslands on enclosed crofts, and inner common grazings. The application of natural fertilisers such as seaweed and cattle manure improves the croftland for agricultural purposes and also improves the insect populations that some of the birds feed on. Cutting this croftland for hay or silage improves the structure of the grassland and these areas tend to be selected by corncrakes. Seasonal grazing improves the plant diversity and structure of the

grasslands, providing cover for breeding birds and habitat for insects. Cattle improve the species diversity of grasslands by grazing indiscriminately, as opposed to sheep which graze preferentially, leaving behind the less palatable, coarser grasses. Cattle tend to require additional winter feed thus supporting the production of corn and grass crops. These crops have direct benefits for wildlife such as corn buntings, corncrakes, breeding wading birds and a large variety of flowering plants. As cattle production declines or disappears in some areas it has been observed that certain bird populations also decline.

119. Hardy breeds of cattle and sheep are well adapted to the harsh climate of the area, requiring a lower output and thriving better on unimproved grazing than the lowland or continental breeds which require significantly more additional feed. The hardy breeds are also more compatible with the type of land we have, and are more suited to the extensive low production system which favours natural heritage interests.
120. These 'traditional' practices are subject to a variety of socio economic pressures and in some islands they are declining rapidly. Although wider agri-environment schemes offer support for some of these management practices, the schemes are very competitive and the majority of applicants are unsuccessful due to the small scale and lack of habitat diversity on holdings. There is a need for agri-support mechanisms to be amended to include the full range of measures required to maintain the characteristic biodiversity of these islands.
121. Greylag geese in the Western Isles and mixed geese populations in Coll and Tiree also graze grassland areas leading to conflict between agricultural objectives and natural heritage interests. In the Western Isles, the greylag goose population appears to be increasing and increased control during the shooting season is being encouraged. The introduction of the latest goose management schemes where payments are made for the number of 'protected' geese on agricultural land should alleviate problems associated with large numbers of geese damaging agricultural interests.
122. In the Western Isles wintering barnacle geese tend to use relatively undisturbed maritime grasslands on uninhabited islands and above coastal cliffs. They prefer short cropped grassland and this needs to be maintained by sheep grazing. In some locations sheep are being removed from some of these islands due to reduced financial viability and an increase in animal welfare requirements. The grassland can become rank and may become unsuitable for these internationally important populations of geese. Changes to agricultural support mechanisms will be required to resolve this situation.
123. The threat of genetic introgression of red deer by the introduced sika on the mainland, makes this zone one of the last sika-free areas, which is why the Western Isles has been designated a "refugium" for red deer.
124. Amphibians and reptiles (apart from perhaps slow worms) are not native to these islands but frogs and toads have been released in Lewis. The potential effect of these species on the local ecology is unknown.
125. The Local Biodiversity Action Plans (when developed) should also assist with identifying detailed management requirements necessary to maintain the characteristic species of these islands, including corncrakes, eagles, hen harriers, short-eared owls, merlin, breeding waders, wintering waders, wintering geese, breeding geese, red-necked phalarope, Irish Lady's tresses and bumble bees.

Possible actions

- Develop proposals to eradicate mink and polecat ferrets, remove hedgehogs and prevent further releases of non-native species.
- Ensure that local priorities for agricultural support mechanisms include: bird-friendly mowing methods; seaweed and cattle manure fertiliser; rotational cropping; low intensity and seasonal grazing; sheep grazing on offshore islands where required; cattle grazing.
- Develop demonstration schemes on whole township systems linking management options with agricultural and conservation benefits.
- Develop goose management plans.
- Develop Local Biodiversity Action Plans.
- Monitor the impact of climate change and global warming on the natural heritage of the zone.
- Monitor and survey breeding and wintering bird populations.

7. *To safeguard and enhance the landscape characteristics of each island group, in particular the distinctive agricultural and maritime elements.*

126. The landscape characteristics of each island group are quite distinctive, but without exception, of the highest quality. This is formally recognised by the designation of three National Scenic Areas within the area. Surveys have shown that the quality landscape is valued by residents, and is one of the main attractions for visitors, making the landscape a major economic resource for the islands.
127. However, there are varying perceptions of what constitutes scenic or landscape impact in particular for smaller developments like individual house design. Residents react to developments in relation to their practical use, and the necessity and convenience of their function. This includes sheds, double storey houses, attached garages, improvements to roads, tracks, causeways, piers and telecommunications masts. Whilst it is desirable to enable improved facilities for the local population there are times when improvements to the design or location of developments are necessary to minimise landscape or scenic impact.
128. In order to facilitate appropriate development, there is a need to develop clear unambiguous guidance with priority going to NSAs. Work on a design guide for housing in the Western Isles has started, providing a valuable first step.
129. The landscape is also enhanced by agricultural activities and is therefore vulnerable to changes from land use in particular overgrazing, undergrazing of grassland areas, and a reduction or cessation of rotational cropping in machair areas. Measures to overcome this are discussed under Objectives 1, 2, and 7.

Possible actions

- Update Landscape Character Assessments.
- Develop design guides for housing in the Western Isles, Coll and Tiree.
- Develop projects which investigate the potential for scenic and landscape impact from different types of development and illustrate possible design solutions.
- Develop facilities which can produce a realistic impression of a development in a proposed setting and make these accessible to interested parties.

8. *To encourage responsible access and enjoyment of the natural heritage of these islands, and raise awareness of natural heritage interests and issues.*

130. The level of wildlife tourism services and facilities is also low at present and there is potential to expand activities without affecting wildlife. This could have significant benefits for the local economy and would help to raise awareness of the natural heritage. Work is underway with partner organisations on access and tourism strategies. Once these have been implemented they should enhance opportunities and facilities.
131. Recreational pressures on these islands are relatively low and generally do not conflict with natural heritage interests. However, large scale events have the potential to cause significant disturbance during the bird breeding season. Work in partnership with organisers and funding bodies can minimise the risk of this.
132. Although other species such as breeding seabirds and breeding seals are vulnerable to disturbance it is thought not to be a significant problem at the moment. However, visitors to offshore islands appear to be increasing and the situation needs to be monitored. Work is also underway on codes of conduct for sensitive sites and species to reduce the impact of unintentional disturbance.
133. Ranger services are useful in raising awareness of the natural heritage of these islands, through guided walks and talks, assistance with interpretation, support for wildlife tourism ventures, and development of environmental education projects. Additional resources for environmental education would make other work more effective and would help to gain the support of those who are involved with utilising or managing these areas.
134. At present there is a wildlife ranger service in the Uists, and RSPB wardens are based on Coll, Tiree, and Balranald (one grant-aided by SNH) but there is no ranger service in Lewis or Harris. Attempts to develop a ranger service in Lewis and Harris have been unsuccessful so far. There are difficulties with finding a body which would be willing to act as the employer, getting agreement on which areas the service would cover and where they would be based, and finding funding partners.

Possible actions

- Develop local access and tourism strategies.
- Develop ranger services throughout the zone.
- Develop access, interpretation and wildlife tourism facilities where required.
- Develop environmental education projects on local issues.
- Develop leaflets and booklets on local natural heritage interests and issues and engage in proactive PR to promote local interests.
- Develop codes of conduct where appropriate.

Key Stakeholders Tables

This table identifies the stakeholders associated with Actions to deliver the Objectives. The aim of this document is to establish consensus on the issues and action required for the natural heritage. To work towards the vision, key stakeholders can develop more specific objectives tied to action plans with resource implications.

Stakeholders	Objectives							
	1	2	3	4	5	6	7	8
Crofters Commission	✓	✓			✓	✓	✓	✓
Crown Estate Commission				✓				
Crofters/Farmers/SCU	✓	✓			✓	✓	✓	✓
Deer Commission	✓				✓		✓	✓
Fishfarming companies	✓		✓	✓		✓	✓	
Fisheries Trusts			✓	✓		✓		✓
Fishermen (commercial)/WIFA				✓		✓		
Fishermen (recreational)/angling associations	✓		✓					
Forestry Commission	✓				✓	✓	✓	✓
Landowners	✓	✓	✓		✓	✓	✓	✓
Local authorities	✓	✓	✓	✓	✓	✓	✓	✓
Local communities	✓	✓	✓	✓	✓	✓	✓	✓
Local Enterprise Companies (WIE, HIE)	✓	✓	✓	✓	✓	✓	✓	✓
MPCU		✓		✓				
National Trust for Scotland								✓
NOSWA	✓	✓	✓		✓	✓	✓	✓
Northern Constabulary						✓		✓
Oil companies	✓	✓	✓	✓		✓		
Power and telecommunications companies	✓	✓			✓	✓	✓	
SAC	✓	✓	✓		✓	✓	✓	✓
Schools/teachers								✓
Scottish Executive/Parliament	✓	✓	✓	✓	✓	✓	✓	✓
SEPA	✓	✓	✓	✓	✓	✓	✓	
SNH	✓	✓	✓	✓	✓	✓	✓	✓
STB/WITB								✓
Wildlife charities SWT, RSPB	✓	✓	✓	✓	✓	✓	✓	✓