**Consultation draft [23.05.01]**

The Natural Heritage of

# Loch Lomond, The Trossachs and Breadalbane

## Working together for its Future

Natural Heritage Zones
Local Prospectus for Zone 15

# Introduction and User's Guide

1. This consultation document puts forward for your comment a vision for the natural heritage of the Loch Lomond, The Trossachs and Breadalbane 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**.

2. 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 better 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*.

3. 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 dependant on the objectives being achieved.

4. ***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**

5. 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.

6. The Natural Heritage Zones Programme also includes ***National Prospectuses*** which set out long term national objectives for six settings: mountain & moorland, forest & woodland, farmland, freshwater, coast & 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.

***Fig: Map of the 21 NHZs highlighting Loch Lomond, The Trossachs and Breadalbane.***

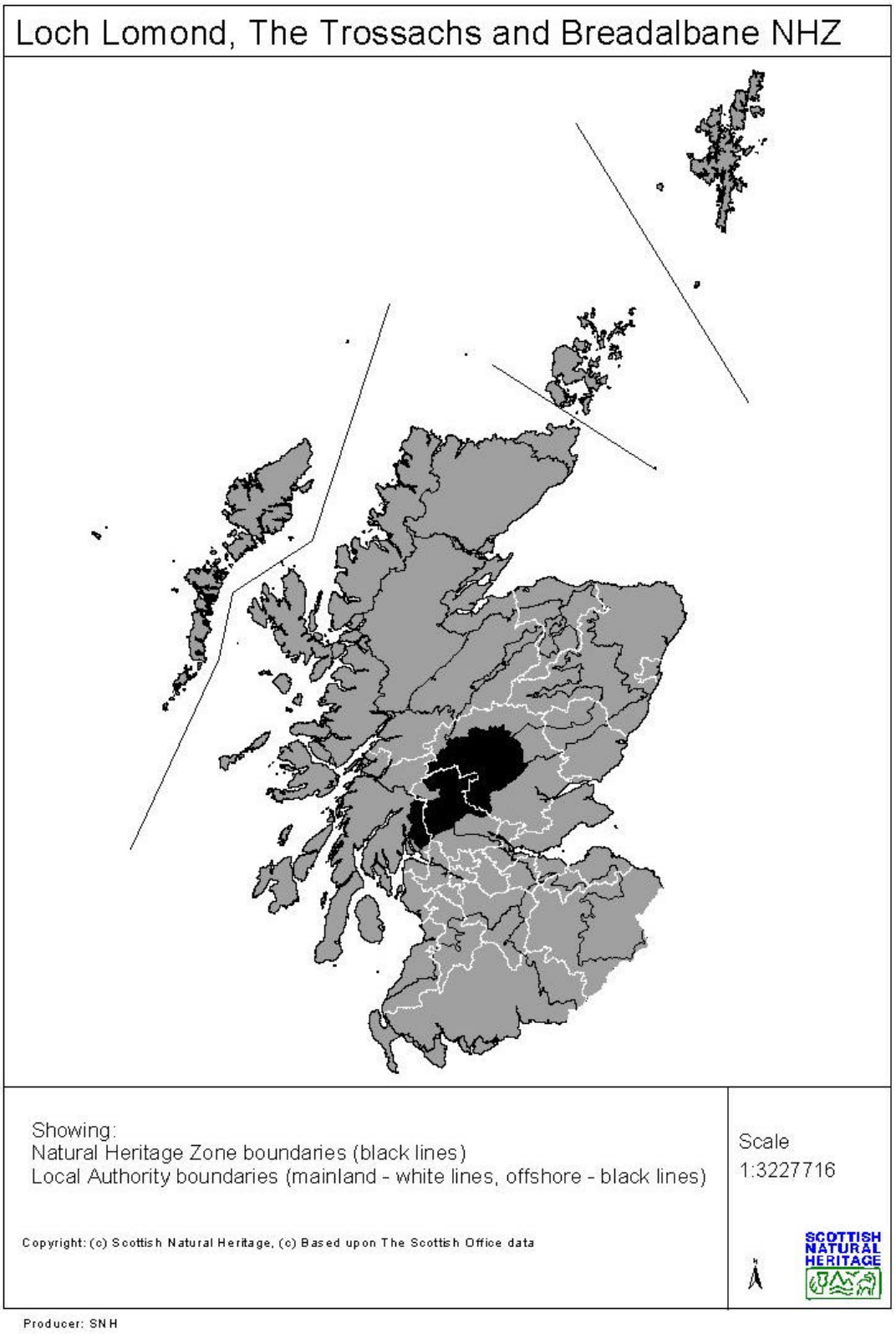
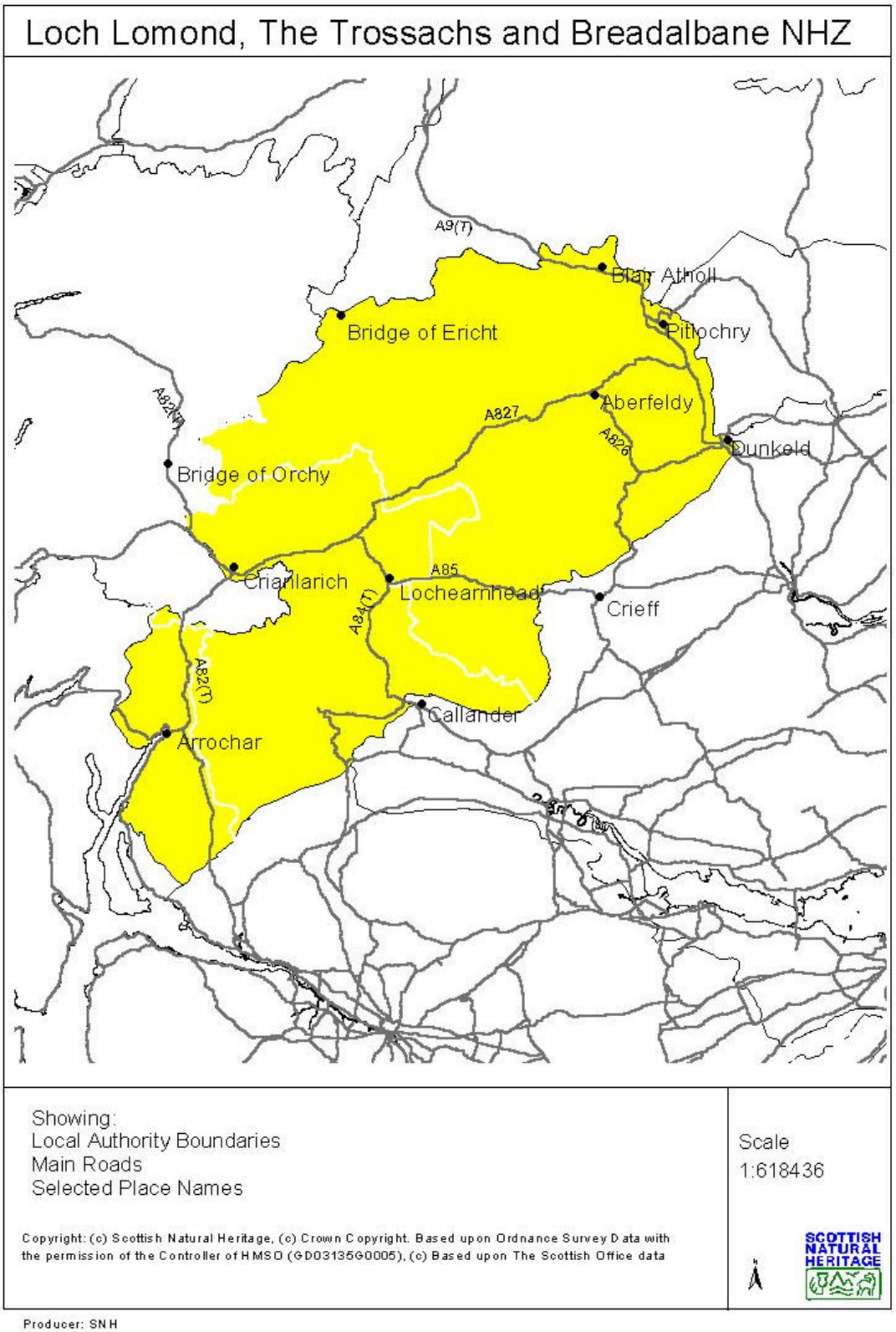


***Fig: Map of key elements of Loch Lomond, The Trossachs and Breadalbane.***



# Summary

7. Loch Lomond, The Trossachs and Breadalbane comprise an area of spectacular highland mountains intimately mixed with woodlands, moor and farmland and is remarkable for its numerous large lochs. The southern boundary of this zone is delineated by the Highland Boundary Fault – a defining structure in Scotland's geology. The area supports an exceptional range of wildlife – for example the uplands contain unusually nutrient-rich bedrocks which support a remarkable diversity of alpine habitats and species, some of which occur nowhere else in Scotland. Settlements consist of relatively isolated towns and villages, mostly concentrated on the southern and eastern edges of the zone. The zone encompasses much of the catchment of the Tay and the Forth and has sweeping expanses of open water, including Lochs Lomond, Tay and Rannoch. Collectively these lochs and rivers support many unique fish populations. Although some areas such as Glen Lyon remain comparatively remote, much of the zone is very accessible to the densely populated central belt, and is very popular for tourism and informal outdoor recreation. Much activity is focused on the famous Munros of the Arrochar Alps, Ben Lomond and Breadalbane whilst Loch Lomond, Loch Earn and Loch Tay are very popular for water-based recreation. Tourism and outdoor recreation are strongly dependent on the natural heritage, and represent an important source of local income and employment, with agriculture forestry and sport fishing also playing a key role in the local economy. The outstanding natural and cultural heritage, and recreational resources of this zone are reflected by the inclusion of much of the south western area within the proposed Loch Lomond and The Trossachs National Park.

8. This extensive upland area, though of relatively limited agricultural productivity, is more fertile than many other highland areas and grazing levels have, therefore, tended to be higher than elsewhere.

9. A number of trends have influenced the natural heritage in the past 50 years, including:

   Large numbers of grazing animals leading to:
   - loss of native woodland and impoverishment of the upland landscape;
   - deterioration and loss of alpine habitats such as montane and upland heaths;
   - loss of river bank and river edge vegetation, with probable effects on freshwater fisheries.

   Growth of intensive forestry plantations, leading to:
   - loss of upland habitats, and the open character of upland landscapes;
   - changes in runoff response with adverse effects on freshwater ecosystems, particularly during the planting phase.

   Recent programmes of native woodland restoration and restructuring of some commercial forests, leading to:
   - local re-establishment and expansion of native woodland, usually protected by fencing;
   - re-design of some commercial plantations for wildlife, access and landscape benefits.

   The regulation of water systems for water supplies, hydroelectric power and other developments, resulting in:

- Modified lochs and river systems with altered flow rates and changing water levels;
- Inundation and loss of haughlands when reservoirs were built.

Growing popularity of tourism and informal outdoor recreation, leading to:

- improved quality of life and greater enjoyment of the natural heritage;
- demand for development, with the risk of negative impacts on landscapes;
- adverse environmental effects resulting from private vehicle use and local development of visually intrusive upland tracks.

A number of current initiatives will have an impact on the natural heritage of this zone in the coming years. These include government-led strategies such as the Rural Development Regulation; the implementation of the European Directives on Birds and Habitats, new access legislation, the Land Reform agenda; the production of Local Biodiversity Action Plans, and last but by no means least, the establishment of Scotland's first National Park in Loch Lomond and The Trossachs.

10. Among the key challenges facing those concerned with the natural heritage of the zone are:

    - The need to develop a sustainable agriculture which would provide adequate farm incomes but also involve levels of grazing which would sustain key characteristic elements of the zone such as arctic alpine and other plant communities, and woodland regeneration, both in the uplands and along river and loch shores;

    - The need to maximise the nature conservation, landscape and access opportunities arising out of the restructuring of mature conifer plantations, including the strategic expansion of native broadleaved woodland to re-establish a woodland habitat network;

    - The need to manage recreational activities such as motorised water sports and hill walking so that high demand for recreation does not compromise the natural heritage value of the zone and its appreciation by others, or the operational requirements of land managers; and,

    - The need to manage the freshwater resources of the area, and the activities that impact upon them, in such a way as to maintain (and in some instances enhance) their overall quality, both as an ecological resource and as a source of drinking water for the adjoining urban areas.

11. Local communities, enabled by relevant public and voluntary bodies and guided by the principles of sustainable development, should play an increasing role in shaping the future environment of this area.

# Description
# Loch Lomond, The Trossachs and Breadalbane

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

12. The landscape of Loch Lomond, The Trossachs and Breadalbane is mountainous with an intimate mix of forest and lochs, renowned and much-valued for its scenic beauty, and supporting a rich natural heritage of plants and animals. The south eastern boundary of the zone is marked by the Highland Boundary Fault and there are important geological and landform features which strongly influence the present landscape. The mountain glens, formed by glaciation and erosion, contain fast flowing rivers, numerous large lochs, scattered settlements, communication routes such as road and rail, and patchworks of enclosed farmland as well as substantial areas of forests and woodlands. Local communities are largely dependent upon the natural heritage, through estate management, farming, forestry, tourism or recreation provision.

13. The southern and eastern areas of the zone, particularly Loch Lomond, The Trossachs and the A9 corridor, are easily accessible from the highly populated central belt area and attract large numbers of visitors. This influx of tourists and visitors contributes significantly to the local economy but can also impose pressures on the natural heritage.

14. Much of proposed area for The Loch Lomond and Trossachs National Park is contained within the boundaries of this zone.

***Geology and landforms***

15. The mountains of Loch Lomond, The Trossachs and Breadalbane once formed part of an immense mountain chain stretching from what is now eastern USA through Scotland to Scandinavia. Overall the geology is mainly comprised of schists, locally rich in calcium, with some outcrops of metamorphosed limestones. There are also smaller amounts of metamorphosed sandstones, coarse-grained sediments, quartzite, grits and volcanics. It is the relative abundance of calcium which has led to the richness of many of the montane and other plant communities (so called 'calcareous' or 'base rich' vegetation). The Highland Boundary Fault, a defining structure in Scotland's geology, lies along the southern edge of the zone, forming a dramatic contrast between the mountains to the north and the lower-lying Midland Valley to the south. The village of Comrie, to the east of the zone and lying close to the Highland Boundary Fault, is notable as a site of seismic activity and the location of the first purpose-built seismological observatory.

16. Weathering over hundreds of millions of years and, more recently, glacial erosion have left an upland landscape dissected by narrow glens radiating from Rannoch Moor, the main ice centre during the last ice age. Parts of the high ground still support arctic-alpine plants and remnant arctic willow scrub, providing a reminder of this era. The ice age glaciers left many good examples of moraines, particularly around Tyndrum, Glen Dochart, Glen Artney and Glen Turrett.

***Upland Habitats***

17. The montane habitats are diverse, reflecting the differences in exposure to the harsh climate, geology, soils and the history of land management. Soils range from poor acid soils to fertile calcareous soils associated with the limestone outcrops.

18. The montane semi-natural habitats reflect an altitudinal gradient, with extensive and relatively undisturbed vegetation. High summits, corries, plateaux and ridges show contrasting effects of exposure and snow-lie, each with characteristic 'base-rich' alpine plant communities. Nationally rare plants with major population centres in the zone include alpine bartsia, arctic gentian, and alpine woodsia. The plants found in pockets where snow lingers into early summer and in flushes where the snow melts are a particular feature of this zone, and include the rare and specialised liverwort *Marsupella stableri.* Blanket peat areas are extensive on the poorly- drained plateaux where rainfall is high, while the steep slopes with knolls, craggy gullies and cliff faces support many rare mosses, liverworts and lichens. Heaths, montane grasslands (many derived from heathland) and flushes have developed on the steeper slopes. Outcrops of calcareous rocks at lower levels produce fragmented areas of limestone pavement locally and species-rich areas of limestone grassland. Calcium enriched ground waters surface to form fens, which are equally diverse in plant species such as the rare false sedge *Kobresia simpliciuscula*. Ben Lawers has long been regarded as one of the richest mountains in Britain for its flora (including flowering plants, mosses, liverworts and lichens) and hosts species such as alpine forget-me-not and drooping saxifrage, as well as being the only British site for bristle sedge. Together with other Breadalbane hills, this upland massif is internationally renowned as a refuge for 'base-rich' arctic-alpine plants communities, for plants of cliffs and rock faces and for willow scrub.

19. The mountain massifs also support golden eagles, twite, ravens, ptarmigan and, on some of the high tops, dotterel. Other typical upland birds include both red and black grouse, the former mostly associated with heather moorland. The montane grasslands of Breadalbane form the main UK stronghold of the mountain ringlet butterfly.

20. Ben Lomond is the most southerly hill massif in Scotland with altitude approaching 1000 m. It retains remnants of the full range of upland plant communities from low to high altitude.

***Forests and Woodlands***

21. Forests and woodlands make a very significant contribution to the natural heritage of this zone. The total area is in excess of 80,000 ha, of which around 20,000 ha is broadleaved woodland and 5,000ha pinewood of semi-natural appearance. The remainder is conifer plantation or mixed woodland of various types. The native woodlands – typically oakwoods in the glens, ash woodlands in gorges and gullies, and birch and Caledonian pinewoods elsewhere, represent the fragmented remains of much more extensive woodland cover in the past. Woodland would have been present as a continuous link from lowland to upland, from oak and locally scattered ash woods in the glens through to birch and pine with juniper scrub and arctic willow scrub on the high ground up to the natural altitudinal limit. Native woodlands, particularly 'ancient' woodlands which have been in existence for at least 250 years, are particularly valuable features of the natural heritage.

22. The Loch Lomond and The Trossachs area supports an exceptionally diverse and extensive area of Atlantic oakwoods, with a significant proportion of the Scottish total. These woodlands, such as those at Rowardennan and around Aberfoyle, support summer visitors such as redstarts and pied flycatchers, and characteristic mosses and lichens. The rare pearl bordered fritillary butterfly can be found in some places. Capercaillie, the largest British gamebird, was reintroduced at Taymouth castle near Loch Tay in the nineteenth century after it had become extinct

in Scotland and is still present in small and scattered populations throughout the zone despite recent catastrophic declines in its numbers. In particular, and although it has disappeared from the woods on the mainland shores of the Loch, the species continues to thrive in the oakwoods of the Loch Lomond islands. There are also important examples of old coppice oak woods in Strathearn and in the Tay valley; and there are some extensive areas of birch woodland in the Loch Rannoch and Loch Tummel areas, in Glen Lochay and Strathtay. These include areas of downy birch which support many rare invertebrates. Patches of upland wood pasture containing very old trees have been identified at Glen Finglas.

23. Remnant Caledonian pinewoods include the Black Wood of Rannoch and Meggernie in Glen Lyon. More than any other type of wood, these provide a feeling of what the primeval forests of Scotland might have been like. Unlike those in Speyside and Deeside to the north, the pinewoods at Rannoch and Meggernie have considerable quantities of birch thoughout them, which may reflect the fact that these are amongst the most southerly of the native pinewoods and close to the transition into woods of oak, birch, ash and so on. Pinewoods have a relatively low biodiversity, but the species found here, in many circumstances, are specialised pinewood dwellers: for example, plants like the Lesser Twayblade, Chickweed Wintergreen, and the Intermediate Wintergreen.

24. Other types of woodland such as juniper, ash/elm woods, valley woodlands and alluvial woods tend to be much more restricted in distribution. Juniper, like arctic willow scrub, is often only found on rock outcrops well out of reach of grazing deer, sheep and goats in some areas, but more extensive areas do occur, such as in Glen Artney. Ash and aspen appear particularly susceptible to grazing and tend to be found only in gorges and ravines and on steep slopes where some elm may also survive, despite the ravages of Dutch elm disease. Alder woods on flood plains are scarce throughout Scotland, but occur here around ox-bows on the larger rivers. Similarly, valley alder/ash woods, which are often rich in plant life, including oceanic lichens, mosses and liverworts, are restricted to a few remote hillsides.

25. Extensive areas of non-native conifers in large new forests are conspicuous features of many of the lower mountain slopes. Most of these forests consist primarily of single species, mostly spruce, larch or pine, of the same age, but ‘restructuring’ following felling is increasingly creating opportunities for much greater diversity of species and age structure. In places a long history of estate management has led to the development of diverse, well-thinned and mature productive woodland high in amenity and economic value, such as the larch and conifer woods around Blair Castle and near Dunkeld.

26. The primary benefit from non-native forests continues to be timber. Native woodlands have been seen as largely unproductive for timber since the demise of local industries such as tanning and charcoal burning. However, all woodlands are now increasingly seen as providing much wider benefits, and there are good examples of well-managed native woodlands within the area.

***Agriculture***

27. There is a natural progression of farming types from the upland rough grazing down to the valley bottom mixed arable and grasslands. The steep slopes, thin soils and harsh climate of the uplands prevent intensive farming. Abandoned or poorly maintained march fences extending for long distances across ridge and mountain tops are a reminder of past attempts to manage livestock more effectively. Some

upland areas are actively managed as sporting estates for deer or grouse. Heather moorlands are maintained on grouse moors, in part, by muirburn.

28. There is little opportunity for the agricultural improvement of grassland on the steeper slopes. Bracken is established in many areas as a result of the loss of past tree cover, reductions in herds of hill cattle (herds which trampled and suppressed bracken fronds), and the increased numbers of sheep. Elsewhere, land enclosure, drainage, re-seeding and land improvement have replaced unimproved pastures and traditional hayfields, but significant areas of herb-rich pasture and wetlands remain. Breadalbane supports significant and important areas of species-rich calcareous grasslands which are associated with limestone and mica-schist. These grasslands occur on the higher and lower slopes on unenclosed land and within the inbye.

29. On the valley floors there are areas of more intensive arable cultivation and more widespread use of fields for hay or silage.

30. The wildlife value of farms in the area is often very high. The mixture of improved and unimproved grassland, wetlands, river and loch sides, heathland and open hill land provides habitats for many species which have been declining in numbers elsewhere in Britain in recent times, such as red grouse, black grouse, lapwing, snipe, redshank, curlew, ring ouzel, skylark, water vole, orchids and fritillary butterflies.

***Rivers, Lochs and Streams***

31. The varied upland landscapes, from the rolling terrain of eastern Breadalbane to the more rugged ground of The Trossachs, are reflected in the extent and variety of fresh waters in zone 15, making it one of the most important areas for this resource in Scotland. The lochs and rivers are very important from a natural heritage perspective and in addition many are important salmon and trout fisheries. River catchments within the zone include the upper reaches of the Tay and the Forth, whilst the principal lochs include much of the northern part of Loch Lomond as well as Loch Earn, Loch Tay and Loch Rannoch. The physical and chemical features of many of the rivers and streams are characteristic of the upland topography and geology found north of the Highland Boundary Fault, with many steep, fast-flowing, boulder-strewn reaches, and water generally low in nutrients. The lochs, like the rivers, are fairly unproductive, and are mostly of high water quality. Habitats associated with both lochs and rivers include peatlands, grasslands, open water, seasonally inundated foreshores, fens and reed swamps and this series of inter-linked freshwater systems creates an exceptional diversity of habitats.

32. There are three main river sub-catchments: the north and middle basins of Loch Lomond with their associated inflows; the upper reaches of the Rivers Teith and Forth which drain into the Firth of Forth; and the upper tributaries of the River Tay - the largest river by volume in Scotland as well as the longest. The River Teith system in particular provides one of the best examples in Scotland of a comparatively unmodified, diverse river system. Of particular note are the populations of lampreys and salmon. Annual salmon catches for the Tay District Salmon Fishery Board are consistently among the highest in Scotland although, in common with many other rivers, there is concern over declines.

33. The lochs range substantially in size across the zone. In addition to the large lochs mentioned above there are medium-sized water bodies such as Lochs Voil and Chon, Dunalastair Water and Loch Freuchie as well as small peatland pools and

corrie lochs scattered throughout the area. Loch Lomond – the largest loch in Scotland by surface area and length of shoreline - is 'a unique site' in terms of the high diversity and unique combination of fish species: there are nineteen species of freshwater fish in Loch Lomond including the rare powan (one of only two natural Scottish populations). Loch Rannoch supports populations of three distinct sub-species of arctic char. Other lochs support nationally scarce water plants, including thread rush and the water lily *Nuphar pumilla.* Small lochs and lochans can also support the elusive and beautiful red-throated and black- throated divers.

34. With few exceptions, the larger lochs in the zone, such as Lochs Tummel, Lomond and Katrine, have been dammed or otherwise regulated for water supply or to produce hydroelectric power. Many of the other waterbodies have similarly been created or dramatically enlarged following dam construction (e.g. Loch Lyon, Lochan na Lairig, the reservoirs in Glen Lednock, Glen Turrett and Glen Finglas etc.). Many rivers are also regulated for water abstraction. Loch Katrine provides an example of long-established and successful catchment management in Scotland, dating back to the visionary water supply scheme for Glasgow initiated more than 100 years ago.

***Landscapes***

35. This highland landscape is characterised by an interplay of water, forest, mountain and glen which has rich historical and cultural associations. It has captured the imagination and inspired many famous artists, writers and painters – for example Sir Walter Scott's 'Marmion' , 'Lady of the Lake' and 'Rob Roy', or Gerald Manley Hopkins' 'Inversnaid' – as well as underpinned the outstanding value of the area for generations of tourists. The value of the landscape is reflected in the high proportion of the zone that is designated as National Scenic Areas (NSA). Six different NSAs occur entirely or partly within the zone and much of the rest is classed by local authorities as Areas of Great Landscape Value. There are also a number of Historic Gardens and Designed Landscapes, particularly in the northern glens of the zone. Significant examples include Blair Castle, north of Pitlochry, and Taymouth Castle near Aberfeldy.

36. The valley farmland also contributes significantly to the character and interest of the landscape. The pattern of isolated farmsteads with drystane dykes and open pasture, set against a back drop of rugged mountains, steep valley sides and woods, is a powerful attraction in areas such as Glen Lyon and Loch Tummel side.

37. There is a wealth of visible human history in the zone and thousands of sites have been recorded, including several hundred Scheduled Ancient monuments. Early pre-Christian evidence is in the form of monuments associated with burials and other rituals. They are evident in the landscape as irregular mounds which break the natural contours of hills, low ridges and river terraces. Earliest evidence of settlements exist from the Iron Age when stone was used for defensive buildings such as forts, such as at Dunmore near Callander. These extensive earthworks with stone walls remain as significant landscape features. There is also much visible evidence of the large-scale depopulation in the years post 1745 when crofters were moved from the highland glens to make way for sheep. Abandoned settlements, sheilings and field systems are scattered throughout the zone.

38. Small villages originally developed along the valley bottoms, some on the major lines of communication, at bridging points or crossroads. Many were clusters of houses built for farm workers within walking distance of the land they were working. The area also contains a large number of estates, the buildings of which are often of a

distinctive architectural style which was subsequently reflected in other properties in the area. The local character and architectural style of these scattered settlements also contributes to the value of the landscape. The Glenlyon Estate village of Fortingall is a local curiosity, with thatched cottages inspired by the Arts and Crafts movement.

39. Most of the remaining settlements are found towards the eastern boundary in the busy A9 corridor which also contains a rail link, and in the eastern part of the River Tay from Aberfeldy to the A9. Many of the buildings in these settlements date from the 19th century when there was a flurry of building in response to the general 'improving' nature of the age and also to accommodate the growing numbers of tourists visiting the area. More recently there has been further tourism related developments such as caravan sites and chalet developments. On the eastern side of the zone accessibility by road has determined more recent small scale expansion of housing around larger settlements with some commuters travelling to major centres such as Perth and Stirling. To the west, communication routes in the Loch Lomond area are more strongly linked to Glasgow. Much of the area between these road/rail corridors is, however, difficult and slow to access, owing to the sparse and often steep and winding character of the road network.

***Recreation***

40. Outdoor recreation is very important to the resident population and to the many visitors. Large numbers of day visitors engage in a range of recreational activities, both on land and water, and there are many passive sightseers. The area has played a key role in introducing large numbers of urban people to the beauty and joys of Scotland's countryside. These visitors contribute significantly to the local economy, although in some places they contribute to congestion, erosion and disturbance. The mountain landscape is a major attraction in the area and provides one of the most popular hill-walking areas in Scotland, including numerous Munros such as Schiehallion, Ben Lawers, Ben Lomond, Ben Ime and the two Ben Vorlichs, as well as Corbets like Ben Venue and Ben Ledi. Ben A'an and the Cobbler are popular walking summits as well as having rock climbs. The West Highland Way crosses the zone, as does the recently completed Lowland Highland Trail which forms part of National Cycle Network route 7. These are extremely popular for day trips as well as for those undertaking longer journeys. Winter recreation includes ski mountaineering and winter climbing.

41. This area is one of Scotland's prime venues for water-based recreation, particularly on Lochs Lomond, Earn and Tay, where there is sailing, windsurfing, water-skiing, and pleasure craft, with jet skiing being notable on Loch Lomond. Canoeing and rafting is also enjoyed in some places, most notably on the River Tay, but also on the River Teith and Earn. Angling, mainly for game species is a widespread and economically significant activity.

42. The shores of Loch Lomond are also the location of the Loch Lomond Golf Course, which is gaining a reputation as an international venue. Golf courses can provide opportunities for natural heritage benefits if managed appropriately.

43. The Queen Elizabeth, Loch Tummel and Argyll Forest Parks managed by Forest Enterprise provide recreational facilities for a range of abilities including forest walks, forest drives, picnic areas, view points and opportunities to watch wildlife. These are actively managed forests where access is generally un-restricted, with only occasional felling and other management activities resulting in temporary local closures. Similar access is often encouraged, with appropriate management, in

some private woodlands. The local footpath networks often take advantage of existing forest tracks and walks, for example around Aberfoyle, Callander, Comrie and Dunkeld and Birnham. Multiple use of forests, e.g. for mountain biking and horse riding is also increasing. New community woodland initiatives are under way at Crianlarich and Callander and are closely linked to the communities and facilities for visitors. It is anticipated that Core Path Networks will develop and evolve over time to ensure that they meet the needs of both local people and visitors to the area.

# 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.

44. The natural heritage of Loch Lomond, The Trossachs and Breadalbane is shaped by a wide variety of factors, including geology, climate and human activity. It is essential to understand the most important past and present trends in order to identify ways in which the natural heritage can be sustained and used in the future.

***Climate change***

**45.** Current predictions of climate change suggest that the next few decades will see a shift towards warmer, wetter and windier conditions, particularly towards the west coast. Such changes could lead to various effects on the natural heritage of this zone, including the possible decline of alpine habitats and associated species, and increased incidences of flooding. The balance between different habitats will normally shift somewhat in response to natural long-term changes in climate, but the projected climatic changes are of unusual magnitude, and are largely of human origin. The consequences for Loch Lomond, The Trossachs and Breadalbane are hard to predict. The likelihood, however, is that species that prefer wet, warm and humid conditions such as the plants of the atlantic oakwoods will extend their distribution, whereas species dependent upon alpine habitats will decline.

***Agriculture and Sporting Activity***

46. Agriculture is an important land use across much of the area and is largely based on rough grazing for sheep, making an essential contribution to the local economy. In recent decades, high stocking levels, encouraged by support under the EU Common Agricultural Policy, have contributed to a long-term decline in native woodland and scrub; alpine and other upland habitats; and loss of biodiversity on lowland farmland. Recent monitoring has shown that one particular upland species, the golden eagle, appears to have suffered a marked decline in the number of young fledged per nest in recent years. This is likely to be partly due to the heavy sheep grazing pressure over past years resulting in poorer habitat condition and consequently fewer prey items. Sheep numbers are now declining, and likely to fall further due to changing agricultural incentives. Current demonstration projects such as the Hill Sheep and Native woodland project run by the Scottish Agricultural College at Kirkton Farm are exploring the economic and natural heritage benefits of combining hill sheep farming with new multi-purpose native woodlands.

47. Other recent trends in farming include the intensification of crop production on the lower ground and the increased use of herbicides, pesticides and fertilisers. There is also a trend towards silage production rather than the traditional hay meadows of the past.

48. Sport shooting of red grouse and red deer is a widespread land use in a number of upland areas, and elevated deer numbers have contributed to the lack of woodland regeneration and the decline in condition of upland plant communities. However, active Deer Management Groups and the production of agreed deer management plans can help reduce these problems. Other management activities associated with field sports and agriculture, such as muirburn, drainage and hill track

construction have also sometimes resulted in soil erosion, vegetation damage and intrusion on upland landscapes.

***Forestry and Woodland Development***

49. In past decades, open hill ground was widely used for new commercial forestry and many areas, such as the hills around Lochs Lomond, Ard, Lubnaig, Tay, Tummel and Rannoch, and east of Aberfeldy, now include extensive plantations of exotic conifers. Many older plantations reflect outdated standards of design, providing few opportunities for wildlife or recreation; having adverse effects on rivers and streams; and imposing an uncharacteristic homogeneity of texture of the rugged, dappled upland landscape. There is currently a growing trend towards the use of these forests as a multi-purpose resource, and the re-structuring of such plantations at the end of their current rotation is providing opportunities to achieve much greater environmental and recreational benefits.

50. In common with most of the Scottish uplands, Loch Lomond, The Trossachs and Breadalbane has lost a very high proportion of its former native woodland, primarily because of a long history of clearance and grazing. This long-term trend has begun to change in the last decade as a result of native woodland restoration supported by incentives such as the Forestry Commission Woodland Grants Scheme (WGS), although the effectiveness of such schemes is currently constrained by the need for deer fencing. Dramatic examples of this approach are being developed at Glen Finglas, Cashel, Loch Katrine, Ben Lawers and at smaller sites in Perthshire by Tayside Native Woods.

***Freshwaters***

***51.*** Salmon and trout fisheries in the area have declined during the last century. The causes of this trend appear to be complex and may well include factors operating outside the zone such as changes in sea temperature. Some rivers, e.g. the River Braan, have never supported salmon populations because of natural barriers to migration. Freshwater ecosystems are sensitive to various activities taking place within their catchments, and some have been disrupted by the introduction of non-native species as bait. Grazing and clearance have resulted in a long-term decline of riparian woodland, which contributes essential nutrients to fresh waters. Most water bodies and river systems within the zone have been modified for hydroelectric and water supply purposes.There is also considerable water transport between sub catchments, e.g. between Glen Lyon and Glen Lochay. The end result is that flow rates and water levels in a large part of the Tay system and elsewhere are highly modified. Increasing sedimentation and mild acidification of fresh waters across the area are thought to have occurred as a result of activities such as drainage, afforestation and the introduction of dams for drinking water and hydro use, while pollutants enter the system over a much wider area and result from land management techniques. The implementation of the Water Framework Directive across river catchments throughout the zone should provide a powerful and welcome stimulus to more sustainable management of the freshwater resource.

***Recreation, Access and Tourism***

52. Outdoor recreation and tourism provide major sources of local income and employment, and depend in large measure upon the landscapes and wildlife of the area. Loch Lomond, The Trossachs and Breadalbane are readily accessible to the urban population of the central belt, and have seen significant increases in these activities in recent decades, in part because of improved transport infrastructure and increases in mobility and disposable income. These activities greatly enhance the quality of life of participants and increase public awareness of the natural

heritage, but can also cause environmental damage. Water-based recreation is popular and well established, notably on Loch Lomond, Loch Tay and Loch Earn. There are unresolved conflicts between active recreation of this nature and other more passive recreational activities such as fishing and picnicking. Widespread use of private transport to such locations contributes to greenhouse emissions and hence climate change. Concentrated recreational use can erode the landscape qualities on which such activities depend, for example through development of visually intrusive car parks and hill tracks. Managing recreation and providing opportunities for responsible access will be key tasks for the proposed National Park Authority. This work will be taken forward in line with access proposals in the Land Reform (Scotland) Bill which will require new partnership initiatives.

***Development***

**53.** The "sense of place" of the area, which is the product both of the characteristic landscapes and of its social and cultural history, is fundamental and its enjoyment by residents and visitors alike. It can, however, easily be eroded through a cumulation of unsympathetic developments, which may appear relatively insignificant in isolation, but which taken together greatly dilute and even transform the character of an area. There are also pressures for built developments in the countryside, including housing, tourism and telecommunications facilities, renewable energy schemes, mineral extraction and flood defence schemes such as the recent river engineering works at Comrie. Some of these land use changes and developments are either beyond the scope of the Town and Country Planning system, for example chalet developments on land under crown exemption; or are classified as Permitted Development (under the terms of the General Permitted Development Order), examples here being hill tracks, masts and agricultural buildings.

***Conservation policy***

54. Increasing public awareness of environmental issues has resulted in the development of various conservation policy initiatives to protect key ecological resources. Many parts of the area carry national or international designations, including Sites of Special Scientific Interest (SSSI) and areas designated under the EC Habitats and Birds Directives. These designations help to protect particularly valuable habitats and species.

55. The involvement and empowerment of local communities will also increasingly influence the natural heritage of this area. There are good local examples in the recent participative approach to the development of the proposed Loch Lomond and Trossachs National Park, as well as the community engagement in the Stirling Local Biodiversity Action Plan, and the 'capacity building' initiatives being developed by 'Community Futures groups' such as that at Brig O'Turk.

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

*The* Vision *sets out how Loch Lomond, The Trossachs and Breadalbane 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 the 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 Loch Lomond, The Trossachs and Breadalbane and a consensus on the way forward.* ***It is written in the present tense, in the year 2025.***

56. Loch Lomond, The Trossachs and Breadalbane provide a showcase of sustainable land use in the Scottish uplands, not just within the area included in the Loch Lomond and The Trossachs National Park, but across the entire zone, where ideas and experience developed within the Park have been applied. Local communities actively participate both in guarding the characteristic qualities of the local environment, and in restoring biodiversity and creating new landscape resources. Natural heritage objectives are closely integrated with land management, ensuring the continued value of the area for local communities, for tourism and for outdoor recreation, and for providing a range of other socio-economic benefits.

***Agriculture and field sports***

57. The inbye grasslands of glens within the zone support numerous lapwings, curlew and snipe, and black grouse feed and lek on grasslands on the edge of the moorland. Some grasslands are managed for a late hay crop, and they, and the remaining unimproved base-rich grasslands are consequently rich in wildflowers, butterflies and other insects, and numerous waders. There is support for sympathetic management of inbye grasslands for wildlife, with relatively low numbers of sheep and increased numbers of cattle. Reduced levels of stocking also result in high quality lamb and beef, including organically produced products, which find new markets based on their environment-friendly image.

58. Heathland habitats, and regenerating woodland and scrub, are protected and enhanced by widespread adherence to a revised Muirburn Code, and grouse populations thrive. Moorland raptors such as hen harrier are a common sight on the grouse moors, with the condition of the habitat and good predator control ensuring that their numbers are in balance with grouse populations. Wild and unmanaged upland landscapes are safeguarded through an agreed Code of Practice for ATV use. The construction of new hill tracks has ceased, and existing tracks are sensitively managed to check erosion damage. The characteristic drystane dykes are maintained as part of the cultural landscape. This management approach is maintained by an ethic of care backed up by public opinion and where appropriate, financial support, and is underpinned by planning legislation.

59. Healthy deer populations are widespread in the area, with their numbers reduced to a level at which they are in balance with other land uses and interests, including regeneration of woodland, and upland biodiversity. The population levels are in accordance with agreed Deer Management Plans, with members of Deer Management Groups working co-operatively to achieve this.

60. Mountain and moorland habitats are being appropriately managed, and the impact of climate change on key upland species monitored. Alpine heaths and rare

calcium-loving plant communities are grazed less intensively and in excellent condition, supporting their full associated range of specialised wildlife. Native woodland is undergoing widespread natural regeneration, with alpine willow scrub beginning to expand to fill a higher proportion of suitable ground. Many high corries carry increasing areas of colourful tall herbs with abundant globeflower and water avens reminiscent of alpine meadows. Peatlands are either intact or in improving condition. The zone contains stable populations of upland species such as dotterel, mountain hare and ptarmigan. Increased availability of natural prey means that golden eagles are once again producing enough young to sustain their population, and have colonised all suitable areas.

61. Management is encouraged by appropriate positive incentives channelled through agricultural support, agri-environment measures and other mechanisms. These include, within the National Park area, an integrated land management support scheme run by the Park Authority itself. This shift in emphasis has strengthened the environmental stewardship role of the hill farming industry. This pattern of management creates a range of opportunities for field sports, including large, healthy stags and woodland grouse, in an environment renowned for its wildlife and where illegal poisoning of raptors no longer occurs. The way in which highland field sports are practised and their role in environmental management, has helped to assure for them a positive image amongst the wider public.

***Forestry and woodland***

62. Native woodlands are developing in appropriate areas by natural regeneration, extending up to natural treelines in places. Deer fencing is a rare sight on the uplands, with deer numbers reduced to levels locally compatible with tree regeneration. This woodland expansion links patches to create extensive areas of interconnected native woodland which complement the non-native element. These woodlands show a varied structure, with trees of all ages and diverse ground vegetation, and support their full potential range of characteristic species, including a healthy population of capercaillie at Loch Lomond. Deer fencing is a rare sight on the uplands, with deer numbers reduced to levels locally compatible with tree regeneration. Invasive species such as rhododendron are kept in check, having been eradicated from the woodlands with highest conservation value. These mature native woodlands are managed in a way which provides benefits in terms of shelter, sporting use, timber and recreation, as well as enhancing the landscape. Sustainably produced woodland products are marketed locally for specialist use in furniture and flooring, and help contribute to the value of native woodlands.

63. Commercial forestry is a multi-purpose industry, integrating natural heritage and production objectives. Commercial forests fit well with the landscapes of the area, and are of diverse structure and species composition, including native broadleaved trees and Scots pine. Sitka spruce and other exotic conifers are also managed in ways which enhance the forests' value as wildlife habitats and landscape features, with longer rotations, thinning and selective felling. Clear felling is largely restricted to areas no longer considered suitable for commercial forestry, where replanting of softwood will not occur. These measures and these forests provide strongholds for key species such as red squirrel and goshawk. The sensitive design of forest roads and the repair and reinstatement of old, intrusive tracks enhances the working landscape of commercial forests.

***Freshwater***

**64.** The freshwater ecosystems of the zone are approaching optimal condition, with high quality water and a wide range of associated wildlife. Salmon are abundant on the spring runs of rivers such as the Teith and Tay, and summer runs of multi-sea-winter fish on the Tay are increasing as a result of fisheries management sympathetic to all fish species. Widespread restoration of riparian woodland enhances the landscapes of glens and straths, and improves both woodland and freshwater habitats. The integrity of freshwaters is maintained by Integrated Catchment Management, including the enhancement of riparian habitats and the improvement of floodplain management which helps to reduce the need for downstream flood defences. Society's need for public water supply and hydro-electricity is balanced with biodiversity, landscape and recreational objectives and operated in a sustainable way. Catch and release policies are widely practised by sporting fisheries in order to maintain stocks and sawbill ducks are managed on a scientific basis, with selective culls restricted to key locations along the rivers where they are clearly demonstrated to be making a significant impact on fish populations.

***Recreation, access and education***

65. The area remains a mecca for a wide range of recreational pursuits. Informal outdoor recreation is well-informed; attuned to the needs of the natural heritage and local communities; and where possible well linked to sustainable transport networks. This includes the use of well developed boat transport on the major lochs. Footpath repair operates within a properly co-ordinated and funded framework and is in balance with recreational use, with ongoing maintenance contributing to local employment. Mountain bikes are used with sensitivity, based on established tracks into the glens rather than footpaths and off-path routes, according to agreed systems of voluntary restraint. Informal recreation in the uplands co-exists with other land uses in a spirit of mutual co-operation, based on the foundation of the Scottish Outdoor Access Code. This code is underpinned by effective communication networks, including Local Access Fora.

66. Forest tracks are integral components of the recreational resource, accommodating cyclists, walkers and a wide range of other recreational pursuits. Loch Lomond, Loch Earn and Loch Tay accommodate sustainable levels of recreational activity, both water-based and on adjacent land. Potential adverse effects are addressed by a combination of voluntary agreements under the framework provided by the Outdoor Access Code and zoning systems. Areas are linked to each other and to the West Highland Way through Core Path Networks. These are a popular and nationally recognised feature of the National Park and adjacent areas, and have been developed with the full support and involvement of local communities.

67. The informal education system demonstrates a strong integrated network of environmental education practitioners which helps to raise awareness and understanding of the natural heritage to both visitors and local communities, while the formal education system and schools actively engage with the natural heritage on their doorstep – the 'outdoor classroom'. Opportunities for environmental education in the area have also been extended to schools outwith the zone, and this helps to raise awareness of the natural heritage amongst children from more urban areas in the central belt.

***Tourism***

**68.** Tourism is based on the sustainable use of the natural heritage, the underlying resource on which the industry largely depends. The size and location of visitor

facilities are in line with the carrying capacity of the environment, and are guided by co-ordinated management strategies developed in partnership by the agencies concerned in consultation with the local resident communities. Similarly, visitor centres, signage and information points within the zone are planned according to an agreed Interpretation Strategy, and help visitors to learn about the natural heritage of the area and how they can assist its conservation as well as enjoying it. Tourists are also well served by networks of integrated sustainable transport including buses, boats and cycle routes which give them they access to a range of recreational pursuits. The long-term viability of many key habitats and species is reinforced by a range of green tourism initiatives, for example, CCTV coverage of rare birds. Such initiatives make a modest but significant contribution to the local economy, and to the quality of life for local people.

***Development***

69. Telecommunication masts rarely intrude upon the landscape, due to a combination of rationalisation of infrastructure, technological advances and more effective planning control. This has resulted in more appropriate siting, design and mitigation of masts in sensitive areas. Likewise, windfarm developments are only sited where the landscape can satisfactorily assimilate them, avoiding conflict with natural heritage interests, but contributing positively towards the use of renewables and the reduction in greenhouse gases. Sensitively applied planning regulations ensure that new housing and other developments, including agricultural buildings, are sympathetic to their surroundings and where possible constructed from locally sourced materials. Development sites also incorporate appropriate habitat creation or enhancement and thus provide gains for the natural heritage. Within the National Park area, financial assistance is available to land managers where there is a higher cost involved in meeting the higher quality building standards required.

***Community involvement***

70. People living in local communities are taking initiatives through 'Community Futures' groups to conserve wildlife and manage access to land, recognising the contribution this makes to their social and economic well being and their quality of life. The natural heritage is also used as a resource for social inclusion policies. Local Access Fora are established across the area and work together in fruitful partnerships. Local people also contribute significantly to the successful initiatives taken forward by the National Park area and are actively involved in a well established Community Planning process. A strong sense of 'grass-roots' ownership of the natural heritage is shown together with working models of sustainable practice. These initiatives are all helping to foster widespread recognition of the intrinsic value of the natural heritage and the critical role of the natural environment in the local economy. The natural heritage is managed in order to ensure that this resource can sustain rural incomes on an indefinite basis.

# 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 the light of current changes. Once this 'big picture' 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 Prospectus*.*

**1. To restore and enhance key upland habitats, including arctic alpine plant communities, alpine willow and other scrub communities, blanket bogs and heather moorland.**

71. **Grazing** by deer, sheep and, in some areas, feral goats has resulted in the loss of heather moorland, trampling of fragile peat and alpine soils and the confinement of grazing-sensitive habitats, such as tall herb vegetation, to less accessible sites. Such changes do not benefit agricultural or stalking interests in the longer term and undermine important resources such as heather cover, which provides valuable winter grazing for deer. The best examples of these key upland habitats are contained within extensive upland areas designated as SSSIs and management action should be focussed on achieving optimal management of these sites. The Ben Lawers National Nature Reserve also supports an outstanding range of upland wildlife and could act as a demonstration of such management. However valuable habitats also occur outwith such sites and a redirection of **agricultural support** towards environmental objectives could provide a more secure long-term income for the hill farming industry. This approach will often require less intensive production methods, and could readily be targeted on local or niche markets, rather than seeking to compete in the wider commodity markets. **National Park** designation could offer excellent opportunities to develop distinctive local brands. Overall there is a need to promote diversification of upland land use and sustainable stock grazing levels, such as the integrated management including forestry, stocking with native cattle and eco-tourism such as is currently being developed at Glen Finglas.

72. Stalking estates can often achieve sustainable management by more extensive culling of hinds, resulting in considerable improvements in stag condition and little overall change in stag populations. Such changes would benefit stalking interests and encourage native woodland expansion, opening up new opportunities based on woodland game.

73. Well-managed **muirburn** can help to maintain diverse moorland vegetation, and some hill farms and sporting estates already adopt good practice guidelines. Such high standards are not always observed, however, and burning can extend onto vulnerable habitats such as blanket bog, resulting in heather loss and soil erosion. Similar effects can occur where heavy grazing immediately follows burning. In some locations, poorly constructed **access tracks** have accelerated soil erosion, damaging blanket bogs on fragile deep peat. Such impacts can be reduced by

improved design and construction, as already demonstrated by some estates in the zone. Ideally, the construction of tracks should be minimised, and wherever possible sensitive ATV use promoted as an alternative management tool.

74. Bracken cover has also increased slightly in recent decades and targeted management to prevent further invasion of upland grasslands may be required in some places.

75. The expansion and restoration of upland habitats will need to be balanced with the expansion of native woodland (see below), and will also depend on the wider effects of climate change and to a lesser extent, acid deposition. The control of greenhouse gases and other pollutants is being addressed at national and international levels, but potential may exist for a reduction in local emissions through, for example, the appropriate use of renewable energy. Peatland restoration also contributes through reducing loss of carbon to the atmosphere. Implementation of **Local Biodiversity Action Plans** will also help to enhance a range of habitats and will require co-ordination between all relevant bodies and conservation policy mechanisms.

- **Pursue the following priority objectives through Rural Stewardship Schemes/Woodland Grant Schemes: rural diversification; sustainable stock grazing; native cattle; integrated farming and forestry; best practice moorland management; peatland restoration.**
- **Shift the emphasis of agricultural production towards quality not quantity, and use local environmental quality branding to help sell premium produce.**
- **Modify deer management in conjunction with estates, Deer Management Groups and the Deer Commission for Scotland, developing Deer Management Plans which assess damage to the natural heritage and identify population levels that will achieve habitat restoration.**
- **Develop a more appropriate valuation of estates that is based on a range of natural heritage attributes rather than focussing on stag numbers.**
- **Develop and support joint training programmes to share knowledge and experience in moorland and upland management – e. g. initiatives such as those at Kirkton Farm, Ben Lawers, Ben Lomond, Glen Finglas.**
- **Continue to monitor key alpine species to assess the rate and effects of climate change.**
- **Reduce greenhouse gas emissions through increased energy efficiency and appropriate use of renewable energy.**
- **Establish positive management agreements for SSSIs and European sites.**
- **Incorporate both statutory and non-statutory conservation objectives in Development Plans, and implement Local Biodiversity Action Plans.**
- **Use NNRs to demonstrate best practice upland management and involve local communities as appropriate.**

**2. To secure widespread recovery of native woodland and scrub, where possible by natural regeneration, and to encourage the enhancement and multi-purpose management of existing native and commercial woodland.**

76. Across most of the this zone **native woodland regeneration** is prevented by sheep and deer, accompanied in some areas by feral goats, and many existing native woods are in long term decline as a result of excessive grazing. Muirburn can also damage juniper scrub and suppress woodland regeneration. Woodland expansion and management would benefit agricultural, sporting and natural heritage interests and there are thus strong economic and ecological arguments in favour of reduced stocking and better woodland management. Native woodland provides habitat for woodland game and important winter shelter for stock, and increases the productivity of adjacent pasture. The decline of some woodlands has been accelerated by indiscriminate harvesting, but if managed sustainably, such woodland may provide valuable small scale sources of timber and firewood on a long term basis. The loss of **riparian woodlands** may also jeopardise economically important salmon and trout stocks.

77. Native woodlands are also under threat from development such as rural housing and buildings for local industry and tourism. Development plan policies should steer such development away from native woodland sites, and particularly avoid ancient woodland.

78. Widespread increases in native woodland could also enrich and diversify the upland landscape and improve opportunities for informal recreation, enjoyment and tourism. Community Woodland Schemes are already underway at various sites including Strathfillan, closely linking the restoration of woodland with local amenity benefits, and there is potential for many more initiatives of this type.

79. The biodiversity of native woodland can be maximised by adoption of the **Forest Habitat Network** principle, in which patches of woodland are sufficiently closely juxtaposed to allow many woodland species to migrate between them. A strategically planned woodland network could provide important linkages between existing and new woodlands, and overall would provide more benefits to the natural heritage than *ad hoc* expansion. Within such frameworks, large **Core Forest Areas'** could provide reservoirs from which woodland species can disperse to other patches of suitable habitat. For many key species, the precise requirements of the woodland network which will favour their conservation are not fully understood, and further research may be required to obtain optimal benefits from this approach. This Forest Habitat Network concept allows better integration of woodland development with other land uses, and with the needs of cultural heritage conservation, as there is flexibility in achieving the benefits of the woodland network over some areas of ground whilst maintaining open ground for other land uses. Multi-purpose management of commercial woodland could make an essential contribution to the proposed Forest Habitat Network. Strategic planning based on such networks would also maintain a balance between woodland and moorland, helping to maintain characteristic and highly valued species such as moorland wading birds and birds of prey.

80. The atlantic oakwoods of Loch Lomond and The Trossachs and the Caledonian pinewoods of Rannoch are among the most valuable **woodland habitats** of the zone and are a high priority for expansion, perhaps within larger Core Forest Areas.

These might extend the Loch Lomond woods eastwards towards Glen Finglas and link those at Rannoch with the woods and forests of the Tay, Tummel and Glen Lyon, and across to the Glen Falloch pinewood to the west and Strathspey to the north. The floodplain forests and other woodlands along the Tay and lower Tummel could be expanded, along with the oakwoods around Loch Earn and upper Strathearn. There is also great potential for restoration of treeline scrub with Scots pine, juniper, willows and locally, dwarf birch, in turn promoting the wider recovery of species which inhabit the moorland-woodland boundary.

81. Many **commercial plantations** are dominated by even-aged exotic conifers which support relatively little wildlife, both because of their dense, uniform structure and the intrinsically limited biodiversity associated with non-native trees. The wildlife and landscape benefits of commercial plantations could be increased by re-structuring to include native species such as scots pine and birch, with natural transitions to adjacent areas of open ground. Opportunities should also be sought where appropriate to follow best practice guidelines, for example leaving streamsides unplanted and restoring previously planted bog areas. Changes to forest management techniques including long term rotations and continuous cover silviculture could also provide benefits for the natural heritage.

82. Many ancient and long-established **native woodlands** contain significant proportions of exotic conifers, either because of deliberate planting or uncontrolled spread from adjacent plantations. Such trees can compete vigorously with native species, often reproducing freely by natural regeneration, and their removal is already underway in many forests owned by Forest Enterprise, such as Rowardennan woods. Many oakwoods have also been invaded by rhododendron, forming a dense understory which shades out the local ground flora. Eradication of this can be difficult and costly, but it is a key requirement of management in the sites of highest importance. An example of where this has been successfully tackled can be found at Craigrostan woods at Inversnaid.

83. The restoration and management of native woodland is now encouraged by the Forestry Commission WGS and other grants. At present these schemes generally depend on **deer fencing** although recent policy guidance is encouraging less reliance on this. Deer fences can create intrusive features in landscapes of wild and unmanaged appearance, obstruct recreational access, and present a serious hazard to woodland grouse. The use of fencing, particularly for planting, can result in unnaturally uniform age structures of woodland, which supports a smaller range of wildlife, and further increases grazing pressure outside the exclosure. Deer fencing is therefore no substitute for effective deer control and increased culls are now underway on some estates. The wider adoption of such strategies will require a co-ordinated approach extending across estate boundaries.

84. Designs for both new and existing plantations/woodland developments should take account of local landscape character, for example using Landscape Character Assessments. Indicative Forestry Strategies identify sensitive areas for new planting on a regional scale, whereas **Local Forestry Frameworks** are able to take on board local natural heritage sensitivities in relation to woodland expansion and management. These set out local opportunities and constraints for forestry and provide detailed design guidance.

- **Promote the updated Muirburn Code.**
- **Achieve native woodland expansion and restoration through the Heritage Lottery Fund, European Funds, Rural Stewardship Scheme, Woodland**

**Grant Scheme and Farm Woodland Premium Scheme, in the context of Indicative Forestry Strategies and Local Forestry Frameworks.**

- **Modify deer management in conjunction with estates, Deer Management Groups and the Deer Commission for Scotland by developing Deer Management Plans which assess damage to the natural heritage and identify population levels that will achieve woodland recovery in priority areas through natural regeneration.**
- **Continue to monitor the size and distribution of capercaillie populations, and wherever possible minimise the use of deer fencing around regenerating woodland and remove redundant deer fences.**
- **Develop, support and ensure the wider implementation of demonstration schemes (e.g. Glen Finglas, Cashel, Loch Katrine, Tayside Native Woodlands) to promote appropriate native woodland restoration and management.**
- **Extend positive management agreements for SSSIs and European sites.**
- **Implement relevant elements of Local Biodiversity Action Plans.**
- **Adopt multi-purpose objectives in commercial WGS schemes and revised Forest Design Plans and long term Forest Plans, including integration of native broadleaved woodland elements and open space within plantations, greater species diversity and diversification of age structure and use of continuous cover (shelterwood) techniques;**
- **Remove underplanted and regenerating exotic conifers and rhododendron from ancient and long-established native woodlands under Plantations on Ancient Woodland Sites (PAWS scheme), utilising incentive WGS/WIG grants.**
- **Develop markets for sustainably produced woodland products.**
- **Incorporate both statutory and non-statutory conservation objectives for the safeguarding of native woodland in Structure and Local Plans.**

**3. To restore the full potential range and viability of upland and woodland species characteristic of the zone, including golden eagle, ptarmigan, capercaillie, black grouse, spotted flycatcher, tree sparrow, pine marten, otter, red squirrel, mountain ringlet butterfly, pearl-bordered fritillary butterfly**

85. The positive management of moorland and woodland, as proposed above, are prerequisites for long-term maintenance of the full range of wildlife in the area, subject to the effects of climate change. More targeted action may however be necessary to ensure the future of **key species** which are subject to specific pressures. This includes those listed above.

86. One of the key species, the native **red squirrel,** is a popular and widely-recognised feature of our woodland wildlife, but has been displaced across much of Britain by the introduced grey squirrel. There are populations of the red squirrel in zone 15, but grey squirrel populations are also established in many woodlands. The spread of grey squirrels, habitat fragmentation and disease appear to be the main factors causing loss or decline of red squirrel populations. Research has indicated that certain types of woodland and forest management, such as discouraging the planting of large seeded broadleaves, will favour reds over greys.

87. **Capercaillie** are established within the zone, but populations are threatened due to loss of appropriate habitat, exacerbated by poor breeding success in recent years

and fatalities through collisions with deer fences. Managing woodland in ways that benefit capercaillies, such as creating a diverse and vigorous shrub layer and avoiding the use of deer fencing could be more widely promoted.

88. **Sporting estates** commonly control species which are regarded as vermin, and this is believed to result in the accidental or deliberate killing of protected species such as pine marten, wildcat and birds of prey. There are no windfarms in the area at present, but any future applications should be carefully assessed in order to avoid adverse effects on upland species and habitats.

89. **Local Biodiversity Action Plans** will help to address these issues and will be implemented by a partnership approach. There may also be potential for new '**eco-tourism'** initiatives, offering sustainable economic benefits and providing long-term protection for certain high-profile species – for example the peregrine closed circuit television (CCTV) project at Queen Elizabeth Forest Park Centre, Aberfoyle, and possible initiatives to transmit live pictures from eagles eyries located in the area.

- **Monitor populations of red squirrel, capercaillie and other BAP priority species and promote opportunities to undertake positive habitat management to enhance populations of such species.**
- **Implement recommendations of UK Raptor Working Group in conjunction with police and the RSPB;**
- **Develop and implement Local Biodiversity Action Plans for key habitats and species;**
- **Investigate eco-tourism potential of transmitting 'live' eagle pictures from a location in The Trossachs.**
- **Encourage public interest and participation in LBAPs and local Biological Recording Centres.**

**4. To restore the biodiversity of lochs, rivers and other wetlands, including maintaining natural riparian processes along watercourses, and improve the status of freshwater habitats and species, including lampreys, atlantic salmon, powan, arctic charr and water voles.**

90. The **extent and variety** of fresh waters in this zone make it one of the most important areas for this resource in Scotland. The lochs in particular contribute significantly to the landscape character of the area. Whilst the freshwaters are in good condition overall, certain aspects of the freshwater natural heritage could be in much better condition. **Riparian woodland** and other vegetation are frequently absent, reducing the crucial inputs of plant material which underpin freshwater food chains. High levels of grazing and trampling, inappropriate muirburn, peatland drainage and poorly designed tracks can all contribute to soil and bank erosion, leading to increased sedimentation of fresh waters, and the distribution of sediment in some areas has also been modified by river engineering. Closely-planted commercial conifers can result in mild **acidification,** particularly in some parts of The Trossachs, and can cause increased levels of phosphorus in water bodies. Land preparation techniques associated with older plantations have altered runoff rates and catchment response. These processes could affect various freshwater habitats including salmon spawning beds, but cannot always be quantified or distinguished from natural processes or from changes in flood and storm frequency as a result of climate change. These influences should therefore be addressed on

a precautionary basis, and management initiatives have already been introduced by some District Fishery Boards.

91. Most water bodies in the zone have been dammed for **hydroelectric** schemes or as drinking water **reservoirs**. The implications of controlling water levels in this way are poorly understood despite altering the physical dynamics of the systems in a very fundamental way. There is a need to investigate the impacts of the hydroelectric developments on the rivers and lochs of the area and to look at ways of doing this. A pilot is currently being undertaken on the Tummel/Garry. As our understanding improves and perhaps new problems become apparent, ways of mitigating the undesirable consequences of regulation on habitats, biota and landscapes will need to be explored.

92. Impacts associated with **agriculture** are mainly confined to the wider straths of the Tay in the north east of the zone where more intensive agriculture is practised. The major source of pollution from farming is enrichment from diffuse agricultural run-off, as well as inflows from pesticides and herbicides. In parts of the zone, spillage of sheep dip into running waters presents a seasonal threat. Rural settlements can affect water quality through sewage discharges, and although not a significant impact at present, the potential impact of new built development needs careful consideration. An integrated approach to **catchment management** should be adopted, drawing together all relevant land use interests. A Loch Lomond catchment management plan of this nature is currently being prepared under a joint Water Authority/SEPA/SNH initiative.

93. Some aspects of **fishery management** such as control of sawbill ducks and cormorants, have a questionable scientific basis as the impact of such predators on salmonids has not been clearly demonstrated. Current culls are generally precautionary. On some rivers, streams and lochshores, angling management can contribute to the deterioration of existing riparian woodland. Damage to these habitats can also result from poorly managed **water based recreation** in the more popular locations.

94. The natural processes of erosion, deposition and flooding and important features of a healthy freshwater ecosystem, and it is important to tackle any problems, such as localised flooding, in a sensitive environmental way, rather than resorting to inappropriate, over-engineered schemes.

95. The increase in the distribution of mink and reduction in optimal water margin habitat has led to a huge decline in the distribution of water voles in the area. Water voles are now found in only 10% of the sites where they were present 50 years ago. Water vole populations are now largely confined to the upper reaches of catchments in the area where there are smaller populations of mink.

96. Further research is still required on many freshwater topics but the implementation of the **Water Framework Directive** and the production of River Basin management plans will be a significant step forward.

- **Establish integrated catchment management under the Water Framework Directive in partnership with other agencies, to benefit the freshwater environment and freshwater species such as the atlantic salmon, lamprey and otter.**
- **Develop Fishery Management Plans.**

- **Improve conditions for salmon and other species by improved provision of spawning areas; improved operation of dams and fish passes; and sympathetic management of bankside vegetation.**
- **Prevent the modification of rivers to permit the introduction of species not naturally present.**
- **Initiate and promote schemes demonstrating sustainable river management and environmentally sensitive flood prevention measures.**
- **Ensure a scientific rationale for permitting predator control of fish-eating birds.**
- **Collaborate with appropriate agencies over research and survey and commission further research where impacts/issues are poorly understood.**
- **Encourage review of current water abstraction policies and the implications of this for the natural heritage.**
- **Encourage adoption of water guidelines for Forestry and Agriculture.**
- **Implement actions in LBAPs with regard to water voles and freshwater pearl mussels.**

**5. To maintain and restore low ground habitats, such as grasslands, with their associated plants, birds and invertebrates.**

97. Farmland and associated habitats can support a range of wildlife – mammals, invertebtrates, resident and migrating birds and diverse plant communities, and represent important refuges of biodiversity within the zone. The landscape character is also closely associated with past agricultural practices. This zone contains species-rich inbye grasslands, particularly in the Breadalbane area, which are important in a national context. Certain agricultural practices such as reseeding, application of chemical fertilisers and pesticides, use for potatoes/winter feed crops etc are threatening these remaining sites. The change from traditional management as a hay meadow to silage production also erodes this resource. Other activities such as drainage, use as winter stock holding areas with inappropriate stock feeding practices, bracken invasion, nutrient transfer from improved grassland, fragmentation and under-grazing, are all causing continued decline and loss. Such changes tend to reduce biodiversity and landscape diversity.

**98.** High stocking levels and year round grazing on pastures is encouraged by current agricultural support mechanisms. This is generally unfavourable for grassland biodiversity. The ideal stocking density and grazing pressure will vary between sites and from season to season but needs to be tailored to the type, age and structure of the vegetation. The new Rural Stewardship Scheme aims to move away from production incentives towards broader environmental objectives and more appropriate management of valuable habitats such as grasslands, wetlands, field margins and hedgerows. This will generally involve a move towards lower intensity farming methods.

- **Establish which management practices, including grazing regimes (such as stocking levels, season of grazing, type of stock etc) are most appropriate for the restoration and enhancement of grasslands;**
- **Increase local participation in the development of appropriate management, through agri-environment schemes such as the Rural Stewardship Scheme.**
- **Support joint training programmes to share knowledge and expertise and promote good practice.**

- **Survey and map all the remaining unimproved grasslands within the zone.**
- **Produce and implement LBAP action plans for key habitats species occurring on farmland within the zone.**
- **Develop markets and added value for products from low intensity farming, such as local farmer's markets.**

**6. To maintain high quality landscapes, in particular the quality and diversity of uplands, with a mosaic of open moorland, hillside woodlands, and sheltered glens with enclosed fields and dispersed settlements.**

99. The high quality and character of the landscape contributes to the local identity of the area as well as to tourism and outdoor recreation**,** and is therefore an important economic resource. New **built development** is often required to provide for tourism and other economic activities, or to provide new housing in towns and villages. Developments which are poorly designed or of inappropriate scale or location can adversely affect the character of the landscape. This can include the construction of unsympathetically designed or sited agricultural buildings.

100. Guidance is required to promote the most appropriate new development and maintain the existing features which contribute to the landscape character of the area. It is also important to ensure that the planning process ensures that new development provides a net gain in natural heritage terms. Opportunities here include sensitive siting of developments and appropriate management or restoration of existing habitats; creation of new habitats; and landscaping, including the use of appropriate native tree and shrub species in planting schemes. The Landscape Character Assessments provide a framework for guiding development in a local context.

101. **Telecommunication masts** have become widespread during the past decade, particularly along road corridors, creating strong vertical features of 'industrial' character which frequently occupy prominent positions. Provision of the required network should be sympathetic to the landscape. Greater mast sharing and improved mast design should be encouraged as part of compliance with the forthcoming implementation of revised planning procedures.

102. Despite their undoubted environmental benefits, **wind energy** developments and hydro-electricity schemes can intrude upon rugged upland landscapes, and any future proposals should be carefully managed through the planning system to minimise their impact on such landscapes.

103. During the last 50 years, there has also been a significant increase in the construction of **tracks** for agriculture, field sports or woodland management, and the creation of informal tracks by frequent use of All-Terrain Vehicles (ATVs). Such features often represent highly visible scars on the open hill landscape, undermining the wild qualities which underpin tourism, outdoor recreation and field sports. Many bulldozed tracks penetrate to the remote upland core, and most parts of the zone are now within 5 km of the nearest private access road. These developments incrementally erode the remoteness and inaccessibility of the upland core. Such developments could be addressed in part by the extension of planning control at national level, to include agricultural operations. Alternative approaches to hill access for management purposes also need to be explored and promoted so that

land management can be carried out effectively without undue impact on the natural heritage.

104. Felling and second rotation planting provide opportunities to redesign uniform, angular conifer blocks and some land managers, including Forest Enterprise, are rectifying outdated designs in some parts of the area. **Commercial plantations** are now subject to more stringent design requirements, which should incorporate comprehensive landscape assessment to ensure that forestry does not adversely affect this resource or economic activities which depend on it. More diverse planting and smaller-scale felling could further integrate forestry with landscape interests.

105. **Mineral extraction** in the zone is currently confined to fairly small-scale sand, gravel and slate quarries; the limestone quarry near Blair Atholl, and the barytes mine near Loch Tummel. The effects of the abstraction on the landscape are very localised, however transport of the material away from sites can cause noise and disturbance locally.

- **Promote the use of Landscape Character Assessment in the planning and management of development.**
- **Seek natural heritage gain through local development plan policies and planning agreements.**
- **Use local development plan policies to steer development away from the most sensitive natural heritage areas and seek to incorporate important habitats, species and landscape features within development design, mitigation and restoration.**
- **Ensure that tourism-related built facilities are sympathetic towards sensitive landscapes through appropriate scale and design.**
- **Ensure housing and other developments in the countryside are sensitive to landscape and secure high standards of design for approved schemes.**
- **Consolidate the telecommunications network, promoting joint use by different service providers to minimise the number of masts required, as well as improved design of masts.**
- **Promote compliance of windfarm and telecommunication mast developments with Planning Authorities Development Plans and promote Environmental and Landscape Assessments.**
- **Develop and promote a Code of Practice for ATV use.**
- **Promote the control of proposed hilltracks through the planning system.**
- **Carry out remedial work to restore hill tracks and ATV scars to natural ground, supported by research, grant-aid and positive management agreements.**
- **Adopt multi-purpose objectives in Woodland Grant Schemes and revised Forest Design Plans, including integration of native broadleaved woodland elements and open space within plantations, diversification of age structure and the use of continuous cover techniques.**
- **Promote the adoption of Local Forest Frameworks across the whole zone.**
- **Promote understanding of the employment and economic benefits which result from the distinctive high quality landscape character of the zone.**

**7. To improve provision for responsible outdoor recreation in appropriate locations, including the vicinity of settlements, commercial forests and water bodies, in balance with the wider natural heritage and with the support and involvement of local communities.**

106. **Recreational opportunities** can be less plentiful in the **lowland areas** around towns and villages, and are not always well promoted. Better information on paths and access opportunities is required, and some new routes are needed, particularly to link existing routes and provide greater integration of recreation with **public transport**. Some initiatives for providing **sustainable transport** for visitors around the area are being developed, but more still needs to be done to reduce the use of private cars. The overall route network should cater for users of all abilities, including walkers, cyclists and horse riders. Proposals for a right of responsible access to land and water will be debated by the Scottish Parliament during 2001, and will include the development of signposted and maintained **Core Path Networks**. The involvement of local communities in the planning and development of Core Path Networks, and their participation in **Local Access Fora**, is likely to be a fundamental requirement of the new legislation. Should these proposals become law, greater funding should become available for the planning and management of access. As well as benefiting the environment, safe routes for cycling and walking have obvious health benefits for individuals Walkers, cyclists, boat users and others participating in outdoor recreation also provide a wide range of potential opportunities for the local economy through the provision of facilities and services.

107. Local Authority **Access Officers** currently have a crucial role to play in planning and developing managed access, with influence at strategic and local level. The work of these access officers is supported and complemented by the work of countryside rangers.

108. At times, difficulties may arise between different recreational pursuits, and with other land uses and community interests. A co-operative, planned and managed approach is essential in order to increase recreational provision and maximise local economic benefit while ensuring that any adverse impacts of recreation on the environment and on land management activities are minimised. Local Access Fora will have a key role in this approach as will the promotion of a new code of responsible behaviour – the **Scottish Outdoor Access Code.**

109. Commercial **forests** are generally of high recreational carrying capacity and many forms of outdoor recreation are compatible with their management, with some restrictions for operations such as felling and timber extraction. A few commercial forests do however harbour sensitive species including ground-nesting birds and rare plants. There is also considerable scope for **water-based recreation**, although zoning systems may need to be considered in some areas to separate incompatible activities in time and/or space alongside adherence to the Scottish Outdoor Access Code by different recreational users.

- **Establish countryside access strategies which take into account the needs of locals communities, visitors, land managers and the natural heritage, and facilitate a planned and managed approach to countryside access.**
  - **Develop, promote and maintain well-designed Core Path Networks that provide a wide range of opportunities for responsible outdoor recreation for residents and visitors, particularly in the vicinity of settlements.**

- **Integrate local and long distance footpaths, cycle tracks and horse-riding routes, including the West Highland Way, and encourage the integration of these with public transport networks.**
- **Increase provision of routes suitable to meet demand from horse riders and cyclists, particularly in Perth and Kinross.**
- **Develop visitor management plans in the context of WGS or Forest Design Plans to optimise recreational use while recognising natural heritage sensitivities.**
- **Develop a water based recreation strategy for the major water bodies through the adoption of a local Access Strategy, integrating the different and sometimes competing land use interests.**
- **Promote responsible behaviour in accordance with the new Scottish Outdoor Access Code.**
- **Ensure sustainable use of the natural heritage by the tourism industry.**
- **Establish and maintain a GIS database for footpaths, cycle tracks and other access routes in those parts of the zone not presently covered.**

**8. To encourage access to the uplands while safeguarding sensitive aspects of the natural heritage.**

110. **Mountain recreation** greatly enhances the quality of life of participants and makes a substantial contribution to the local economy. These activities, the wider tourism industry and the sense of place enjoyed by local residents are all dependent, to varying extents, on the rugged and spectacular character of the upland landscape, where human intervention is less evident than in lowland areas. These landscape qualities should be protected from cumulative attrition by tracks, inappropriate vehicle use and poorly-sited, intrusive man-made structures (see objective 7). The construction or informal development of tracks also incrementally erodes the inaccessibility of more remote areas, reducing their value for informal outdoor recreation.

111. Mountain recreation can result in some localised effects on natural heritage interests, particularly where there has been little previous management. In recent years there has been significant investment in **footpath repair** focused on popular hills such as Ben Lomond and Ben Lawers, but erosion has continued in other areas. Little funding is currently available for such work, or for ongoing maintenance and this requires to be addressed.

112. A national *Concordat on Access to Scotland's Hills and Mountains* was agreed by the Access Forum in 1996. A number of initiatives have followed on from this agreement, including the Glen Dochart and Glen Lochay **Hillphones service**, allowing hillwalkers and deer stalkers to continue to enjoy their activities without disturbing each other. Responsible behaviour, by both land managers and recreational users, will be further encouraged by the proposed Scottish Outdoor Access Code.

- **Develop a co-ordinated programme of partnership action for upland footpath repair.**
- **Promote responsible behaviour in accordance with the new Scottish Outdoor Access Code;**

- **Extend the Hillphones system as necessary, together with other co-operative approaches – e. g. Internet, local information centres, Post Offices;**
- **Maintain the wild qualities of the hill landscape and encourage the 'long walk in' where this is the most appropriate form of access to such areas.**

**9. To increase awareness and understanding of the natural heritage of Loch Lomond, The Trossachs and Breadalbane.**

113. To help achieve **sustainable development**, it is desirable that people can appreciate both the intrinsic value and diversity of the natural heritage and the economic benefits which it provides. Various initiatives could advance this objective, including interpretation and ranger services on designated and other sites, and the development of resource packs for schools and other educational facilities.

114. Recreation and tourism provide excellent opportunities to increase public awareness of the natural heritage, but visitors often lack information about the biodiversity and earth science interests of the area. Opportunities to learn about the local natural heritage also enhance visitor enjoyment. Visitor Centres with well planned interpretation, such as The Trossachs Discovery Centre at Aberfoyle can provide such opportunities, as can on site interpretation and guided landrover tours such as those being developed at Glen Finglas by The Woodland Trust. Other facilities, such as the crannog at Loch Tay, provide a link between the natural and cultural heritage. Community liaison is also an important channel of communication that needs to be promoted and maintained. Key features of interest could be promoted by a partnership approach to ensure adequate publicity, access and interpretation, thus developing the wildlife tourism potential of the area.

**115.** The development of community learning plans provides an opportunity to incorporate environmental education, including opportunities for projects on the local natural heritage, making use of the available opportunities for local residents of all ages. The natural heritage issues identified in this prospectus could be used as a basis for the natural heritage component of such plans.

- **Develop local educational projects both in schools and outwith the formal education sector through the ranger service, as well as appropriate advice and grant aid.**
- **Develop environmental education within community learning plans.**
- **Increase community involvement and understanding of the natural heritage through initiatives such as Stirling Community Futures, Local Biodiversity Action Plans, Community Planning, Lifelong Learning and Social Inclusion partnerships.**
- **Develop "geo-tourism", with integrated interpretation linking geology, soils and landforms with environmental and cultural history;**
- **Consider different ways of effectively engaging local people in shaping the future natural heritage of their area.**
- **Ensure sustainable use of the natural heritage by the tourist industry by supporting increased adoption of the Green Tourism Award scheme;**
- **Provide training for leisure managers and wildlife operators in visitor management techniques that protect the natural heritage resource.**
- **Increase awareness and understanding of natural heritage resource and sensitivity among tourism operators and marketing bodies**

***This table identifies the key 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 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Angling Associations, e. g. SANA | | x | | x | x | | | | |
| Argyll and Bute Council | x | x | x | x | x | x | x | x | x |
| Argyll and the Isles Enterprise | | | | | | | x | x | x |
| Deer Management Groups | x | x | | | | | | | |
| District Fishery Boards | | | | x | | | | | |
| Centre for Ecology and Hydrology | | | | x | | | | | |
| Community Councils and other community fora | x | x | x | | | | x | x | x |
| Deer Commission for Scotland | x | x | | | | | | | |
| Developers | | | | | | x | | | |
| Farming, Forestry & Wildlife Advisory Group | x | x | x | x | x | x | | | |
| Forestry companies | x | x | x | | | | x | x | x |
| Forestry Commission & Enterprise | x | x | x | x | | x | x | x | x |
| Game Conservancy | x | x | x | | | | | | |
| Heather Trust | x | | | | | | | | |
| Highland Birchwoods | | x | | | | | | | |
| Historic Scotland | | x | | | | x | | | |
| Landowners & Farmers | x | x | x | x | x | x | x | x | x |
| Local Biodiversity Action Plan partners | x | x | x | x | x | | | | |
| Local Natural History Societies | x | x | x | | | | | | x |
| Local Tourist Boards | x | x | | | | x | x | x | x |
| Local Record Centres | x | | x | | x | | | | |
| Loch Lomond & Trossachs National Park Authority | x | x | x | x | x | x | x | x | x |
| Mountaineering Council of Scotland | | | | | | | | x | x |
| National Farmers Union of Scotland | x | x | | x | x | x | x | x | x |
| Non-governmental conservation bodies (NTS,SWT,RSPB,WT, JMT, RSFS, FoLL) | x | x | x | x | x | x | | x | x |
| Paths For All Partnerships | | | | | | | x | x | |
| Perth and Kinross Council | x | x | x | x | x | x | x | x | x |
| Police | | | x | | | | | | |
| Power companies | x | | | | | x | | | |
| Ramblers Association | | | | | | | x | x | x |
| Raptor Study Groups | | | x | | | | | | |
| Research groups and institutes | x | x | x | | | | | | |
| Schools, nurseries and out of school care | | | | | | | | | x |
| Sportscotland | | | | | | | x | x | x |
| Scottish Agricultural College | x | x | | | x | | | | |
| Scottish Enterprise Forth Valley | | | | | | | x | x | x |
| Scottish Enterprise Tayside | | | | | | | x | x | x |
| Scottish Environment Protection Agency | | | | x | | | | | |
| Scottish Executive | x | x | x | x | x | x | x | x | x |
| Scottish Gamekeepers Association | x | x | | | | | | | x |
| Scottish Landowners Federation | x | x | x | x | x | x | x | x | x |
| Scottish Tourist Board | | | | | | x | x | x | x |
| Scottish Wildlife and Countryside Link | x | x | x | x | | | | x | x |
| Stirling Council | x | x | x | x | x | x | x | x | x |
| Tayside Native Woodlands & Scottish Native Woods | | x | | | | | | | |
| Universities and tertiary colleges | | x | x | | | | | | x |

| Stakeholders | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Telecommunications industry | | | | | | x | | | |
| Timber Growers UK | | x | | | | | | | |
| Water sports clubs/associations | | | | | | | x | | x |
| Water authorities (WoSW, ESW) | | x | | x | | | | | |