



# OPTIONS PAPER THE PROTECTION OF WILD LAND IN SCOTLAND

Wildland Research Institute, University of Leeds

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The task set for this option paper was to identify arguments for bringing together both biodiversity and landscape in the protection of wild land in Scotland – to show that there is advantage in looking at these two things jointly. This is a departure from the view that wild land in Scotland is primarily about wider landscape and cultural values, historically driven by recreational values, and protected solely by development management. The paper identifies a biophysical basis for identifying wildness, and the current positive drivers that enhance wildness. Options are given as to how to protect wild land areas, showing community and social benefits where applicable.

The views in the paper represent those of the authors alone, prepared in response to a brief provided by the John Muir Trust.

*Corresponding author:* Dr Mark Fisher email: [m.n.fisher@leeds.ac.uk](mailto:m.n.fisher@leeds.ac.uk)

## 1. BACKGROUND

The ecology of the uplands in north-west Europe reflects the interaction of the natural environment and human activities during preceding millennia. The latter above all is true for upland woodland in terms of clearance, burning, and grazing. Palaeoecological evidence, and the evidence of enclosure experiments where scrub and forest re-colonizes grazed land, reveals the broad extent of human impact such that few, if any, ecosystems are free from cultural influence. There is thus an acknowledgement of the pervasive role of human use in shaping present ecosystems and, in many cases, contemporary landscapes are dependent in their present form on the continuance of human activities such as the grazing of livestock. In addition, over most of Britain, biodiversity - as narrowly defined by the priorities in national action plans - exists for the most part within farmed landscapes of "*high nature value*" where human use alters features of the ecosystem and modifies habitats to the benefit of a few BAP target species. This is especially true of Scotland where there is a relationship between areas of higher agricultural value and high "*biodiversity*".

Paradoxically, the uplands in Britain are still considered in popular thought to be "*wilderness*" in spite of the evidence to the contrary. In Scotland, systems that may be recognised as the least altered are often the most valued, even though they are for the most part low in "*biodiversity*", as they are also low in agricultural value. Like all of Britain, they have become a simplified ecology through removal of woodland elements, followed by removal of the larger mammalian predators, but fortunately the mountain hare remains in Scotland since it is our only native alpine herbivore. These contradictory preferences between "*biodiversity*" and extent of modification can be linked to the ideas of "*cultural landscape*" and "*wild land*".

A number of commentators reflect that the cultural landscape can only be understood by its antithesis, of an untouched, unspoiled nature in a wild or self-willed land, and that "*nature*" is synonymous with "*absence of people*". It is the use of "*natural*" as a counterpoint to "*artificial*" that goes to the heart of what is the place of humans in nature, and whether human activity is justifiably all-pervasive. Before we can consider this, we must understand the effects of human impact by reference to systems that are free of that impact. However, while the biophysical reality of systems unaffected by humans is important as a reference, the lack of such ecosystems in Britain sets up a polarisation between wild land and cultural landscape concepts, when the substantive issue is an understanding of the drivers that transform land either way along the gradient or continuum of that human impact (the wilderness continuum).

As activities change over time, so do biological responses and the appearance of the land. Thus the soils and vegetation in Britain have varied under the pressures of millennia of human use and long-term climate change. In this largely treeless landscape, the vegetation over almost the whole altitudinal gradient has little resemblance to the potential natural vegetation. Extensive early tree clearance would have led to the loss of many elements of the woodland flora and fauna, and a considerable change in micro-climate, especially in the uplands. High levels of burning and grazing until the early 20th century continued the impoverishment of soils and vegetation. A consequence of this long history of land use in Britain is that it is difficult to assess the level of '*naturalness*' of a system. Nor is it easy, given the present economic changes affecting land use, to predict the future trajectory of a particular ecosystem, once customary practices stop, or it is placed under "*conservation management*".

On the latter, it is inherent in British protected area legislation of 1949 and 1981, and then Scottish in 1997, 2000, 2004 and 2006, that virtually all land has been shaped by human action and that most of it is occupied and under consumptive use. The concept of wild land or undisturbed nature does not appear in the legislation. National Parks are designated for nationally valued scenery and

recreational opportunities, but essentially recognised as living landscapes, within which most types of rural land use takes place. National Scenic Areas protect scenic landscapes through development management, but there is no bar on any forms of rural land use. In their designation (Planning etc. (Scotland) Act 2006) Ministers take account of any flora, fauna or physiographical features of the area " *whether or not to any extent the product of human intervention in the landscape*"

Thus the model for protected areas in England, Wales and Scotland does not identify wild land as an entity for protection, and the question of natural integrity is not addressed. The implication is that cultural considerations predominate over ecological ones, and that little emphasis is given to the environmental factors in land use that constrain cultural landscapes. In this way, Britain has avoided – unlike many continental European countries - addressing the appropriateness of humanising all ecosystems by modification.

The various policy documents on Scottish wild land – Scottish Natural Heritage, National Trust Scotland, John Muir Trust - fare little better when it comes to natural integrity. Thus " *a high degree of perceived naturalness*" relies on the breadth of ecological knowledge of the observer as to the present state of ecological simplification, as does " *little evidence of contemporary human uses*", " *not noticeably affected by contemporary human activity*", and " *minimal evidence of human activity*". There is, however, unanimity on the implications of human influence for wild land.

The climate of the Scottish Highlands is typified by a spatial and temporal variability that is due to its location on the western seaward edge of north-western Europe, where it is subject to Atlantic (maritime) and to a lesser extent Eastern (continental) influences, and to the large scale variation in topography. With more than 4,500km<sup>2</sup> higher than 600m asl, altitudinal gradients have a physical influence on approaching air masses, forcing them upwards so that any moisture content cools and is released as rain or snow. The pattern of snowfall and duration of snow-lie affect plant community structure in these upland regions. These underlying patterns of climatic and topographic variability produce clear ecological and land use distinctions between Scotland and much of the rest of Britain, and the different parts of Scotland itself. Thus the variable climate is a strong, natural force that shapes the biological diversity of the uplands, with a varied mix of Atlantic, Arctic, Arctic-alpine and boreal elements occurring within a limited geographical area, and including many species on the edge of their distributional range. Within this continuum of microclimates, most high altitude plant species are adapted to slow growth, drier habitat, snow cover, and many are unable to compete with other plant species.

The survival of plant species in a harsh abiotic (physical) environment could be largely determined by the natural, climatic forces in the altitudinal range over which a species occurs. However, what has to be considered is whether human land use overlays the extent of that influence of abiotic factors. Tree lines are the upper limit of continuous or discontinuous woodland with trees greater than 2m tall, and are the point above which abiotic factors such as low temperature and lack of moisture limit their growth. An estimate for the maximum Holocene tree line in the Scottish Highlands is that it reached to greater than 635m asl, although this may have been as low as 350m asl in highly exposed areas. This tree line is little in evidence today because of human land use. The open-ness of upland landscapes through woodland clearance and grazing could thus have had the effect of lowering the tree line such that where competition is a factor in plant distribution, as well as climatic considerations, then their contemporary distribution is expanded.

It has been estimated that a 1°C increase in annual temperature in the upland maritime region of the Highlands of Scotland would be associated with an uphill isotherm shift of 200-275m that could result in a 90% reduction in area of Scotland's arctic-alpine habitat. With many mountain plants intolerant to competition, faster-growing species with broader altitudinal and ecological ranges could

expand at the cost of slow-growing species, intolerant of competition, and with narrow habitat demands. An advancing tree line and the spread of tall herb communities would unsettle alpine and arctic plant communities through crowding and by reducing the sunlight they receive, although there are some alpine species that are tolerant of shade and thus are less threatened.

Competition commonly interacts with climatic factors, but a similar scenario to that after a temperature increase could also be induced by withdrawing the drivers for an open landscape. Many alpine plants, tall herbs and montane scrub species cannot tolerate high levels of grazing and tend to be restricted to inaccessible cliff ledges or gullies. It has been postulated in the report Farming's Retreat from the Hills (SAC 2008) that by reducing or removing grazing, species that exist in these inaccessible refuges, such as globeflower, wood crane's-bill, goldenrod, wild angelica, roseroot, alpine saw-wort, downy willow and whortle-leaved willow, will have the opportunity to expand off the cliff ledges, out of the gullies, and into the surrounding area where the edaphic and other factors are suitable. The expansion of these species will have follow-on effects that will benefit invertebrates and thus also insect-eating birds, and the change in grassland sward structure with more litter and dead standing material will benefit small mammals, which in turn supports raptors and mammalian predators. It would be a return of natural processes lost from the simplified ecology.

Before considering options for the protection of wild land in Scotland, the existing resource will be identified, along with the positive drivers and indicators associated with it.

## 2. THE EXISTING WILD LAND RESOURCE IN SCOTLAND

In our report for the Scottish Government last year, the extent of the wildest land in Scotland was mapped on the basis of combining the degree of modification of the land, road density, remoteness from population, and ruggedness of terrain. In a sense, all of those have elements of topography and climate as factors, since habitation and road networks are a function of land use and topography, which is itself influenced by climate. In terms of naturalness, the degree of modification of land was based on weightings given to different land classes, the scores primarily relating to judgements about the intensity of contemporary land use, and to some element of nativeness, rather than the potential natural vegetation, or even the extent of historical alteration. It is an approximation for want of a more authentic yardstick for the biophysical reality of wild land.

In this section, we will explore other attributes as positive drivers and indicators for naturalness and wild land in Scotland that combine ecological and landscape components, and which complement the reconnaissance mapping of last year. We focus first on how the climate and topography of Scotland affects the distribution of plants species, and marks Scotland and perhaps its wild land with a distinctive geographical distribution of plants – a phytogeographical distribution that has more in common with the northern latitudes and uplands of continental Europe than it does with the rest of Britain.

### The phytogeography of Scotland

In the map of the top 10% wildest land (see Fig 2.1) we can surmise from correlation with meteorological mapping that winters in those areas are extremely cold with significant snowfall. Summers are cool and wet. High wind speeds produce exposed conditions that limit both woody and herbaceous plant growth. Soils are nutrient poor, thin and rocky, and include a high proportion of alpine and subalpine podzols. Plant growth is slow in these conditions and primary production is low. It may be argued that these are areas where climate and topography are as significant a factor as human modification in the distribution of plant species.

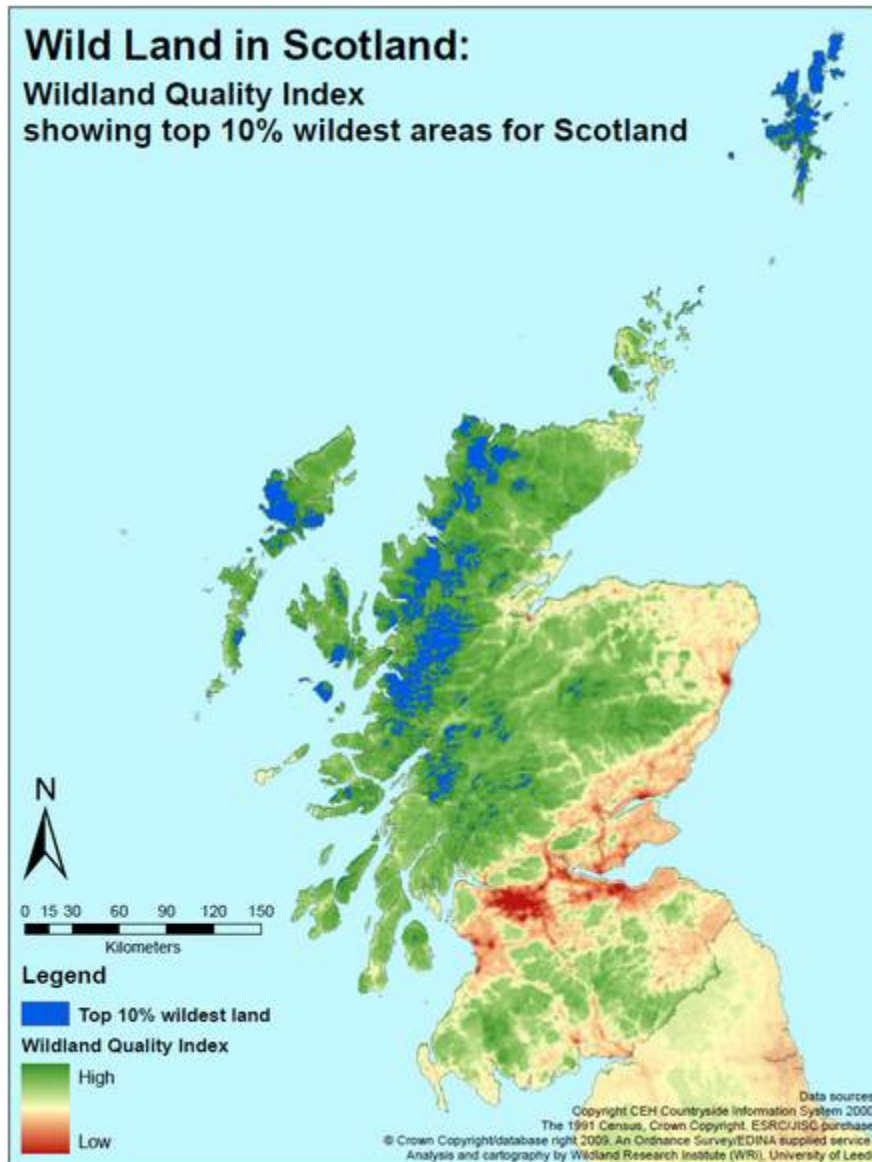


Fig 2.1 The top 10% wildest areas for Scotland

There are at least four major biomes (geographical plus climatic elements) of vascular plants within the North European flora, the classification being based on the native ranges of species, not the range as modified by introductions. These are:

- Arctic-montane or Alpine. Species with their main distribution north of or (on mountains) above the tree line. Summers are cool and short. Species are poor competitors and may also be unable to survive warmer conditions.
- Boreal. Species with their main distribution in the coniferous forest zone or in the coniferous forest zone on mountains to the south. They require cold winter to survive.
- Temperate or Atlantic. Species with their main distribution in the cool-temperate, deciduous broadleaved forest zone.
- Southern or thermophilic. Species with their main distribution in the warm-temperate zone south of the broad-leaved deciduous forest zone. In Europe the warm-temperate zone is characterised by a Mediterranean climate with summer drought, but also heat to ripen seeds and winter buds.

Plant species in Europe have been grouped together into floristic elements on the basis of their occurrence in the four major biomes, and have been mapped for Europe. Scotland contains all four of the above floristic elements, but the Arctic-montane while including relatively few species in Britain, is the most distinctive in its distribution by comparison with continental Europe (see Fig 2.2) and within Britain (see Fig 2.3).

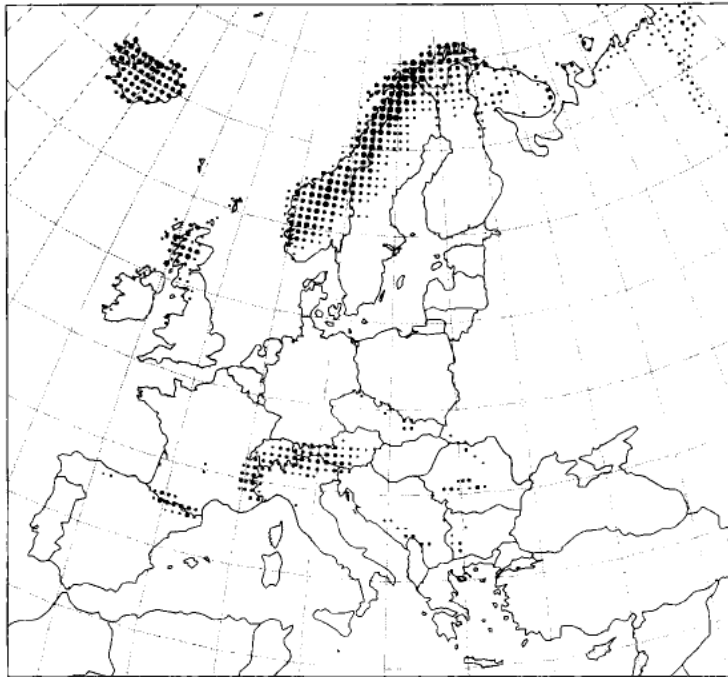


Fig 2.2 Distribution in Europe of Arctic-montane species



Fig 2.3 Distribution in Britain of Arctic-montane species

In a detailed study of Scotland to identify its major phytogeographical zones, the distribution data for vascular plant species underwent a spatial cluster analysis that resulted in their division into three zones. The mapping of these Zones is shown in Fig 2.4, and it strongly identifies an upland zone of northerly species from the Arctic-montane and Boreal biomes. This zone had the highest rainfall, as well as having species occurring at the highest maximum (765m) and mean altitude (422m). While this upland zone is more expansive than the top 10% of wildness in Scotland, there is good congruence in the NW of Scotland. Moreover, the trending in expansion of area of wildness at larger percentages than 10% shows expansion eastward into more of that upland zone, especially in the central Highlands.

Fig 2.4 Phytogeographical zones in Scotland. The Upland Zone is shown by the small squares.



## Species and habitats as indicators of land use

The mapping of floristic elements and of clustered zones is a good indication of climatic forces on vegetation distribution, and perhaps also edaphic conditions. On the other hand, the mapping of individual species and habitats gives us some indication of land use. Downy willow (*Salix lapponum*) is a Sub-Arctic species that occurs in both the Arctic-montane and Boreal biomes, and its distribution in Britain is overwhelmingly in Scotland (see Fig 2.5). It has good congruence with the upland zone of the cluster mapping. As indicated in the Section 1, Downy willow cannot tolerate high levels of grazing. It has this in common with other Sub-Arctic willows, and which together form a community of high-altitude shrubby vegetation that is listed in Annex 1 of the EU Habitats Directive as Sub-Arctic *Salix* spp. scrub. This habitat is restricted in the Atlantic Biogeographical Region to mountains in the UK, Sweden and Finland. In Scandinavia, Sub-Arctic *Salix* spp. scrub merges with tree-line birch woodland at high altitudes and high latitudes.

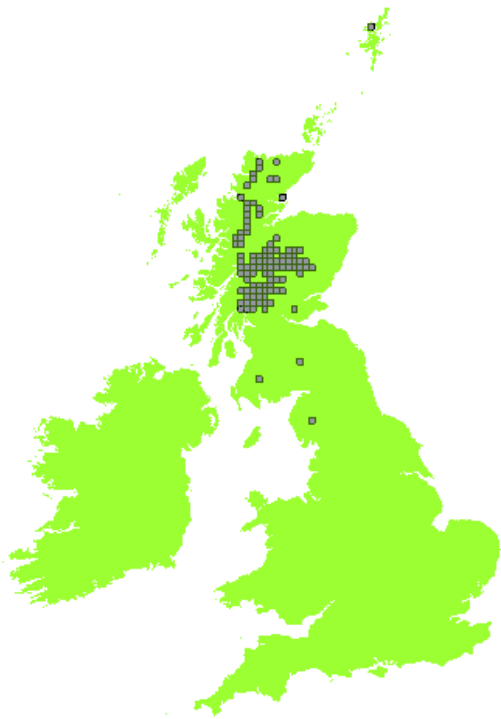


Fig 2.5 The UK distribution of Downy willow



Fig 2.6 The UK distribution of Sub-Arctic *Salix* spp. scrub

The distribution of this habitat in Scotland shows a congruence with the top 10% wildest areas (see Fig 2.6). The description of the habitat says it is predominantly a natural habitat, with succession prevented by the harsh climate at the high altitudes at which it is found. Stands of this willow scrub survive on ungrazed ledges and, more rarely, on lightly grazed, steep rocky slopes or boulder fields, occurring only as small, discrete stands or more scattered bushes. Grazing is believed to have reduced and restricted its occurrence.

The willows grow among a diverse mixture of dwarf shrubs, grasses, rushes and broad-leaved herbs, such as bilberry, tufted hair-grass, great wood-rush, and Alpine lady's-mantle. On the rock ledges, this willow scrub habitat commonly mixes and associates with another Annex 1 habitat - Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels, and which is also predominantly located in Scotland (see Fig 2.7). The habitat description says that these tall herb communities occur on wet ledges that are inaccessible to grazing livestock, but it is also found in inaccessible gullies. Amongst the tall herbs in this habitat are wood-rush, wild angelica, roseroot,

wood crane's-bill, water avens and globe-flower. A number of these plants were mentioned in the previous section in relation to species that would, along with downy willow, spread out into the surrounding land if grazing was reduced.

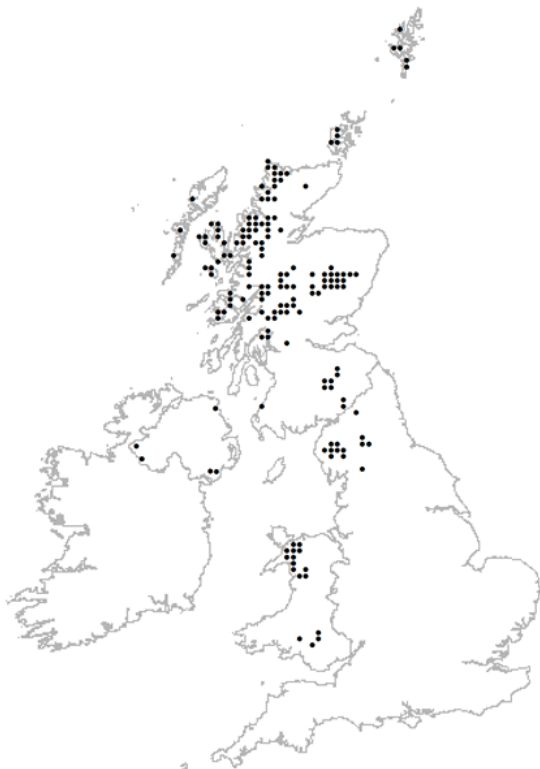


Fig 2.7 Hydrophilous tall herb fringe communities

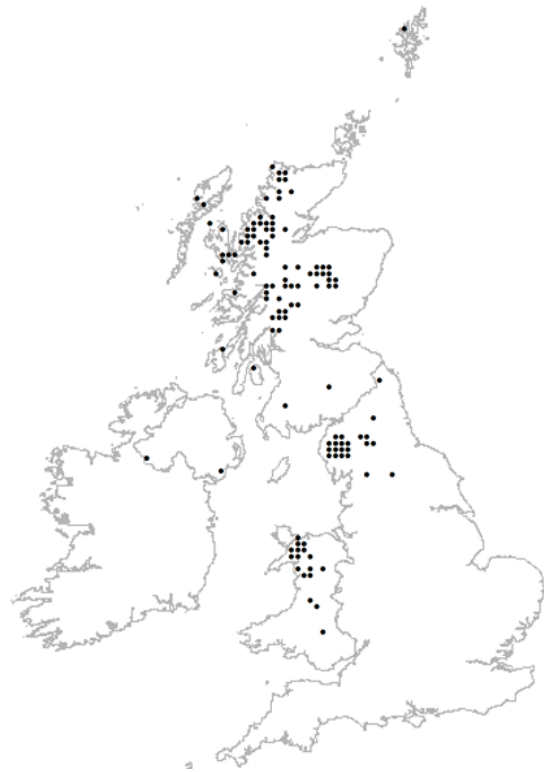


Fig 2.8 Siliceous rocky slopes with chasmophytic vegetation

There is a third Annex 1 habitat that has a distinctive distribution, predominantly in Scotland, and which occurs in the upland zone (see Fig 2.8). Siliceous rocky slopes with chasmophytic vegetation consist of plant communities that colonise the cracks and fissures of the faces of acid rocks, making them also inaccessible to grazing. The description of the habitat says that altitude and geographical location account for a large part of the ecological variation exhibited by this habitat type, with the high-altitude examples in northern Scotland hosting a range of uncommon species, such as alpine speedwell and Highland cudweed that have an arctic-alpine or boreal distribution.

Like downy willow, dwarf birch (*Betula nana*) is found in both the Arctic-montane and Boreal biomes, as is indicated by its predominant distribution in Scotland (see Fig 2.9). Classified as being scarce in Scotland, it exists in scattered pockets throughout its range, usually in a considerably suppressed form because of grazing by sheep, and it is likely to have been much more abundant in its range in the past. The present distribution of dwarf birch shows some congruence with the wildest land in Scotland, but it is shown here as a proxy indicator of herbivore pressure since it is more likely to be found in habitats that offer little physical restriction to access for grazing compared to the Sub-Arctic willow scrub and the tall herb communities.

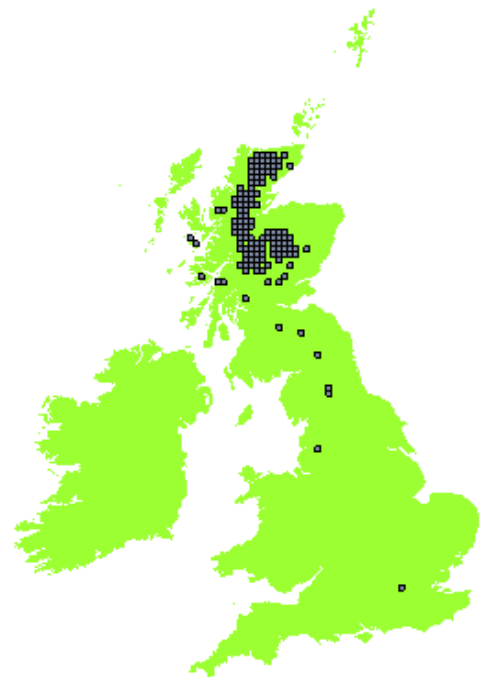


Fig 2.9 Distribution of dwarf birch



## Positive drivers for wild land

The areas of lowest density of sheep grazing in Scotland in 2007 show a similar distribution to the phytogeographic upland zone (see Fig 2.10). This is perhaps not surprising given the lower agricultural value of this zone, but it is a moving target since those areas in the North West have witnessed the greatest fall in sheep numbers since 1999, seeing reductions of between 35 and 60 % (see Fig 2.11). The incentive to have large numbers of sheep has been removed now that agricultural support payments have been decoupled from the level of production. Thus it is likely the reductions are part of a process of de-stocking to cut costs and maximise the level of support payments being retained as income. It may also have led to some farmers leaving the industry through abandoning farming practices altogether. Without Single Farm Payment (SFP) the reductions in sheep numbers would likely be very much greater, as the economic viability of sheep farming in upland areas is only maintained through subsidy.

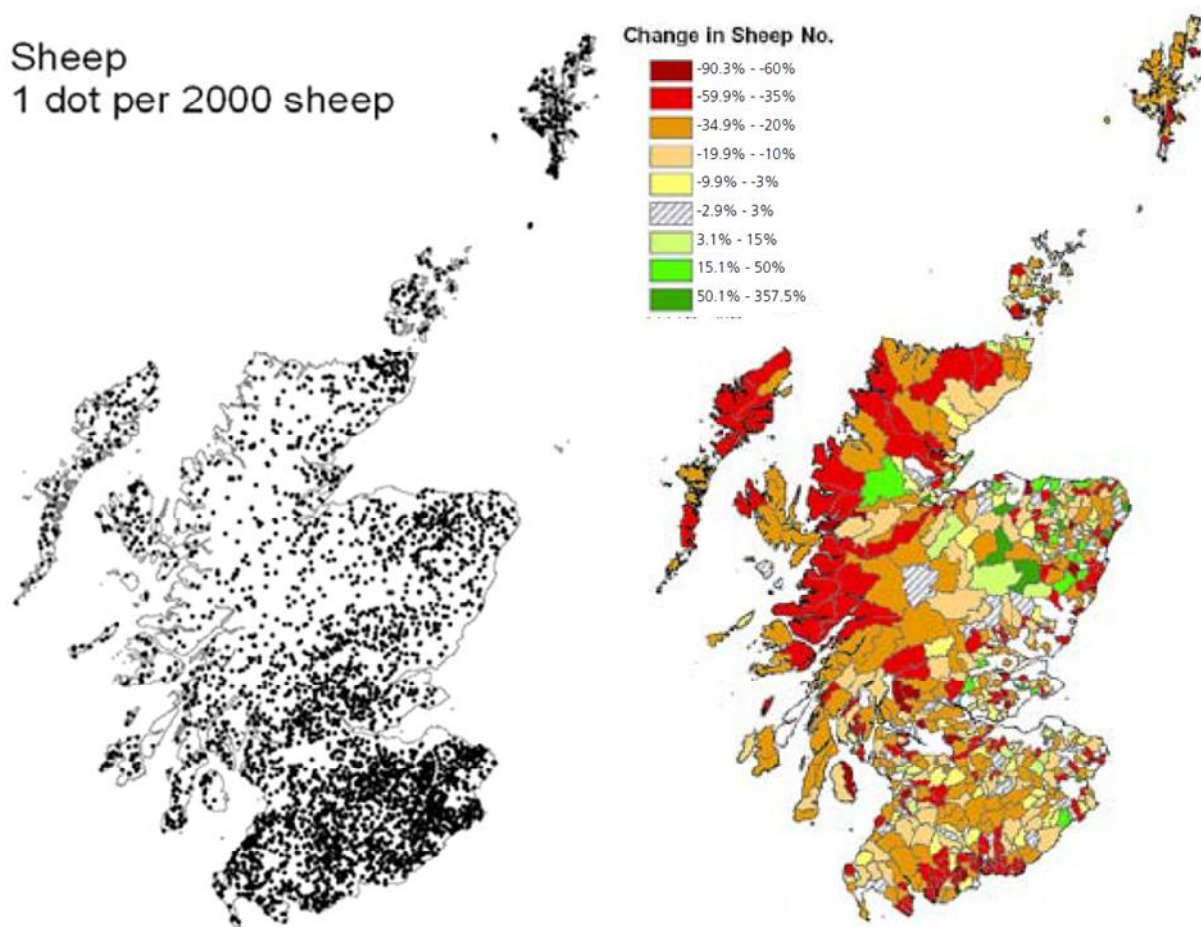


Fig 2.10 Distribution of sheep

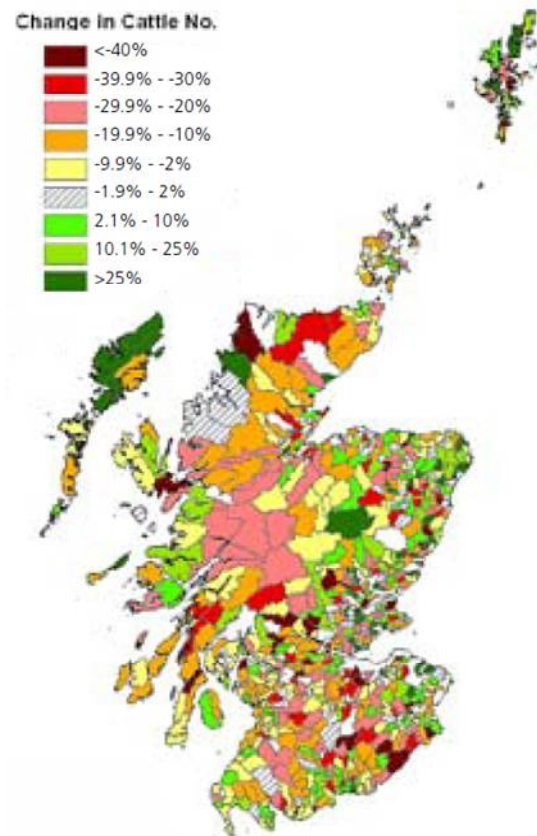
Fig 2.11 Change in sheep numbers 1999-2007

The reduction in sheep numbers in the NW, and without substitution with cattle (see Fig 2.12 overleaf) exemplifies a trend that is a positive driver for wild land. The distribution of shrubby and other species that are vulnerable to grazing are likely to expand, leading to change in species composition and vegetation structure which, in turn, will affect the insect, bird and mammal assemblages, and bring greater diversity to the upland zone, as well as perhaps the establishment of larger areas of upland birchwood.

Natural and semi-natural habitats continue to be lost to agriculture in a landscape simplification of declining native species. Only a small proportion of the total agricultural budget goes to agri-

environment schemes, with the majority of public funds paid to farmers through the SFP. The latter two support mechanisms are expected to continue in some form after 2013 when the current Scotland rural development Program ends, and thus will likely be the major drivers of agricultural land use decisions in Scotland until at least 2019.

Fig 2.12 Change in cattle numbers 1999 and 2007



Turning back landscape simplification needs to be tackled at a large scale, and will not be achieved solely by using agri-environment schemes within the Scottish Rural Development Program, especially since it is difficult to predict the outcome of the next round of the CAP in terms of any increase in Pillar 2 support payments. There is an argument for a reframing of public support for land management away from the current system of income support for farmers through the SFP, towards a system that recognises and values wider, non-market benefits. Thus instead of paying money to keep farmers in business on the assumption that their continued presence is beneficial, the system should be changed to pay for delivering a set of explicitly defined public goods, and which is potentially more focused and accountable. The probability though of this reform is low at present, as it needs a consensus within the EU.

A refocus of the way agri-environment schemes are funded is within the authority of the Scottish Government. These schemes offer payments for prescribed management actions that are assumed to deliver environmental benefits based on the narrow definition of biodiversity in priority action plans, rather than making payments based on a defined outcome (as is the case for some woodland grants) that seeks the reversal of landscape simplification. The delivery of the funding agreements currently drives the process, with an assumption, especially on designated sites, that benefits are inevitable. That this is questionable will have to rely on the current cycles of monitoring and evaluation. However, an alternate approach has been proposed based on payment-by-result, and which would create incentives for co-operation across several holdings. The latter would seem essential in an ecological restoration for wilder land. An example is the Bush Tender Trial in Australia. The objective of the scheme is to conserve native vegetation through the means of stock exclusion, the retention of fallen trees and timber, and through the control of weed and invasive species. Farmers submit sealed bids which are selected on a value for money basis and, if successful, are paid for their management actions.

## Positive Indicators for wild land

In Section 1, it was postulated that "*nature*" is synonymous with "*absence of people*". It should be qualified that this is not about a mutual exclusivity. The issue is that the presence of habitation inevitably leads to development of infrastructure and puts consumptive pressures on the use of land. In its ideal form, wild nature is there for us to observe and seek inspiration from, but from which we take nothing away except our enjoyment. However, fulfilling that enjoyment encompasses a range of ambition amongst different people, from those who make the effort of the "*long walk in*" to those

whose effort is less. Habitation and infrastructure are necessary to enable that opportunity spectrum, and its spatial distribution is a balance. However, this has not been a basis of development management when the main consideration is of productive land use. Against that background, it is important to note that the population of the wildest areas of Scotland is very low (see Fig 2.13) and it is getting lower based on the changes that have occurred between 1998 and 2007 (see Fig2.14). These population changes however do not necessarily imply a reduction in habitation, or necessarily a decline in natural population, and may be younger generations moving away temporarily.



Fig 2.13 Population in Scotland

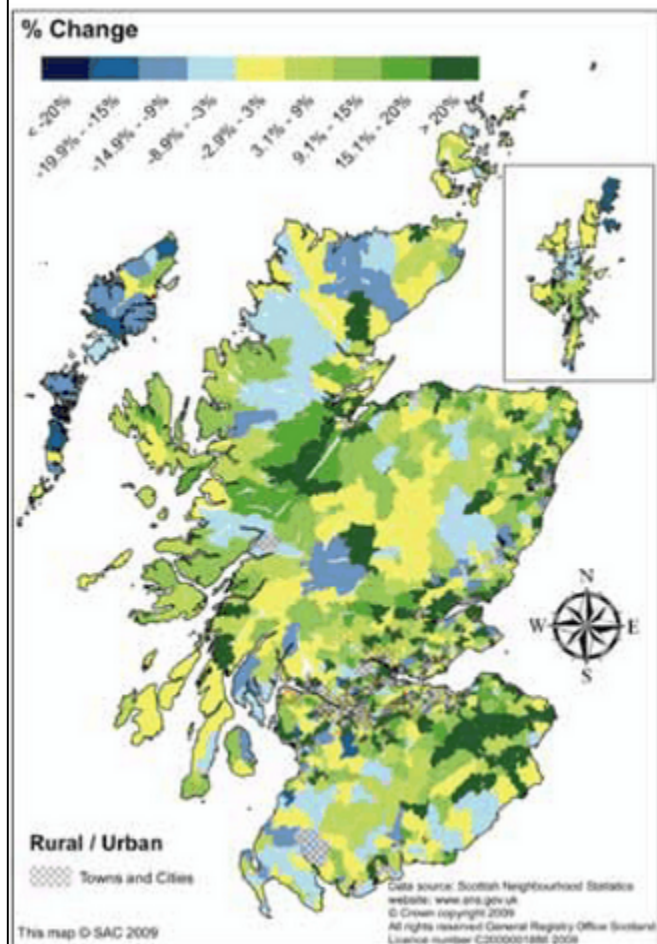


Fig 2.14 Local population changes 1997-2008

Two aspects of the upland zone in Scotland that are also attributes of wild land, are less easily mapped, although they are assumed qualitatively – these are nativeness and an unenclosed landscape. An approximation for nativeness appeared recently in the National Ecological Assessment (NEA) where mapping of broad habits showed Scotland to have the highest proportion of Mountains, Moorlands and Heath in Britain, and correspondingly the lowest proportion of Enclosed Farmland (see Fig 2.15 overleaf). The assumption is that the former broad habitat is unimproved in the sense that its vegetative cover derives only from extant native species rather than from the introduction of non-native plant species. It has nativeness because improvement for agriculture that could bring in non-native species lacks feasibility. However, that nativeness is a simplified ecology, widely lacking native species that would fulfil its potential natural vegetation. While mapping data for the occurrence of native species is available, the same is not true for invasive or exotic species, and mapping potential natural vegetation would be speculative.

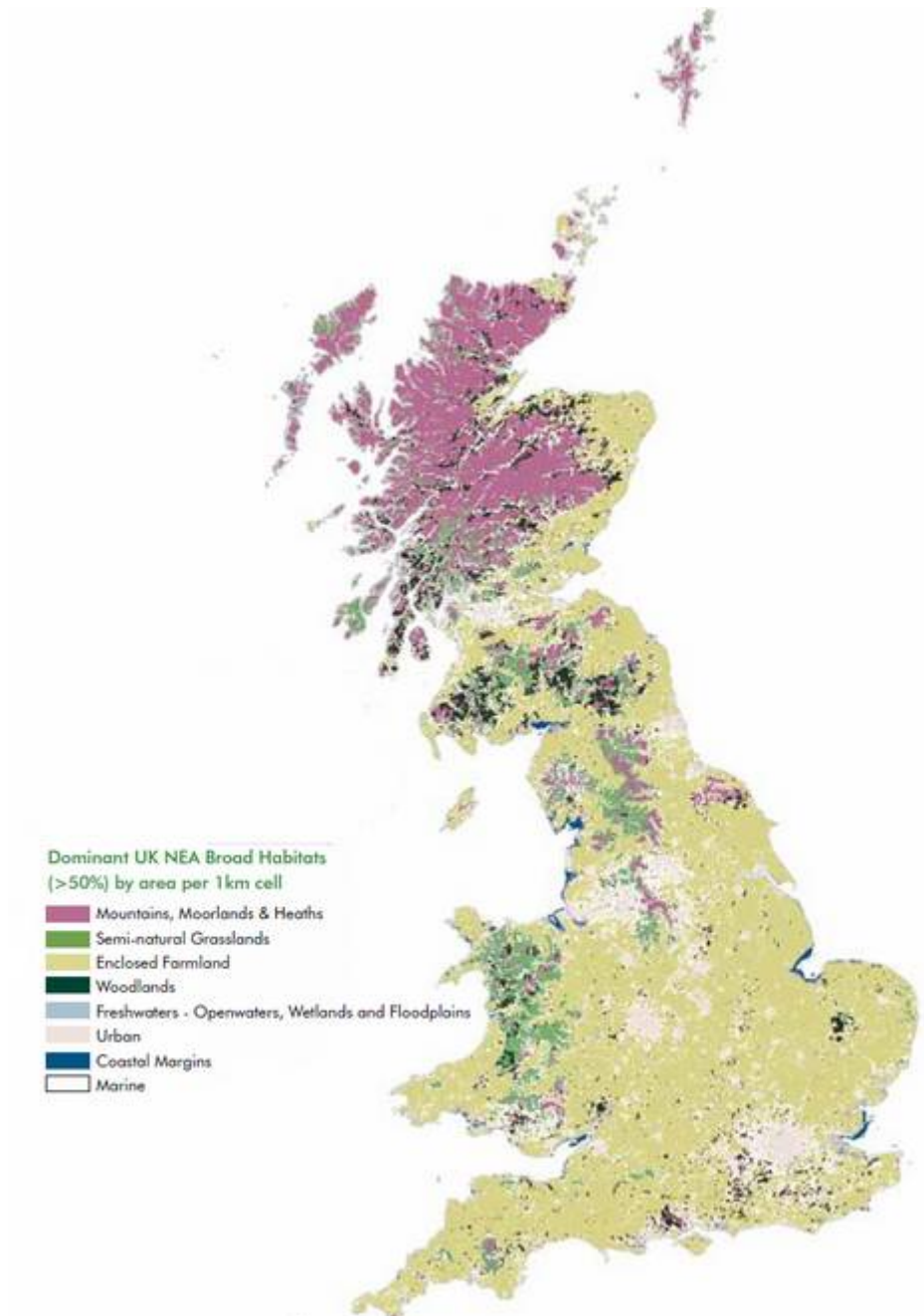


Fig 2.15 Broad Habitats in Britain – enclosed versus unenclosed

The mapping of Enclosed Farmland for the NEA was likely on the basis of judgement of land classes, rather than evidence of walls or fences, and thus is also an approximation. The inverse assumption, of an unenclosed nature of Mountains, Moorland and Heath, is given weight because its agricultural value is such that it could not be used more intensively through higher management input. It may be possible to definitively map the spatial degree of enclosure across Scotland by looking for field boundaries in the Topography Layer of the Ordnance Survey's MasterMap data, but it would not be a quick process.

However, a measure of the spatial density of enclosure can be calculated from a report on the Boundary and Linear Features Broad Habitat in the Countryside Survey: Scotland Results from 2007. The survey divides Scotland into three Environmental Zones (EZs) representing the

geographically different regions of the Lowlands, Intermediate Uplands and Islands and the True Uplands, with a land area of about 28%, 32% and 40% respectively (see Fig 2.16 ).

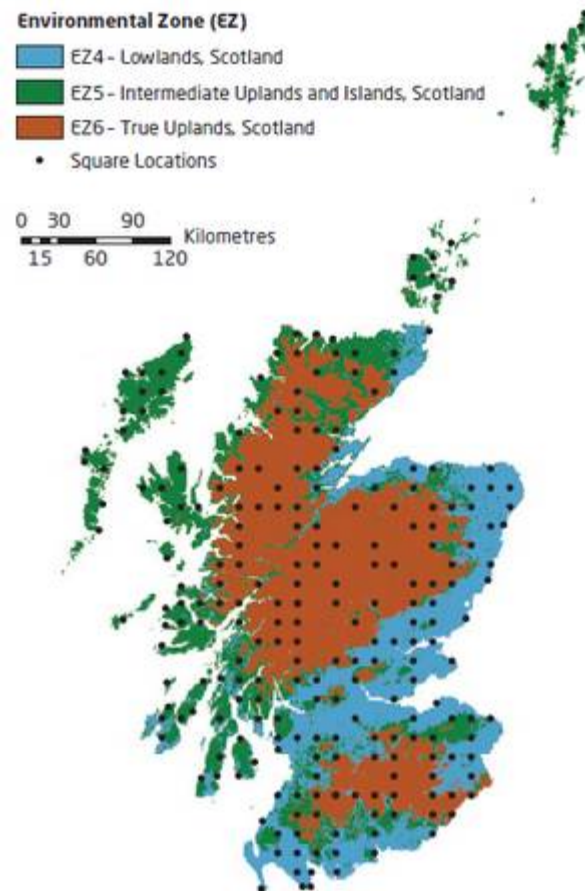


Fig 2.16 Division of Scotland into Environmental Zones – Countryside Survey 2007

By area, the Lowland zone has the greatest length of hedge, fence and wall at 7.83km/km<sup>2</sup>. The Intermediate Uplands and Islands is next at 3.95km/km<sup>2</sup>, and the True Uplands has the lowest at 1.55km/km<sup>2</sup>.

In summation, the wild land resource of Scotland, as initially identified by the reconnaissance mapping, has the following characteristic attributes. As we show, there is clearly an inter-relationship between these different attributes:

- **TOPOGRAPHICAL VARIABILITY AND SCALE** – is it what is perceived as scenic beauty (topophilia – sense of place)? Can we map it? Is it *“received”*? It has attributes of altitude and extremes of land form that are overlaid by.....
- **CLIMATIC FACTORS** – exposure is a significant factor that combines with.....
- **EDAPHIC FACTORS** – infertile soils and shallow depths, all giving rise to.....
- **NATIVE VEGETATION COVER** - nativeness, but missing successional species and over-grazed in the Arctic-montane, however there is.....
- **LOW INTENSITY LAND USE** – with drivers towards lower use (reduction in sheep numbers) so that it is.....
- **UNENCLOSED** – marginal productivity that cannot be increased with higher management input, leading to.....
- **LOW POPULATION** – minimal need for infrastructure and thus also.....
- **REMOTENESS** – away from centres of population

### 3. THE OPTIONS FOR PROTECTING WILD LAND IN SCOTLAND

There are a number of potential approaches to protecting the wild land resource in Scotland, on the basis of greater public engagement with wild land, through the existing legislation, or through new legislation for wild land.

#### 3a. DESIGNATING NEW NATIONAL PARKS

The National Park model in Scotland complies with the definition of a Protected Area in the new IUCN guidelines. A Protected Area has to have a main objective of conserving nature. While it can contain areas with other goals as well, nature conservation will be the priority when there are competing interests. Thus in Section 9(6) of the Act, it says that if in relation to any matter, it appears to the authority that there is a conflict between the National Park aim set out in section 1(a) of conserving and enhancing natural and cultural heritage, then the National Park authority must give greater weight to that, rather than the other aims such as or the promotion of sustainable economic and social development of the area's communities. Another principle is that Protected Areas must prevent, or eliminate, any exploitation or management practice that will be harmful to the objectives of designation. The Scottish legislation for National Parks Act 2000 does refer to conserving and enhancing "*the natural heritage*", defined as including "*flora and fauna .... geological and physiographical features and .... natural beauty and amenity*". It is not obvious in the legislation that this is given greater weight than cultural heritage because the two are linked together in the first aim of a park.

In reality, the predominant private ownership and productive purpose of a protected landscape, as Scottish National Parks are more accurately defined, means the ability to exercise such weighting is limited. Moreover, while the National Park may make byelaws to protect natural heritage and prevent damage to the land, it was not the intent of the framers of the legislation that this be enforced, or even interpreted, as a means for stricter protection conducive to maintaining a wild land characteristic inside a National Park. It is not explicit as it is in the legislation for national parks in other countries.

In essence, through the management plan, and with the consent of landowners when suitably incentivised, a Scottish National Park could overcome the lack of clarity in the legislation, and take a spatial view within its borders of where and how a characteristic of wildness could be enhanced and maintained. It should be noted that National Parks in England and Wales are required by legislation to map any areas whose "*natural beauty*" is considered by the Parks to be particularly important to conserve. In the case of the Peak District National Park, these areas of mapped land are referred to collectively as the "*Natural Zone*", and the criteria used in their mapping was that they are areas where "*the vegetation is almost entirely self-sown, with only minor modifications by human activities. There are few buildings or obvious signs of human influence such as field boundaries*". The zoning appears in the Proposals Map for the Peak District National Park Local Plan and with an associated policy that restricts physical development, but says nothing about land use.

To their credit, the two Scottish National Parks voluntarily commissioned mapping of wild land potential. The first manifest use of the mapping has been for Supplementary Planning Guidance on Wildness in the Cairngorms National Park. The Guidance identifies three Bands in the mapping that have differential development sensitivities, and these are exemplified in more detail in a descriptive table for the Bands. The Guidance also has a section on Mitigation, Compensation and Enhancement opportunities, but whereas the text deals with the opportunities in relation to development management, the descriptive table has this for opportunities in Band A (High Value):

*“Land management should be very light touch and emphasize natural processes. Restoration of natural vegetation and habitats should be a high priority”*

This is admirable in relation to reversing landscape simplification, but it is not apparent whether this is just an exhortation for a voluntary compliance, or if there is to be some strategic support for this coming from the Cairngorms National Park Authority. If there are to be new national parks in Scotland, then it is best that they are established with a zonation at outset that is based on a differentiation of land activity as well as development control. It is instructive in this regard to consider the establishment of a network of new national parks in Denmark that began shortly after passage of a National Parks Act in 2007. In familiar terms for continental Europe, the Act's purpose is the formation of national parks to:

- create and ensure more coherent natural areas that maintain and enhance the quality and diversity of nature
- ensure continuity and opportunities for a free dynamic in nature
- promote people's opportunities to use and experience nature and the landscape

Before the act, a Government funded National Park Pilot Process (NPP) of seven pilot projects was undertaken to identify options for establishing the parks, and to inform draft proposals for the Act. From the outset, a voluntary approach was sought that included extensive participation by landowners and other local stakeholders, and an inter-sectoral solution. Expert knowledge was also given a significant role.

In the pilot project 'Kongernes Nordsjælland' the involvement of the public was organised in four stages. The Steering Committee (SC) established ten thematic working groups, and a group of families with young parents, after an introductory meeting, an information meeting, a "café seminar" and excursions. The thematic working groups met 5-7 times (their meetings open to anyone) and the 180 people who took part formulated ideas and specific proposals in preparation for a large "citizens summit". The summit was held with 529 randomly chosen citizens who discussed and then voted to prioritise ten of the most visionary proposals, as selected by the SC. A fourth stage consisted of a two day workshop where the SC together with representatives from the thematic working groups elaborated different scenarios for the national park. During the process, there were additional activities such as exhibitions and field trips. The SC then handed over its final report to the National Advisory Group.

The main conflict during the process was that of agricultural interests which wanted to restrict the national park to the three primarily publicly-owned core areas of land that made up half of the potential area of the new park, whereas the proposal that evolved from the SC included in addition four corridors on privately owned land that spatially linked the core areas together.

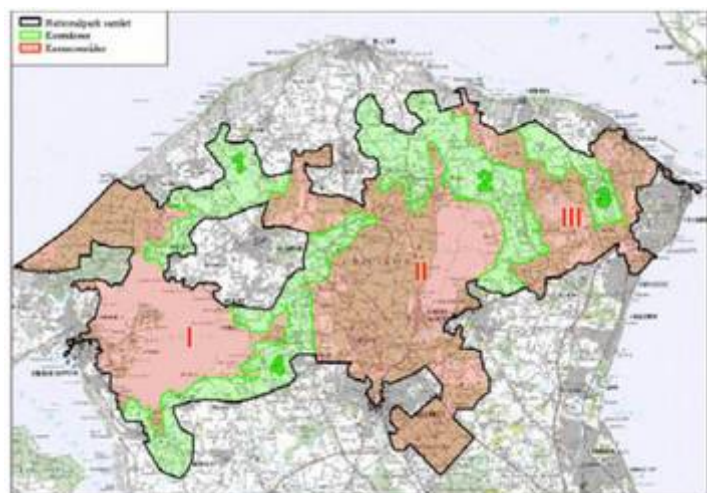


Figure 3a.1 Map of pilot project Kgs. Nordsjælland

Disagreements between the two agricultural organisations and the rest of the members of the SC eventually reached an impasse, the agricultural organisations fearing the potential limitations on the

agricultural management of the private land, and did not trust the guarantees of compensation. In spite of extra meetings, the disagreements could not be bridged. As a result, the agricultural organisations withdrew from the SC and handed in their own proposal for a national park. There are now two new national parks in place after a long democratic process in each location in which the local community contributed with knowledge and involvement. Three more areas have been selected, the parks being established step by step over the next few years under the condition that public consent in the locality is secured. The 'Kongernes Nordsjælland' is one of those.

SNH carried out a series of assessments to evaluate areas which might be considered as candidates for designation as a Coastal and Marine National Park under the National Parks Act 2000, with their advice submitted to Ministers at the end of March 2006. A consultation paper on proposals to establish Scotland's first Coastal and Marine National Park followed soon after. After analysing the responses to the consultation, it was announced in March 2007 that further work was needed to resolve concerns among fisheries, aquaculture and tourism businesses relating to the economic impact of a Park. The drive for a Coastal and Marine National Park then ran out of steam when it became clear that there would be a Marine Act. There is however a project, launched last year, to promote a National Parks Strategy for Scotland. It is backed by a partnership between the Scottish Campaign for National Parks and the Association for the Protection for Rural Scotland. The project aims to promote a strategy for developing a comprehensive network of National Parks across Scotland, with at least three new National Parks being designated by 2015, including Scotland's first Coastal and Marine National Park. Project elements include:

- Engagement with local communities in potential National Park areas and national communities of interest
- Establishment of criteria for selecting the most appropriate areas for designation
- Preparation of a draft strategy including proposing priority areas for designation and promote it to all concerned

If wild land is to be a feature of these new parks, then it is essential that some opportunity mapping for potential core areas is carried out, and which are surrounded by buffering land of low to intermediate intensity of use. Thinking within the IUCN classification of protected areas, it should be the aim of new (and existing) national parks to have internal zones that are consistent with IUCN Category II, where the principle aim is protection of whole ecosystems. This Category is called a National Park in the classification, but it should not necessarily lead to a confusion in the public's mind (i.e. a park within a park) since the National Parks in France have a Category II "core area" surrounded by a protected landscape area (Category V) that they call the "partnership zone".

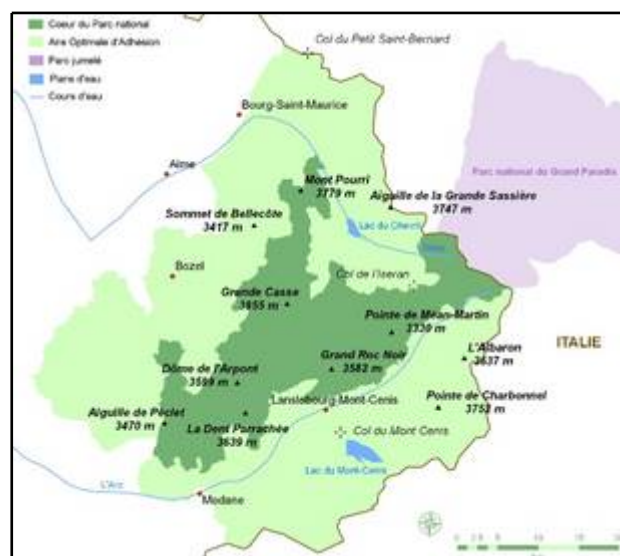


Figure 3a.2 Vanoise National Park, France. Core area (dark green) partnership zone (light green)

This zoning of protected core zones and managed buffer zones is a feature of Biosphere Reserves in their most complete implementation, often centred on a national park with an additional buffer and transition zone. Done well, the inventive, interdisciplinary, and multifunctional nature of the biosphere reserve concept works well in combining what is often in continental Europe a well



protected core area (IUCN category I or II) within an area of sustainable development (IUCN category V). The French believe that the conservation value of the core zone in their national parks has spill-overs, serving to reinforce and preserve the natural resources in the partnership zone in terms of both quality and quantity, such as water supply and certain game species. Also that the proximity to a rich natural, landscape heritage improves the quality of life for residents in the partnership zone, making the area around the core zone more attractive. In addition, high demand for visitor access to national park core zones is a lever for the development of tourism facilities, the management of which is an aid to sustainable development in the partnership zone.

As the development of the proposed Galloway and South Ayrshire Biosphere Reserve shows, comprehensive engagement over a significant period is needed to develop the proposals and build a consensus to the point where it may become a reality. The islanders of Harris also set out on a process of making the case for a national park, only for it to be declined by the Scottish Government on the basis of an absence of support from Western Isles Council and the lack of government cash. The Council considered that a convincing case had not been identified for a formal designation when the critical components of the National Park were unknown, such as the boundaries, governance and proposed powers of a future park authority, as well as how the park authority would interact with the council and other community interests.

## SWOT

S = designation with high public recognition; Government funding for National Park Authority; scale; increased recreation in a managed way; use of the National Park 'brand' for local produce schemes and for attracting visitors; increased visitor expenditure and employment associated with the tourism industry

W = lack of explicit support for wild land in National Park legislation; parks seen as 'islands' set apart from surrounding areas; park boundaries are arbitrary lines on maps that create a 'boundary effect', disconnecting the park from what goes on around; wild land in parks obviating the need for a wider strategy for wild land; limited overall geographical sphere of influence; wildest land away from centres of population so that there is little "constituency"

O = scope for cementing wildness as a key attribute in Scotland through the ability to identify and protect core areas; making explicit the link between the benefits of core areas to the surrounding protected landscapes; being an influential advocate for land restoration in core areas and targeting of Government funding for this; the wild land of core areas receive better protection within parks with their buffer zoning than if free-standing; scope for developing new types of recreation and approaches to visitor management (Recreational Opportunity Spectrum)

T = failure to identify suitable locations; lack of local support; lack of development funding for proposals from Government; limited real public and institutional support for wild land; current failure to integrate wildness into wider policies, such as agriculture; AFTER DESIGNATION = changes in employment profile and implications for habitation; potential conflicts between tourism/recreation and landowners; inability to have sufficient influence over land use in the core area.

### 3b. IMPROVEMENT OF THE EXISTING NATIONAL SCENIC AREA NETWORK

In our report to the Scottish Government, we identified National Scenic Areas (NSA) as the statutory designation that had the most coverage of the wildest areas of Scotland. Nearly half of the top 10% wildest area can be found within their boundaries, with almost all of the NSA to the west of the Great Glen containing a significant proportion of wild land, and only Ben Nevis and Glen Coe NSA on the eastern side having a concentration of wildest land.

The statutory protection afforded to NSA is guidance on development management given by Government to local planning authorities. Thus development that could affect an NSA *“should only be permitted where it will not adversely affect the integrity of the area or the qualities for which it has been designated; or any such adverse effects are clearly outweighed by social, environmental or economic benefits of national importance”*

However, as noted in a Government consultation on NSA in 2006, many of the land use changes that may have an impact within NSA, such as agricultural practices or forestry, do not require planning permission as they are not directly controlled through the NSA designation. The consultation included a proposal for a non-statutory approach to their management through encouraging all local authorities and national parks to have a Management Strategy and action plans for the NSA within their areas. The consultation estimated a cost for preparation of Management Strategies for all of the 40 NSA at £1.98 million, with on-going core costs to support implementation at £850,000 per year, and the potential cost of new money to support NSA-specific projects at £1.44 million.

There was also the suggestion that implementation of these strategies may require some effort to tap into or re-focus existing funding sources, such as agri-environment or forestry, bringing new investment into NSA. The consultation gave an indication of the potential support for land managers through agri-environment type measures at that time for the 8,626km<sup>2</sup> of NSA of an annual rate of £5.8 million.

There had been some trialling in 2001 by local authorities and SNH of the preparation of Management Strategies for the Wester Ross NSA and for the three NSAs in Dumfries & Galloway. There were difficulties with securing stakeholder support, indicating that they may not attract a high degree of voluntary involvement. It would, anyway, be unrealistic to expect this of NSA when they are overwhelmingly in private ownership, and when the influence of agri-environment incentives has been comparatively small for upland land use on private estates. These estates have generally been unresponsive to changes in public subsidy for agriculture and forestry, which has been the main means by which the state has influenced rural land-use elsewhere. This is in part because most are not run on a commercial basis and land management decisions are not dependant on the availability of public funds.

It has to be concluded that in their present legislative form, there is an insufficient regulatory framework for NSA to function as protected areas for wild land as they do not have a clear and enforceable regime that gives the right balance to protection of natural values. A Management Strategy that includes a spatial approach, backed by staffing and funding resources could, as it may for national parks, overcome the lack of explicitness in the legislation. Like new national parks, it would need a considerable investment in participatory development for a Management Strategy that agreed that aim on an individual NSA basis, and which had funding streams targeted toward implementation. It is unlikely that this would have universal acceptance across all 40 NSA, and thus good targeting of potential NSA would be needed, and some consideration as to the wisdom of creating a two-tier system out of the existing network of NSA.

## SWOT

S = NSA cover some of the wildest areas of Scotland

W = little awareness of NSA, general perception is only moderately effective or ineffective at landscape protection, no assessment of landscape change since designation, no statutory requirement for management strategies (AONB management plans are), local authorities inability/lack of resources to steward enhanced role for NSA

O = SNH can offer local authorities 75% grant-aid towards employing NSA officers to coordinate preparation of Management Strategies, analyse Special Qualities fieldwork data for wild land characteristic to delineate NSA; potential to be turned into new national parks

T = move in NSA towards "*landscape character*" approach (scenic over ecology), lack of specific targeting of funding streams for the reversal of landscape simplification, resistance to stakeholder involvement, lack of impact of incentivisation, lack of Government funding to either bolster local authority administration or to set up individual NSA administration

### 3c. OTHER LIGHTER TOUCH OPTIONS

There is a view that wild land in Scotland is not, at present, primarily about natural or ecological integrity, but more about wider landscape and cultural values, and which has in particular been historically driven by recreational values. Thus in the Scottish context, wild land can refer to a resource that may well have been modified by past management, but is valued in its present state of large unenclosed areas of broadly semi-natural habitat. Consistent in safeguarding these areas, therefore, the sole focus is on managing intrusive built development through the planning system, rather than on a reversal of landscape simplification.

There has been little debate about the potential for a more integrated approach bringing in natural values, and a seeming reluctance to move past the '*command and control*' approach of current "*biodiversity*" conservation when it introduces an element of unpredictability. There is also the argument that the reversal of landscape simplification may not lead to a change in the range of ecosystem services that these areas provide by comparison with the present situation, thus justifying the status quo. While this is open to criticism as an entirely anthropocentric view that gives little to the increasing benefits for wild nature, it does also deny a greater authenticity of the wild land experience for people as well.

The Scottish people are soon to be polled again on their perceptions of wild land. Given the restricted focus of that work, it may not open up a debate as to what wild land is in Scotland because it will probably still avoid addressing natural integrity in any meaningful way. While there are policies and visions on wild land, the underpinning philosophy was vague when it came to natural integrity, and the apparent consensus that came out is likely to unravel as people become more aware of biophysical realities. The '*conscience*' for Scotland's wild nature may rest increasingly more on the consumers of a wild land experience, rather than on land users and managers, or the state agents for a compositional approach to nature conservation (see next section).

Can that conscience be tapped into?

A light touch solution is to develop an ethos around the responsible recreational use of Scotland's wildest land, which could be based on an alignment of the Leave No Trace mentality of outdoor ethics with Scottish wild land. This would compliment Scotland's Access Code. While there are a few recreational businesses in Scotland that notionally support Leave No Trace, Ireland has its own Leave No Trace national network organisation with an Outdoor Ethics Programme designed to promote and inspire responsible outdoor recreation. It offers training courses for teachers in Leave No Trace, as well as awareness courses. In the absence of a Country Code, Leave No Trace Ireland was developed by Coillte Teoranta, the National Parks and Wildlife Service, Forest Service, Heritage Council, Irish Uplands Forum, Mountaineering Council of Ireland and other public organisations, and was adopted as a national code in 2006. (It should be noted that Coillte owns on behalf of the state, 7% of Ireland, and has ten forest parks, over 150 recreation sites and manages over 50% of all the off road national long distance hiking routes. The National Parks and Wildlife Service owns on behalf of the state the six national parks, and most of the area of the 30 odd national nature reserves.)

Is there a coalition for wild land in Scotland?

There is a voluntary commitment to reversing landscape simplification in Scotland amongst some private land owners, and on land in charitable ownership. Of the former, there is for example Paul Lister at Alladale; Cameron Mackintosh and his use of the Crofter Forestry Scheme on the Nevis Estate; and John MacKenzie's large scale planting of new native woodland on his Gariloch Estate (and see next section). Amongst charitable ownership is the planting of Carrifran Wildwood, owned by the Borders Forest Trust; and the restoration of Caledonian Forest at Dundreggan, owned by Trees for Life. As with Paul Lister at Alladale, Trees for Life want to collaborate with neighbouring landowners where they share similar goals, so that habitat restoration takes place over a larger contiguous area. It should also be noted that the Forestry Commission through the Public Forest Estate in Scotland is a participant in restoration, such as the establishment of native woodland from the floodplain to the hill sides by the River Carron near Achnashellach, where there are remnant stands of mature Caledonian (Scots) pine.

There is a role in coordination across Scotland of this commitment to reversing landscape simplification, in terms of development of policy, advocacy and promotion of wild land. A simple analogy would be with Scotland's Environment Link (ScotLink). Guidance could be developed on managing and protecting for wild land values that combine both landscape protection and natural integrity. The coalition could have an advisory role with statutory agencies such as SNH, SEPA, etc., encouraging them to strengthen their guidance on wild land values in their existing planning/management guidance documents (e.g. on renewable energy, forestry, fisheries etc.) and emphasizing landscape protection and natural integrity and their interdependency.

The coalition of interest in wild land can be the driving force behind initiatives in opportunity mapping. In Section 3a on the designation of new national parks, a need was identified for opportunity mapping for potential core wild land areas, and which are surrounded by land of low to intermediate intensity of use that could act as a buffer zone to the core area. This opportunity mapping has wider utility if it is seen in the context of ecological networking in terms of the recommendations of the Lawton report for England. While there is habitat network mapping across Scotland, this could be complemented by identification of a zoned network of core wild land areas and associated buffer areas across Scotland.

## SWOT

S = lighter touches are easier to implement and therefore more likely to succeed, tap into interested parties and harnesses their knowledge and commitment

W = not inclusive of all stakeholders, just "*guidance*" and therefore lacking enforcement

O = root and branch review of existing guidance to include wild land values, potential for higher public profile for wild land, development of a view of interdependency in wild land of landscape protection and natural integrity, engagement of the wider (wilder) imagination of the public

T = may be ignored/over-ridden by exigencies such as the renewables mandate, or marginalised by mainstream land ownership

### 3d. A NEW DESIGNATION FOR WILD LAND

Other designations cover some of the top 10% wildest areas that fall outside of NSAs, with three Sites of Special Scientific Interest (SSSI) to the west of Kinlochewe - Beinn Dearg, Fannich Hills and Ben Wyvis – appearing to be picked out individually by the mapping (see Fig 3d.1 for a mapping of statutory designations).

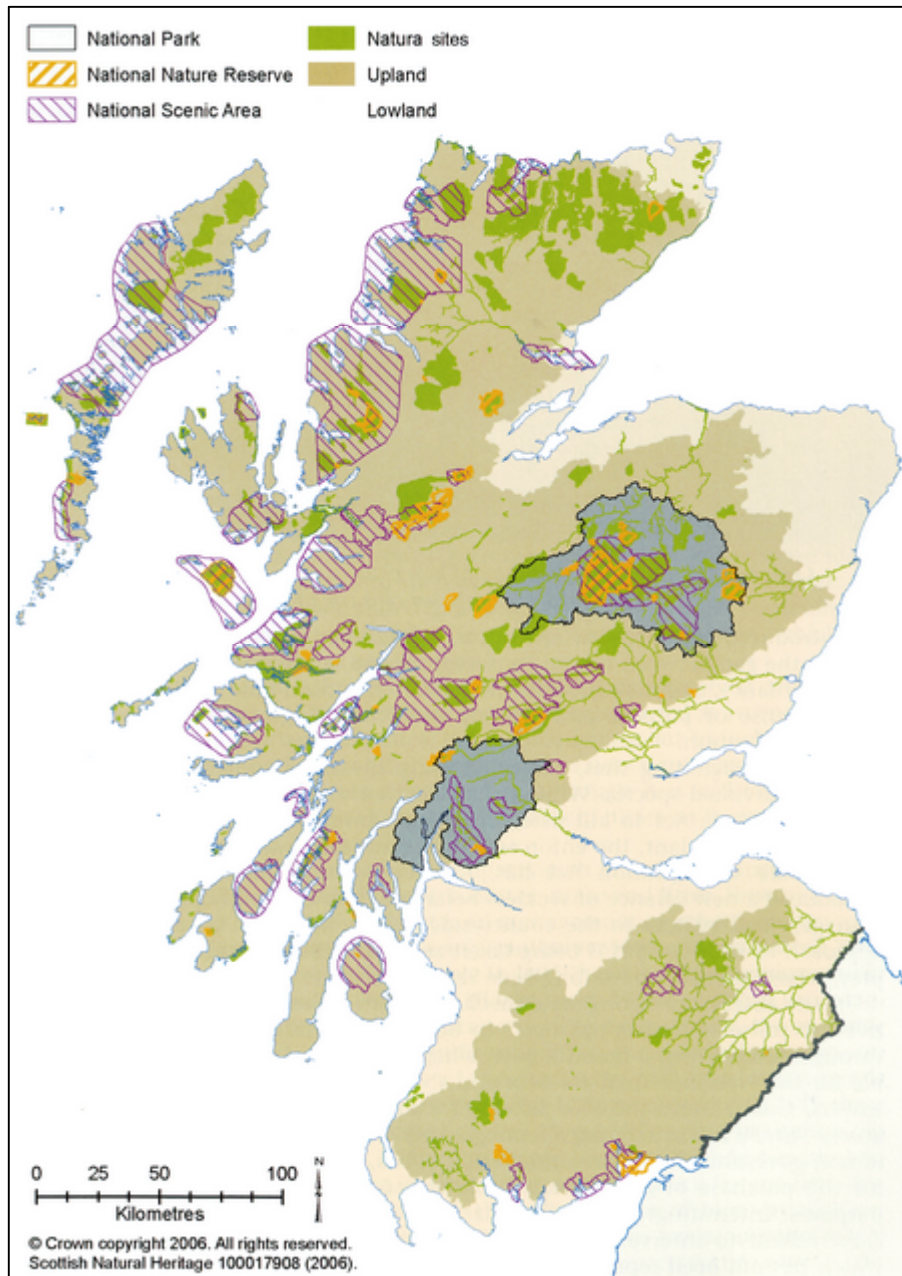


Fig 3d.1 Statutory designations

There are areas of wildest land that have no statutory designation. Thus below those three SSSI, there is a band of wildest land that stretches from Achnasheen- Muir of Ord, down to Malaig-Fort William. While the majority of this band falls either in an NSA (Glen Affric, Kintail, Knoydart) or a SSSI (Monar Forest, Glen Strathfarrar, Affric - Cannich Hills, Glen Affric, and the larger Glen Affric NNR) there is perhaps 30-40% of the band (to its NW) that has no statutory designation. It is however covered instead by a local landscape designation (see Fig 3d.2).

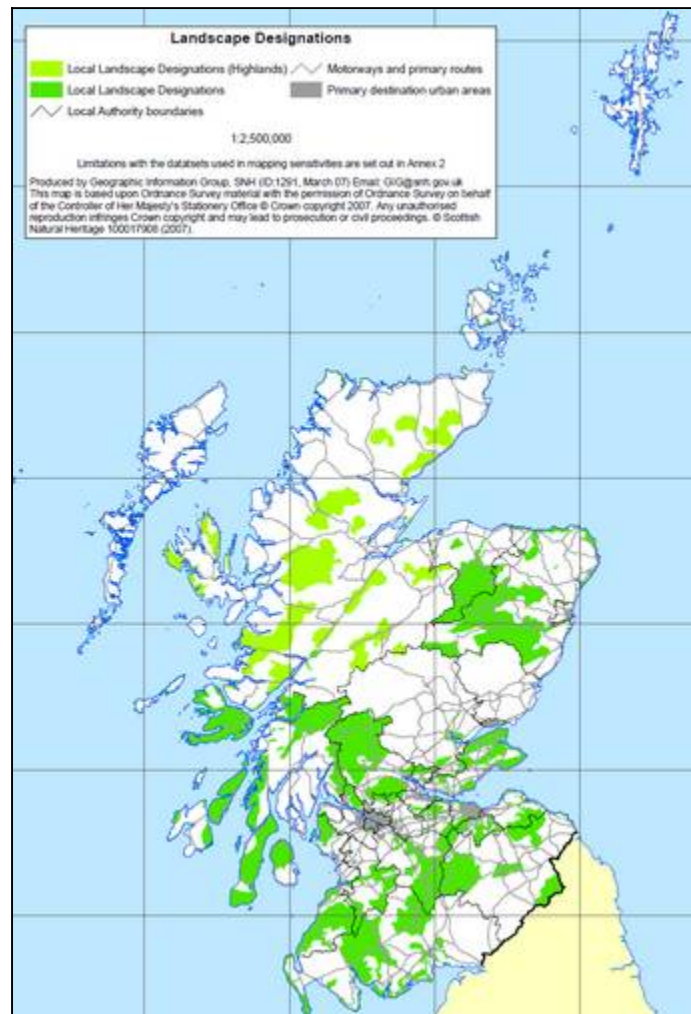


Fig 3d.2 Local landscape designations

These local landscape designations are identified by local authorities, based on locally valued landscape character and qualities, and are included in local development plans along with associated policies. In this, they have similar origins and aims as NSAs. The names used for local landscape designations vary: they are *'Areas of Great Landscape Value'* in Moray, *'Special Landscape Areas'* in Dumfries and Galloway, and *'Sensitive Landscape Character Areas'* in Ayrshire. There are also regional landscape designations identified in the original Highland Structure Plan. The Guidance to local authorities identifies their importance in protecting landscapes that may have limited capacity for change; in promoting some of the most important outdoor settings for recreation and tourism; and guiding urban expansion by specifically identifying areas of landscape importance within or close to existing settlements. The Guidance also gives a basis on which to identify areas for designation, based on landscape qualities. Under Naturalness, it describes the qualities as "*landscapes with extensive semi-natural habitat, a lack of human presence and perceived qualities of wildness. May include areas of wild land*"

It is interesting to note that the three SSSI picked out by the wild land mapping (see earlier) are also covered by local landscape designations. There is however, some part of the wildest areas that is not covered by any statutory or local landscape designation, such as in the far north west, like Strath Dionard; the hills near Cape Wrath; and Glen Golly. Should there be an expansion of existing protected area networks to include the unprotected wild lands, with some modification through extra guidance on wild land protection, or should there be a new designation to cover all these wildest areas?

To begin to answer this, a focus will be given to Wester Ross NSA and its area of 1,450km<sup>2</sup>. The NSA encompasses a significant area of wildest land, stretching from below Ullapool and down to Lochcarron, and east of Gairloch over to Kinlochewe. The annual "Great Wilderness Challenge" is a 25 mile mountain trek from Dundonnell to Poolewe. This route is described in the recent survey for the Special Qualities of the NSA as "through the heart of the wildest part of the NSA". The survey says the NSA has great tracts of wild and remote land:

*"Roads and tracks are few and far between and much of the mountain landscape is renowned for being wild and remote, with a natural vegetation cover and few, if any, buildings or structures"*

About 26% of the area of the NSA is covered by 20 SSSI, and these designated sites overlap with a large proportion of the area of wildest land mapped in the NSA (see Fig 3d.3). However, there are significant parts of this wildest area that are not covered by SSSI designation, but only the NSA. These are Fisherfield Forest in the north, Flowerdale Forest and Shieldaig Forest in the middle, and to the west of Shieldaig in the south. (These are historic *hunting* Forests, not woodland.) It is interesting to note that the route of the Great Wilderness Challenge, described as the wild heart (see earlier) is predominantly through an undesignated area of the NSA.

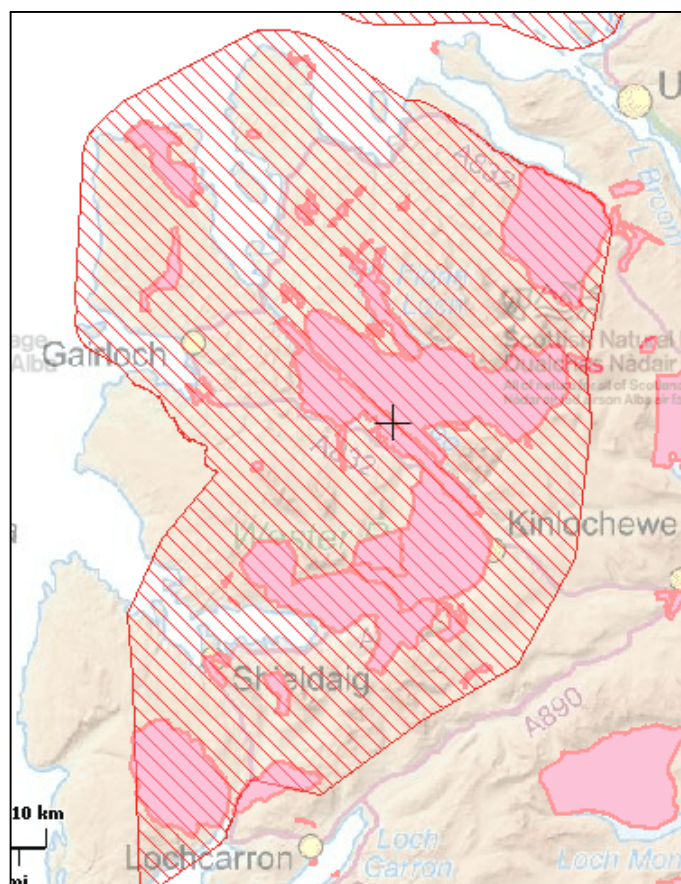


Fig 3d.3 Wester Ross NSA (hatching) showing SSSI

A number of the SSSI within the NSA have multiple designations since protected areas arising out of EU directives, and wetlands under an international treaty, are implemented in Scotland through the SSSI system. Thus Loch Maree is also a Special Area of Conservation (SAC) a Special Protection Area (SPA) for birds, a RAMSAR wetland, and the islands in the Loch are a National Nature Reserve. In all there are two SPA and five SAC, and one RAMSAR, covering 64% of the total area of SSSI. While each of these layers of designation on SSSIs have a different emphasis, it is the SSSI designation and its

comparison to the NSA that tells us whether the existing protected area networks are capable of safeguarding wild land.

The SSSI system does not necessarily act as a driver for wild land. This is because it is based on a reductionist or compositional approach of maintaining stasis through management intervention, of seeking protection for individual species and specific habitats rather than on protecting natural processes within areas containing whole ecosystems. The distinction is between Secondary habitats arising through human use and management of land, their continued existence being dependent on management intervention, and Primary, substantially unmodified habitats that are shaped by biotic and edaphic factors and the dynamic forces of nature. In the absence of much in the way of primary habitat in the UK, it is predominantly secondary habitat that is designated. The compositional nature of that designation means there is little or no latitude for the changes associated with natural evolution or the dynamic process of primary habitats. Thus a secondary habitat designated as a SSSI would need that designation removed if there was an aspiration for the protected area to take on more of the characteristic of wildness. If the SSSI is also an SPA, then this route is not available since there is no provision in the EU Birds Directive to remove designation of an SPA.

On the other hand, the principal approach of protection of an NSA (and a local landscape designation) is development management, the regulation of built physical structures, with no explicit context for the control of other land uses. It may be surprising to recognise that it is this distinction between NSA and SSSI that is allowing landscape simplification to be reversed in the Wester Ross NSA. In 1997, John MacKenzie started planting new native woodland on his Gariloch Estate, with first the 10km<sup>2</sup> of Bad na Sgalag Forest near Loch Bad na Sgalag, and then in 2003 the 40km<sup>2</sup> of Baile Mor Forest in the area of Flowerdale Forest and Shieldaig Forest between Gairloch and Loch Maree – over three million trees have gone into this new woodland. SNH believe that the new woodland will provide a greater range of prey species for golden eagles, and expects pine martens and wildcats to move in. Birds now confined mainly to the east, like black grouse, crested tits, and crossbills are others that should find suitable habitat here, as the new forest cover provides wildlife a habitat corridor to use for westward migration. The Wester Ross Fisheries Trust believes that the trout lochs in the new woodland may become more productive as the trees become established.

The reality is that because of the compositional nature of the SSSI designation, these new woodlands would not have been planted unless they were in areas that did not have that designation. In addition, the new woodlands are large scale, much larger than the areas of native woodland in SSSI, such as Shieldaig Woods, Talladale Gorge, Coulin Pinewoods, Fionn Loch Islands, the islands on Loch Maree and in Ben Eighe and Adair-Letterewe. The smaller areas of woodland in these SSSI impose limits to the natural ecology through fragmentation and thus isolation, whereas larger areas that are networked through the wider landscape bring an ecological coherence that was lost through landscape simplification.

The case for a new designation for wild land is compelling, when it is seen that the reversal of landscape simplification in the Wester Ross NSA is happening in spite of the NSA designation, rather than because of it, and in the absence of SSSI designation. It is unlikely that there is scope within the present SSSI system to accommodate a new "*broad habitat*" of wild land. While there is nothing in the 2004 legislation for SSSI that absolutely ties it to a compositional approach that requires management intervention, it does strongly imply that approach through a process of notification of natural features on land of special interest, those natural features being flora, fauna, geological or geomorphological features, rather than in the terms of whole functioning ecosystems, unhindered dynamic natural processes, or even wild nature.



The underpinning of a new designation would be provided by a fresh look at the UK's obligations for the measures required under Article 8 of the Convention on Biological Diversity, and particularly the question of natural integrity when it comes to the requirement to establish a system of protected areas or areas where special measures need to be taken (8a) in the protection of ecosystems, natural habitats and the maintenance of viable populations of species in natural surroundings (8d) and the rehabilitation and restoration of degraded ecosystems and the recovery of threatened species (8f).

Ownership invariably confers rights, and it is understandable in a situation where the aim is to restrict land use, that the implementation of national protected area systems has relied on having state ownership as a means to ensure that the restrictions are observed. This is the evidence from the protected area legislation in continental Europe, and in the implementation of national protected area systems, which shows that public land ownership is a substantial factor in the effective realisation of the aims of those protected areas for a "*free dynamic in nature*". There is private or mixed ownership of some of the national parks in countries like Austria, Denmark, Holland and Latvia, and where there are contractual and funding agreements in place that assure compliance. However, other than a very few instances, the core area of these parks is state owned. In this it should be noted that Beinn Eighe is within the Wester Ross NSA, and the majority of this national nature reserve has been in public ownership since 1951. It has the potential to be a "*core area*" if Wester Ross NSA is ever considered for conversion to a national park or a Biosphere Reserve, or it can be connected over to the Flowerdale Forest area if there is a new landscape designation for wild land that covers currently non-designated areas.

Given that the size of designated wild land areas in Scotland are more than likely to be in the range of an NSA (median 15,778.4ha) rather than a SSSI (median 62.3ha) then some thought should be given to their governance, recognising that along with facilitating restoration and conservation of ecosystems it should take account of day to day engagement with communities that surround the wild land, as well as promoting public enjoyment of the area while managing visitor pressures. The Department of the Environment (DOE) in Northern Ireland recently consulted on new enabling legislation for designating their first national parks. The consultation document included a detailed look at governance options, the constitution of any Management Body and the responsibilities and skills of Board Members. Some useful analysis of the strengths and weaknesses of a range of governance options was reviewed. These options included:

- National Parks Service that would be part of the DOE (similar to the Republic of Ireland)
- independent Landscape Protection Service that would have a Northern Ireland-wide remit for both national parks and AONBs
- independent National Parks Service for Northern Ireland
- National parks governed by a District Council
- a Local Independent Body for each park

The following processes and cost implications of a new, legislative designation for wild land can be identified. It is assumed that SNH would be tasked by the Scottish Government, as they were with Coastal and Marine National Parks, to carry out a series of assessments to evaluate areas which might be considered as candidates for the new designation, with their advice submitted to Ministers (see Section 3a).

#### Policy and legislative development

Formulation of policy by Ministers and civil servants; administrators and solicitors develop the policy in detail; solicitor prepares drafting instructions and drafter prepares the Bill; consultation on draft of the Bill; pre-legislative scrutiny by the committee of the Parliament expected to consider the Bill; Executive finalises text of the draft Bill; cover letter and accompanying documents drafted

(Explanatory Notes, Financial Memorandum, Executive statement on legislative competence, Policy Memorandum); parliamentary process for the bill.

#### Administrative and continuing policy development costs

The designation process itself (administration of selection process, survey; consultation); management, planning and administration costs, costs of management bodies, consultation, rent and administration, and provision of staff, buildings and equipment; ongoing management actions and incentives including conservation management measures, research and monitoring, visitor management, interpretation and publicity material, and training and education; and occasional capital investments (compensation for rights foregone or loss of land value, habitat surveys, and infrastructure for public access).

#### Opportunity costs of foregoing income on the designated land

The lost economic output from agriculture, plantation forestry, fishing, property and tourism, and social impacts such as loss of income and employment opportunities. These may be low because of the remoteness of the wildest areas and the reliance or otherwise on subsidies such as Single Farm Payment and agri-environment schemes.

#### Indirect costs or secondary effects

These include the management of recreational impact if the designation attracts large numbers of visitors, or compensating surrounding land owners if increased numbers of wildlife within wild land areas spill out and compromise economic land use. These indirect costs or secondary effects are less easy to quantify.

## SWOT

S = bringing in a new designation would indicate the strength of conviction and commitment to wild land. There would be spill-overs for tourism/recreation economy.

W = likely to have opposition from politicians, land owners, some fishing interests. It could conflict with other Scottish policy on landscape in the Landscape Strategy since wild land as a concept is undeveloped. It will be in opposition to the approach of other designations and may only work where there is no SSSI designation. Isolated, small areas of protected wild land would be difficult to protect adequately unless buffered (eg. within a national park or NSA). Protected wild land areas may create a 'boundary effect', disconnecting the protected area from what goes on around it. Wild nature ignores protected area boundaries.

O = It could put Scotland at forefront of EU wilderness legislation and build on the trend that has seen the Scottish Government commission the wild land in Europe report, and SNH carry out fine-scale wild land mapping

T = Comes from opposition - likely to be weak legislation if detractors force compromise or exceptions. Cost of legislation and implementation. Institutional inertia and lack of commitment from SNH, the Government's adviser

## 4. CONCLUSIONS

This paper identifies a biophysical basis for identifying wildness in Scotland, and the current positive drivers for that wildness. Turning back landscape simplification is seen as key to enhancing that wildness, and which should form the basis of a policy and support mechanism for wild land in Scotland. Options are given as to how to protect wild land areas, from greater public engagement with wild land, from use of existing legislation, or from new legislation for wild land. There is no hierarchy of achievability intended by the order in which they are presented.