

Scottish Natural Heritage

Scotland's wildlife

An assessment of biodiversity in 2010



2010 International Year of Biodiversity

External sources are shown in the text. Otherwise the content of this report is taken predominantly from SNH sources. The report should be cited as follows:

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Scottish Natural Heritage
All of nature for all of Scotland



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Foreword

Roseanna Cunningham, MSP
Minister for Environment



I welcome the publication of this assessment by Scottish Natural Heritage of Scotland's progress against the 2010 biodiversity targets. While there are clearly still some challenges to address, I think that we can be proud of the progress achieved. I know that this progress is the result of efforts across a wide range of partners in central and local government, in agencies, by land managers and the charitable wildlife organisations.

2010 is International Year of Biodiversity, and in Scotland I want to achieve:

- increased individual engagement and activity to enjoy and support our natural environment;
- a greater appreciation, at all levels within government and wider society, of the importance of biodiversity to our health and prosperity as individuals and communities.

I believe that we can engage people most effectively through a positive message. Our experiences of nature can inspire us, and should be shared with friends and family. Even small actions to promote biodiversity can make a real difference.

This publication provides a wide range of information about the health of our species and ecosystems. As we look ahead to the new targets for biodiversity and ecosystem health beyond 2010, this compendium of information will support us in making effective plans for the future.

Some of the best biodiversity information comes from the individual efforts of people contribution on a voluntary basis to wildlife surveys. These actions deserve our gratitude, and this is an opportunity for more people to engage in this way with our biodiversity.

A handwritten signature in black ink, reading "R. Cunningham". The signature is fluid and cursive, with a large initial "R" and a long, sweeping underline.

Section A

1 Introduction



1 Introduction

Biodiversity is the variety of life. The spectacular and varied wildlife within our iconic landscapes, coastal areas and seas is fundamental to the livelihood and quality of life of people in Scotland. Scotland will be the poorer if the road and rail verges and hedgerows we travel past; the riverbanks, hills, woods and moorlands we walk through; the estuaries, coasts and seas that inspire and invigorate us; continue to lose wildlife. A resilient and diverse natural environment is the essential foundation for a greener, more robust, healthier, wealthier Scotland.

Life flourishes in Scotland. From the varied and wave-swept coasts and islands, the seas extend beyond the shallow waters of the continental shelf and into enigmatic deep waters where corals are found. Whales, dolphins and seals; an abundance of fish, seabirds and other marine wildlife; are integral to Scotland's character. The lochs and rivers of Scotland – many renowned for Atlantic salmon and sea trout; the woodlands, moorlands and mountains – home to grouse, deer and the golden eagle; are among the finest in Europe.

Scotland's wildlife is diverse and stunning. But that is not to say that all of it is as secure or as abundant as it might be. The resilience of the natural world – and ecosystem services such as climate regulation, the pollination of flowering plants and the provision of fresh water – can not be taken for granted. Globally, biodiversity is being lost at an increasing rate. European Union (EU) Heads of State or Government undertook in 2001 to [halt the decline of biodiversity](#) in the EU by 2010 and to restore habitats and natural systems. In 2002, they also joined some 130 world leaders, as Parties to the [Convention on Biological Diversity](#), in agreeing to significantly reduce the rate of biodiversity loss globally by 2010. In 2006, the EU issued a [Biodiversity Communication](#) and detailed [Biodiversity Action Plan](#) to halt the loss of biodiversity by 2010. A consistent approach to assessing progress through targets and indicators has been adopted in Scotland.

Scotland has played an active part in stemming biodiversity loss, both with the rest of the [UK](#) and in its own right. A 25-year framework for action commenced in 2004 with the publication of [Scotland's Biodiversity Strategy](#). It recognises both the urgency of the task to halt biodiversity loss and that action needs to be sustained in order to restore it. The longer-term vision is that Scotland is recognised as a world leader in biodiversity conservation by 2030.

This report provides an assessment of progress with biodiversity conservation in Scotland by 2010, [international year of biodiversity](#). The purpose of the report is three-fold:

- to provide a factual account for the evaluation of the European 2010 target to halt biodiversity loss;
- to contribute evidence for formulating post-2010 targets; and
- to extend knowledge of Scotland's biodiversity and how it is changing.

2 Executive summary



2 Executive summary

Biodiversity is the variety of life. It includes variation between ecosystems, between the species from which they are formed, and genetic variation within species. This report presents a commentary on progress with Scotland's 2010 biodiversity targets. The key components of measuring progress are as follows:

1. Scotland's contribution to the 2008 UK BAP assessment
2. Scotland's biodiversity indicators
3. Site condition monitoring outcomes
4. Progress with Scotland's 2010 biodiversity targets

2.1 Scotland's contribution to the UK BAP assessment in 2008

Summary results for Scotland's five ecosystems, itemised below, are based on the conservation status of habitats and species in Scotland which have been identified for priority biodiversity action throughout the UK. By definition they are vulnerable and declining.

Terminology

The appraisal is based on a comparison of results for Scotland in the 2005 and 2008 UK Biodiversity Action Plan (BAP) reporting rounds. A **'better'** result means that fewer habitats or species were reported to be declining in 2008 than in 2005 (not that all declines had been arrested). Conversely, a **'worse'** result means that more were reported to be declining in 2008 than in 2005. An **'unchanged'** result means that the assessments in 2005 and 2008 were the same, and a **'divergent'** one means that both improvement and deterioration were evident.

The summary below excludes results where there was no clear trend but full details are shown within the chapters.

Coastal and marine

- The appraisal of 25 priority habitats (based on six matching assessments in 2005 and 2008) is **divergent** – with positive and negative elements. Of eight habitats assessed in 2008, those that were stable (**51%**) exceeded those declining (**38%**)¹.
- The appraisal of 136 priority species (based on 12 matching assessments in 2005 and 2008) is **better** – those that were stable or increasing rose from 59% to 66%. Of 28 assessed in 2008, those that were stable (**41%**) exceeded those declining (**12%**).

Lowland and farmland

¹ The remainder is accounted for by 'no clear trend' (as shown in Table 5.2)

- The appraisal of 10 priority habitats (based on eight matching assessments in 2005 and 2008) is **unchanged**. However, of the eight assessments in 2008, those that were declining (**63%**) exceeded those that were stable or increasing (**39%**).
- The appraisal of 108 priority species (based on seven matching assessments in 2005 and 2008) is **divergent** (although positives outweighed the negative elements). Of 16 assessed in 2008, the number that were stable or increasing (**32%**) was the same as those in decline (**32%**).

Fresh water and wetland

- The appraisal of nine priority habitats (based on five matching assessments in 2005 and 2008) is **unchanged**. Of the five assessed in 2008, the number that were stable (**60%**) was the greater than those in decline (**40%**).
- The appraisal of 75 priority species (based on 19 matching assessments in 2005 and 2008) is **unchanged**. Of 32 species assessed in 2008, the number that were stable or increasing (**41%**) exceeded the number in decline (**25%**).

Woodland

- The appraisal of seven priority habitats (based on six matching assessments in 2005 and 2008) is **better**. All habitats assessed in 2008 were stable or increasing.
- The appraisal of 170 priority species (based on 24 matching assessments in 2005 and 2008) is **divergent** (positive and negative elements). Of 31 species assessed in 2008, the number stable or increasing (**45%**) exceeded the number declining or lost (**28%**).

Upland

- The appraisal of eight priority habitats (based on four matching assessments in 2005 and 2008) is **better**. All of the assessed habitats were declining (slowing) in 2005, whereas one had become stable by 2008.
- The trend for 122 priority species (based on 13 matching assessments in 2005 and 2008) is **unchanged**. Among 13 species assessed in 2008, the proportion that were stable (**84%**) exceeded those that were declining (**8%**).

Scotland overall

- The overall appraisal of 39 priority habitats assessed in 2005 and again in 2008, is **better**. Among 41 habitats assessed in 2008, the proportion that were stable or increasing (**41%**) exceeded those declining (**31%**).
- The overall appraisal of 181 priority species assessed in 2005 and again in 2008 is **divergent**. Among 230 species assessed in 2008, the proportion that were stable or increasing (**32%**) exceeded those declining or lost (**15%**).

2.2 Scotland's biodiversity indicators

The UK approach, as for Scotland, is consistent with the European framework for assessing progress. The European indicator-based assessment, 'Progress towards the European 2010 biodiversity target' ([EEA Report No 4/2009](#)), was launched on Biodiversity Day, 22 May 2009. Successes included establishing the Natura network, reduced pollution and a leveling-off in the decline of wild birds. However, the report concluded that European biodiversity remains under serious pressure, not least from the **over-exploitation of marine fish stocks; invasive non-native species**; and potential impacts of **climate change**. **Degraded ecosystems** have a reduced capacity to respond: 40-85% of habitats and 40-70% of species of European interest had an unfavourable conservation status. The European assessment concluded that the target to halt biodiversity loss by 2010 had not been met.

The EU 2010 Biodiversity Baseline ([EEA Technical report No 12/2010](#)) concluded that the serious and continuing loss of Europe's biodiversity reflects the continuing decline in the ability of ecosystems to sustain their natural production capacity and perform regulating functions. Just 17 % of habitats and species were in favourable condition: marine mammals 25%; amphibians 22%; reptiles 21%; dragonflies 16%; terrestrial mammals 15%; birds 12%; butterflies 7%. Continued increase in land abandonment, urban sprawl and other artificial infrastructures was apparent, with nearly 30% of EU land being highly fragmented.

Of 33 assessments in the UK assessment, [UK Biodiversity Indicators 2010](#), 15 (46%) showed improvement since 2000, and nine (27%) showed improvement over the longer term. Those showing improvement since 2000 included bat populations, UK Biodiversity Action Plan priority species, the extent of protected areas, the proportion of woodland under certified management, sustainable fisheries, biological river quality, and expenditure on both UK and global biodiversity. Those showing long-term deterioration included populations of farmland birds and woodland birds, populations of specialist butterflies, bat populations and plant diversity (in woodlands, grasslands and boundary habitats).

As well as being an integral part of the UK assessment, Scotland has a distinctive biogeography and political identity, with a [biodiversity strategy](#) and [indicators](#) associated with it². The indicator framework is summarised in **Annex 1**. Among the 22 biodiversity indicators for Scotland, first published in 2007, 17 describe wildlife trends:

Increased / positive trends

1. Between 1994 and 2008, 50 of 65 terrestrial breeding bird species in Scotland increased in abundance, by 31% overall. Woodland birds increased by 64%; farmland birds by 26%; and upland birds remained unchanged.
2. Wintering waterbird numbers (38 species) peaked at 120% in 1996/97 and remained relatively stable prior to declining in recent winters. The recent decline may suggest that waterbirds are becoming less reliant on the security of overwintering in Scotland, and therefore less abundant, as mild winters become

² The indicators were first published in 2007 and are maintained and updated on the [SNH web site](#) (see <http://www.snh.gov.uk/publications-data-and-research/trends/scotlands-indicators/>).

commoner on continental Europe. Nevertheless, in 2006/07 the indicator was 107% of the 1975/76 baseline value. Goose numbers (6 species) increased to 311% in the winter of 2003/04, before falling back to 294% in 2006/07; wildfowl numbers (15 species) have remained relatively stable at 99% in 2006/07; wader numbers (13 species) peaked at 109% in 1996/97 but then declined to 78% in 2006/07.

3. Habitats and species are notified for their national or international importance on 1,451 protected areas, covering around 12% of Scotland. By October 2010:
 - 62% of 2,971 assessed habitat features (inc. 601 geological) were in favourable condition; 7% were unfavourable recovering; and 31% were unfavourable.
 - 70% of 370 species in 2,093 assessed populations were in favourable condition; 3% were unfavourable recovering; and 27% were unfavourable.
 - When newly-established remedial action is taken into account, 77% of notified habitats and species are in favourable / recovering condition³.
4. Environmental improvements have reduced air, land and water pollution, allowing wildlife to re-colonise parts of Scotland that had become degraded by industrialisation and dereliction. By 2005 fish diversity was being restored in the catchments and estuaries of the Forth and Clyde. Otter occupancy rose from 57% of Scotland in 1979 to 92% in 2004.

Baseline assessments

Habitats and species that are strongly in decline or especially vulnerable have been identified for targeted action and are referred to as biodiversity 'priority' habitats and species. Appreciable progress is being made:

1. Of the 39 priority habitats in Scotland, six (15%) were increasing; 11 (28%) were stable; and 13 (33%) were declining. For the remainder, the trend was unknown for eight and unclear for one.
2. Of the 197 priority species in Scotland, nine (5%) were increasing / probably increasing; 65 (33%) were stable / probably stable; and 43 (22%) were declining. For the remainder, the trend for 14 was unclear and for 63 was unknown.
3. Components of woodland (natural and plantation) diversity sampled during 1995-1999 were as follows: mean shrub layer cover was 17% in areas with an upper canopy greater than 5m high; mean number of trees and shrub species (native and non-native) was 2.2 / 0.25ha; mean volume of deadwood (fallen and standing) was 4.4 m³ per ha; total woodland in old-growth stage was 4.8% (old-growth conifers pre-1901; broadleaves pre-1861).

³ Results elsewhere in this report incorporate this adjustment (i.e. to overcome the time-lag between assessments, as does the *National Indicator*), as well as the latest survey results and revisions to the number of notified features on SSSI under the Nature Conservation (Scotland) Act 2004 review. Indicators [S10](#) (notified species) and [S11](#) (notified habitats) on the SNH website are updated in March and so may not match exactly with the latest updated figures here.

Fluctuating

1. Marine fishing places pressure on marine diversity in a number of ways – by reducing the abundance and average size of target stocks; in-turn affecting species that depend on them for food; and physical impacts on seabed communities. Conservation of commercial fish stocks in the sea is important both to the economy and to the biodiversity of the seas around Scotland. Eleven key commercial fish stocks are assessed annually, of which six were reported to be at full reproductive capacity, i.e. not in danger of collapse, in 2007.
2. Moth abundance among 185 of the commoner species fluctuated between 1975 and 2004. Emerging evidence from the [Rothamstead Insect Survey](#) indicates long-term declines among common moth species in Britain.

Divergent trends

1. Among marine plankton: cool water *Calanus finmarchicus* had declined to just 8% of its 1958 abundance by 2007; *C. helgolandicus*, a warmer water species, increased to 281%; total *Calanus* abundance declined to 56%; decapod larvae increased to 117%; phytoplankton abundance increased to 152%.
2. Butterfly trends were stable between 1979 and 2007. Prior to the mid-1980s, butterfly species that are restricted to specific and often isolated habitats decreased to 48% of their 1979 abundance, but have been stable since.

Decreased / negative trends

1. Scotland holds internationally important numbers of breeding seabirds. Against a marked [increase since 1970 in the UK](#), the numbers of breeding seabirds and the numbers of chicks produced each year had been in decline since 1992, although appeared to stabilise between 2007 and 2009.
2. The majority (84%) of 867 non-native species for which comparative records of geographical distribution were available in 2004, showed no change. However, 14% had increased compared with 2% that decreased.
3. According to the [Countryside Survey](#), vascular plant diversity fell by nearly 10% between 1998 and 2007. Competitive plant species increased, as did plant species associated with wet and with shady conditions. Species tolerant of harsh environments (such as low nutrient soils) and those associated with open, disturbed conditions (ruderals) decreased. Species associated with more fertile conditions also decreased.

People and biodiversity

Among the five indicators that reflect people's engagement with biodiversity:

- The composition of greenspace in built-up areas showed little overall change (2007-2009);

- the number of adults in Scotland visiting the outdoors annually remained at around 78% (2003-2007);
- in a survey of attitudes to biodiversity in 2006 and 2009, around 80% of adults in Scotland responded positively to questions of interest in, relevance of, and concern for Scotland's biodiversity;
- involvement in biodiversity conservation (2006-2008) and membership of biodiversity NGOs (2007-2009) increased.

2.3 Site condition monitoring outcomes

Protected sites are important because their special characteristics and natural processes favour biodiversity. Two of Scotland's 22 biodiversity indicators reflect notified habitats and notified species.

Site-based conservation of nationally and internationally important habitats, species and geological features is undertaken through a network of 1,451 protected areas (Sites of Special Scientific Interest, Ramsar, Special Areas of Conservation and Special Protection Areas). The extent of protected areas exceeds one million hectares, or about 12% of Scotland.

Some 2,370 habitat and 601 geological features assessed for condition include blanket bogs of the Flow Country; montane habitats of the Cairngorm mountains, and ancient rock formations at Knockan Crag. Their condition by October 2010 was as follows:

- 55% of habitat features (non-geological) were in favourable condition; 17% were in unfavourable recovering; and 27% were unfavourable.
- 99% of marine and 83% of coastal features were favourable/unfavourable recovering.
- 78% of freshwater and 76% of wetland features were favourable/unfavourable recovering.
- 66% of upland, 65% of woodland, 81% of lowland heathland and 65% of lowland grassland features were favourable/unfavourable recovering.
- 96% of geological features were favourable/unfavourable recovering.

Approximately 370 species are notified on protected areas in Scotland. Species are notified for reasons such as rarity (e.g. the great crested newt, which has declined across Europe), or international importance (e.g. lichens of the west coast of Scotland, which are unrivalled elsewhere in Europe). Their condition was assessed from 2,093 monitoring observations of individual species or species assemblages. By October 2010 their condition was as follows:

- 70% of species populations were recorded as favourable and 6% were unfavourable recovering; 24% of species populations were in an unfavourable condition.
- The percentage of species that were favourable/unfavourable recovering in the different categories was: 98% of land mammals; 100% of amphibians, 97% of dragonflies; 93% of marine mammals; 85% of fish; 84% of invertebrates; 74% of birds; 96% of butterflies; 81% of non-vascular plants and 57% of vascular plants.
- Conversely, 43% of vascular plants; 19% of non vascular plants; 16% of birds; 16% of invertebrates; 15% of fish; 7% of marine mammals and 4% of dragonflies were in an unfavourable condition.

A summary of condition assessments of habitats and species within protected areas for the five ecosystems by October 2010 is as follows:

- Coastal and marine – 426 assessments; **86%** favourable or recovering.
- Lowland and farmland – 160 assessments; **68%** favourable or recovering.
- Fresh water and wetland – 553 assessments; **77%** favourable or recovering.
- Woodland – 464 assessments; **66%** favourable or recovering.
- Upland – 767 assessments; **66%** favourable or recovering.

Overall, 73% of notified habitats, 76% of notified species and 96% of earth science interests were in favourable / recovering condition.

2.4 Progress with Scotland’s 2010 biodiversity targets

Scotland’s 2010 biodiversity targets (**Annex 2**) underpin the high level target to halt the loss of biodiversity by 2010. Based on the European Biodiversity Action Plan framework and adopted by the Scottish Biodiversity Committee in March 2008, eight priority objectives, four supporting measures and 37 targets for action have been specified for Scotland.

At the end of 2010 progress against the 37 targets (**Annex 2**) was as follows:

Status of actions		Progress at end of 2010
on target	green	22
room for improvement	amber	9
not on target	red	6

- 22 actions (59%) were on target, e.g. ‘principal pollutant pressures on terrestrial and freshwater biodiversity substantially reduced by 2010’. Regulations to control point source pollution from industry and diffuse pollution from agriculture are implemented by SEPA.
- 9 targets (24%) had room for improvement, e.g. ‘climate change adaptation and mitigation measures’. Recently-introduced legislation and action plans will help to address this but will take time to deliver significant action on the ground.
- 6 actions (16%) were not on target, e.g. ‘reducing the impact of invasive non-native species’: 14% of non-native species had increased in range while only 2% had decreased.

2.5 Conclusion

Very considerable progress has been made by many people and organisations that care about Scotland's biodiversity. Biodiversity loss has been slowed in recent years where targeted action has been applied.

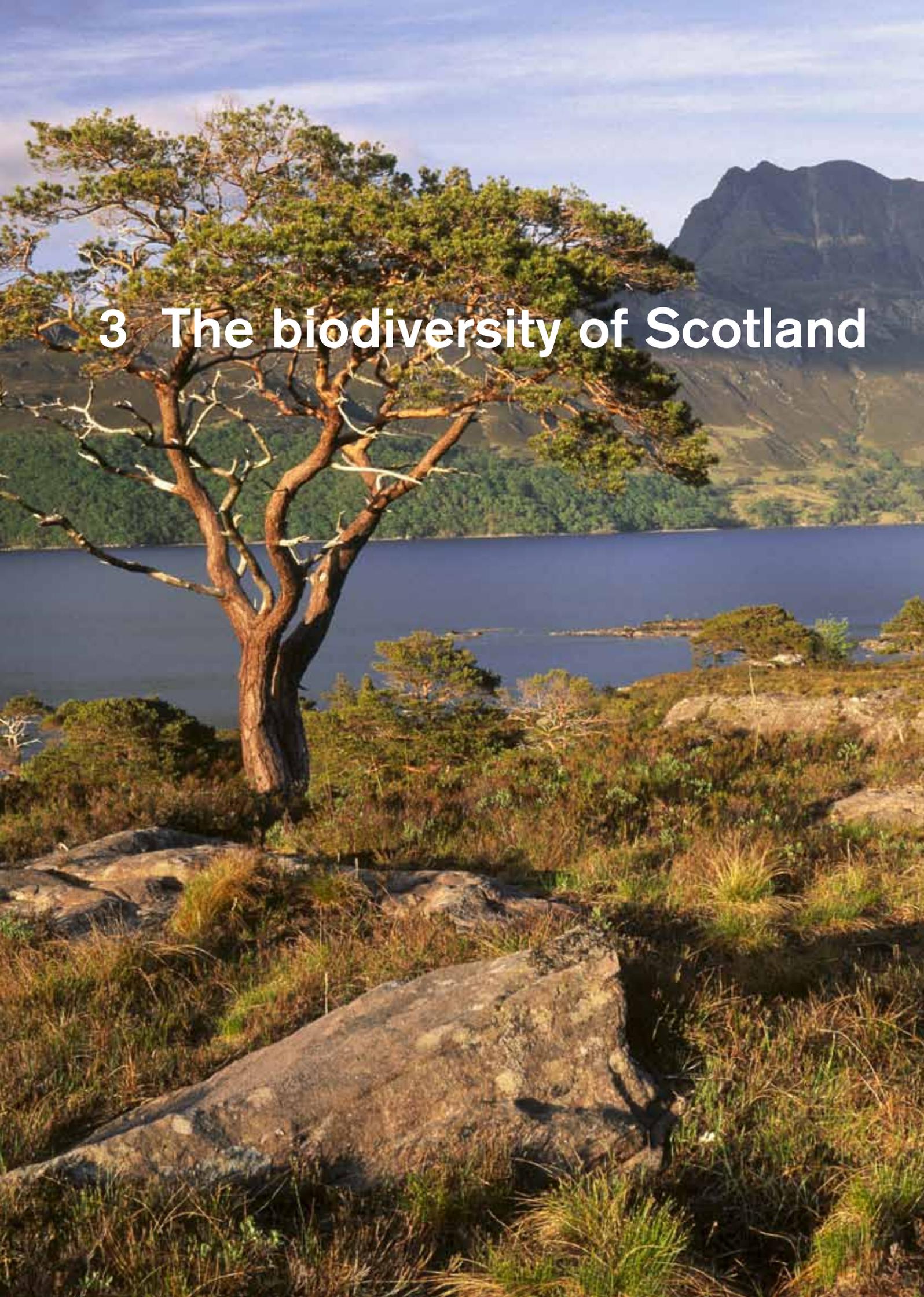
However, Scotland's biodiversity indicators, the condition of notified habitats and species on protected areas, and progress towards meeting Scotland's biodiversity targets demonstrate that biodiversity loss has not yet been halted and will require renewed and sustained effort over a longer period.

A major challenge to be faced in the years ahead will be climate change, with profound implications for biodiversity in Scotland. Ecosystems and their component species may be affected by altered weather patterns and growing seasons. The ranges of individual species are likely to change, while some of those restricted to particular habitats, such as on mountain tops, may decline or disappear from Scotland altogether. Climate change and the needs of modern life give greater urgency to actions which are required to achieve the aims of Scotland's Biodiversity Strategy.

Scotland's Biodiversity Strategy goes beyond halting the loss of biodiversity, towards restoring habitats and species to a resilient state as well. Ecosystems that function naturally are better able to retain the diversity of wildlife that makes Scotland a special place to live in – supporting livelihoods such as in farming, fishing and tourism; safeguarding the productivity of land and surrounding seas; securing clean water and controlling flooding; and making urban life more enjoyable and healthy.

Scotland has played an active part in stemming biodiversity loss. It's [Biodiversity Strategy](#), published in 2004, is a 25-year framework for action. It recognises the urgency of the task to halt biodiversity loss and that action needs to be sustained in order to restore it. International Year of Biodiversity 2010 has been an important milestone – much has been accomplished, more remains to be done. The account here acknowledges what has been achieved and will help to set Scotland's course into the future.

3 The biodiversity of Scotland



3 The biodiversity of Scotland

Scotland's seas, positioned between sub-polar and sub-tropical influences, support a fascinating and diverse assemblage of marine habitats and species, provide a wealth of important natural resources and offer abundant opportunities for enjoyment.

Within a relatively small land area, Scotland displays considerable geological diversity – the heritage of some three billion years of earth history. The post-glacial colonising vegetation was Arctic. As the climate warmed around 10,000 years ago, woodland became widely distributed throughout much of the Scottish mainland. Arctic communities became restricted to the higher hills and the north. Rising sea levels from the melting ice sheet led to the formation of the English Channel some 8,000 years ago, restricting further species colonisation. The climate thereafter became cool-maritime, leading to the expansive peat formations, for which Scotland is now renowned.

Scotland lies at a latitude close to that of the Nordic region. With a similar geology and soils, glacial history and cool maritime climate, the plants and animals of Scotland and the Nordic Countries have many common elements. Being on an island has restricted the spread of some species in the post-glacial period, and species richness is somewhat lower than at comparable latitudes in continental Europe.

A remarkable feature of Scotland's species complement, which is mostly shared with other parts of the UK and Europe, is its diverse mix of Atlantic, arctic, arctic-alpine and boreal elements. Many are on the extreme edge of their global range. Although most of the species are not scarce elsewhere in Europe, the assemblages of boreal-arctic peat land birds, and birds of the montane plateaux and corries, have no counterparts elsewhere. The natural range of 31 species is confined to Scotland alone.

The relatively mild, wet climate of the west coast is particularly favourable to 'lower' plants. Consequently, more than half of the liverworts and mosses, and over a third of the lichens of Europe occur in Scotland. Being sensitive to air and water pollutants, many lower plants have their European stronghold along the Atlantic coast and Western Isles. Also of international importance are Scotland's breeding populations of seabirds, grey seals and overwintering geese.

Scotland is home to around 5.1 million people. It is, for the most part, a managed landscape, reflecting a history of settlement, farming, forestry, sport, industry, and utilisation of the surrounding seas. By 1919, when the Forestry Commission was established, Scotland's forests had been reduced to 5% of the land area, despite substantial tree planting by landowners in the nineteenth century. Woodland cover, of around 17% today, is set to increase to 25% by 2050. In 2008 some 1.8% of Scotland's land surface was built over ([N2 Built Development Indicator](#)). About a quarter was managed or 'enclosed' farmland; much of the rest that was not under forest and woodland was utilised for grazing and / or sport. The diversity of parent material, landscape, climate and land use in Scotland contributes to major differences in the nature and distribution of soils and vegetation. Although modified to varying degrees, a high proportion of Scotland is near-natural in character, e.g. moorlands and peatlands, mountain tops, coasts and seas.

Collectively, Sites of Special Scientific Interest (SSSI), Natura sites (Special Areas of Conservation and Special Protection Areas), and National Nature Reserves (NNRs) cover around 12% of Scotland's land area. Protected sites are important because of their special characteristics and natural processes that favour biodiversity. Around 370 species of national or international conservation importance occur on 1,451 protected areas in Scotland. Maintaining the underlying ecological processes and associated habitat structures, along with a level of habitat variability, can help maintain the resilience of protected sites and their associated biodiversity.

Habitat connectivity in the landscape can assist species to disperse and adjust geographically to a changing climate, whereas isolated sites may be vulnerable. Conversely, care needs to be taken to avoid opportunities for damaging invasive species to spread through the landscape.

It terms of [valuing our environment](#), Scotland's environmental assets underpin economic growth. Output from activities which depend on the natural environment is estimated at £17.2 billion a year, or 11% of total Scottish output. This output supports 242,000 jobs, or 14% of all full time jobs in Scotland. Estimated health benefits of Scotland's woodlands (e.g. from avoiding illness due to physical exercise) have been valued at up to £19 million a year. Ecosystem services, including flood mitigation and absorbing carbon emissions are equally important. In 2002 the capitalised value of carbon sequestration by Scottish woodland was estimated to be worth up to £2.6 billion.

Scotland's biodiversity, together with its geodiversity (the rocks, soils and landforms) provide essential functions – the 'ecosystem services' that are the basis of life. Largely unseen processes make the world habitable and productive, for example – soil formation, nutrient cycling, climate and disease regulation, carbon cycling, pollination, flood regulation and water purification.

3.1 Scotland's wildlife

Species

Scotland and its surrounding seas may support up to 89,000 native species: 50,000 in terrestrial and freshwater environments and 39,000 in the surrounding seas. Half are single-celled organisms; a quarter are plants and fungi; and a quarter are animals (predominantly arthropods and other invertebrates).

Endemic species

Scotland contains 31 endemic species (i.e. species that are unique to Scotland). These include Scottish beard-moss, *Bryoerythrophyllum caledonicum*; *Halecania rhypodiza*, a lichen known only from the Ben Lawers range and Caenlochan in Angus; mountain scurvygrass, *Cochlearia micacea*; Scottish primrose, *Primula scotica*; *Ceratophyllum fionnus*, a flea found only on Manx shearwaters (*Puffinus puffinus*) breeding on Rum; and Scottish crossbill, *Loxia scotica*. This list includes ten lichens, eleven vascular plants, five mosses, four insects and one bird for which Scotland is responsible for the future of the entire global population.

Stronghold species

Scotland holds the majority of the world population of several species. These include great skua, *Stercorarius skua*; gannet, *Morus bassanus*; Manx shearwater, *Puffinus puffinus*, grey seal, *Halichoerus grypus*; hay-scented buckler fern, *Dryopteris aemula*; and wintering populations of migratory pink-footed geese, *Anser brachyrhynchus*. Scotland is also the main stronghold of an important commercial marine species, the Norway lobster, *Nephrops norvegicus*.

At a smaller geographical scale, there are also species with wider distributions whose UK or European range or population is concentrated in Scotland. For example, amongst vascular plants, several species restricted to western Europe achieve unusual dominance in Scottish vegetation (e.g. bluebell, *Hyacinthoides non-scriptus*, western gorse, *Ulex gallii* and heather, *Calluna vulgaris*).

The British range or population of more than 30 annually breeding or wintering bird species is mainly in Scotland. They include seabirds (e.g. great skua), raptors (e.g. golden eagle, *Aquila chrysaetos*; rails and gamebirds (e.g. corncrake, *Crex crex* and capercaillie, *Tetrao urogallus*); waders and wildfowl (e.g. greenshank, *Tringa nebularia*) and songbirds (e.g. crested tit, *Lophophanes cristatus*).

Genetics

Genetic variation comprises the variation within an individual population and the variation between different populations of the same species. This variation influences the range of environmental conditions in which an organism can survive and its ability to evolve and adapt to changing environmental conditions.

Populations at the edge of their range may show local adaptation. For example, native populations of Scots pine show greater growth in height than continental European populations when grown under Scottish conditions. A similar effect has been demonstrated between different native populations from the east and west. This,

together with the adaptation of native wildlife, demonstrates the importance of using local genetic material when undertaking restoration or re-introduction.

Fragmented landscapes and isolation on islands provoke adaptation through natural selection. In the Shetland Islands, adaptation in populations of field mice, *Apodemus sylvaticus*, has resulted in increased body size and change in body colour. Similarly, Scotland is home to four forms of the wren, *Troglodytes troglodytes*, and one each of song thrush, *Turdus philomelos*, crested tit, starling, *Sturnus vulgaris* and linnet, *Carduelis cannabina* that are considered sufficiently distinctive to be regarded as sub-species.

Scotland's river systems represent one of the largest and most diverse of Atlantic salmon, *Salmo salar*, resources in Europe: nearly 400 salmon rivers support many hundreds of populations, each with its own genetic distinctiveness. Scotland is a stronghold for Arctic char, *Salvelinus alpinus*, with perhaps 200 separate loch populations. Following post-glacial isolation, they have become genetically distinct between, and even within, lochs. Within the species, many different morphs (or varieties) are seen. These morphs have different diets, and fit into the ecosystem at different points. They vary in colour and exhibit different size characteristics and bone structure, depending on their diet.

Improved molecular techniques can provide information on dispersal and population genetic structure which, together with knowledge of reproductive biology and demography, can contribute to the development of appropriate strategies for conservation.

Ecosystem approach

The 'ecosystem approach' has been defined as a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way, and which recognises that people with their cultural and varied social needs are an integral part of ecosystems. A 'healthy ecosystem' is one where all parts work well individually and together. A related term, 'ecosystem resilience', is the ability of an ecological system to absorb disturbances while retaining the same basic structure and ways of functioning, the capacity for self-organisation, and the capacity to adapt to stress and change. The ability to recover after natural disturbances or impacts from human activities is only possible for impacts below a certain level or threshold, referred to as 'environmental limits'. In cases where there is a risk of irreversibly exceeding these thresholds and damaging ecosystem resilience, a 'precautionary approach' should be taken to avoid this risk.

Ecosystem services are the benefits people obtain from ecosystems. The Millennium Ecosystem Assessment identified four categories:

- **Supporting services:** The functions that are necessary for the production of all other ecosystem services including soil formation, photosynthesis, primary production, nutrient cycling and water cycling.
- **Provisioning services:** The products obtained from ecosystems, including food, fibre, fuel, genetic resources, biochemicals, natural medicines, pharmaceuticals, ornamental resources and fresh water.

- **Regulating services:** The benefits obtained from the regulation of ecosystem processes, including air quality, climate, water supply and purification, disease and pest control, pollination, and protecting against erosion and natural hazards.
- **Cultural services:** The non-material benefits people obtain from ecosystems through spiritual enrichment, cognitive development, reflection, recreation and aesthetic experiences – i.e. taking account of landscape values.

The 2005 global Millennium Ecosystem Assessment showed that, at global scales, many key services are being degraded and lost. A [UK National Ecosystem Assessment](#), which commenced in 2009, will be the first comprehensive analysis of the UK natural environment in terms of the benefits it provides to society and continuing economic prosperity. In 2011 it will provide a synthesis of ecosystem services, explore future scenarios and examine possible policy responses. Scotland contributes to the UK assessment. Additionally, an ecosystem approach to land use planning is being piloted in north-east Scotland.

3.2 People and nature

In 1620 a wildcat, *Felis silvestris*, was spotted near Eccles in the Scottish Borders, making this sighting of a rare and iconic species the earliest biological record for Scotland held by the [National Biodiversity Network](#) (NBN) electronic database. Since then, biological recording of Scotland's species has increased exponentially. Millions of records have been accumulated by many local and national recording schemes and societies, individuals and public bodies such as SNH. By the end of 2007, nearly five million records could be accessed through the NBN. The NBN lists over 80 [data providers](#) across the UK, with interests ranging from spiders to seaweeds ([N1 – Information Provision Indicator](#)).

When surveyed in 2007 and 2009, around 80% of adults in Scotland were interested in biodiversity and concerned about biodiversity loss ([E1 – Attitudes to Biodiversity Indicator](#)).

Scotland's population of 5.12 million (2.31 million households) in mid-2006 is projected to rise to 5.37 million in 2031. Glasgow, with 0.58 million people is the largest city. Around four fifths of the Scottish population live in settlements. Those with more than 3,000 people (171 settlements) extend across 1,445 km² of Scotland, or 2% of the land area. Settlements are distinctive components of the built landscape. Transport, energy and communications infrastructure, as well as industry and housing are concentrated in built-up areas, and extend more widely throughout Scotland. However, at the scale of 1km², one third of Scotland in 2008 contained no built development at all ([N2 – Built Development Indicator](#)).

Greenspace in settlements is where most people gain ready access to the outdoors. In Scotland, approximately 25% of the area in settlements in 2009 was covered by greenspace management policies, ranging from 60 – 98m² per head of population in the major conurbations ([E2 – Extent and Composition of Greenspace Indicator](#)).

Land, coast and sea are managed for a variety of purposes, including the conservation of their biological, physical or visual character. Awareness of conservation value, whether that relates to protected areas, management agreements, ownership by

conservation bodies, agri-environment schemes, or policies in Local Plans, extended to 63% of Scotland's land area in 2008 ([N7 – Land Under Conservation Management Indicator](#)).

3.3 Action for biodiversity

The five objectives of Scotland's Biodiversity Strategy (relating to habitats and species; people; ecosystems and landscapes; integration and coordination; and knowledge) are implemented through a series of specific actions. Progress with actions delivered through the People & Communications and the Action Coordination Groups by the end of 2010 is summarised in **Table 3.1** (details are provided in **Annex 3a**). Among the 86 specified actions, 76% were on target. Implementation of 12% of actions needed to improve, and 12% actions were failing.

**Table: 3.1
Action Implementation 2010
People & Communications Group**

People & Communication	on target	room for improvement	not on target
Species and Habitats	5	1	1
People	31	4	4
Landscapes and Ecosystems	7	2	
Integration and Coordination	5		6
Knowledge	17	3	
Total	65	10	11
%	76	12	12

Ecosystem group actions are presented further on in the report.

Highlights

The bodies that make up the People & Communications Group have achieved a lot over the last two years:

- helped to deliver the Central Scotland Green Network;
- secured the recognition of green networks in the national planning framework;
- produced a policy statement and guidance on delivering the Curriculum for Excellence through outdoor learning;
- developed a wide range of materials about biodiversity for teachers and children;
- produced guidance to help school estate managers to manage biodiversity in school grounds;
- promoted greater awareness and interest in biodiversity through the International Year of Biodiversity 2010 and Scottish Biodiversity Week ;
- created a biodiversity communications toolkit;

- continued to make improvements to the availability of data and information about the environment and supported biological recording; and
- carried out a review of the strengths, weaknesses and successes of LBAP partnerships.

Exceptions

Lack of funding was the main reason for 11 of the actions failing:

- 8 actions relating to business and biodiversity could not be delivered because funding for a project officer was not renewed. Engagement with the business community is being re-established at a more strategic level through initiatives like the business and biodiversity breakfast hosted by the Minister for Environment and the Minister for Transport, Infrastructure & Climate Change in September 2010.
- 3 actions relating to encouraging volunteers to get involved with biodiversity had to be shelved but are now being addressed by other means.

4 Climate change



4 Climate change

The UK Climate Projections 2009 indicate that by the 2080s Scotland will be warmer by several degrees, especially in summer. It is likely there will be less snow, wetter winters and drier summers. The length of the growing season may increase by 20 – 80 days. Oceans are becoming acidified by increasing concentrations of carbon dioxide. Seasonal weather patterns appear to be becoming disrupted. Rising temperatures, drier summers, wetter winters, increased flooding, changes in the marine ecosystem and sea-level rise will affect biodiversity, life and livelihood in Scotland.

The UK Climate Change Act 2008 and the Climate Change (Scotland) Act 2009 have committed the respective Governments to achieving ambitious targets to reduce greenhouse gas emissions by at least 80% by 2050. Scotland's climate change legislation also set an interim target of at least 42% reduction by 2020. Action globally to reduce greenhouse gas emissions may moderate the severest threats, but it will be also necessary to find ways of adapting to the now inevitable effects of climate change. Under the legislation is a duty on public bodies in Scotland to help deliver the targets and contribute to adaptation.

Energy generation on land and at sea, settlement design, land and flood management, agricultural and forestry practices, grazing and cropping patterns, new crops and biofuels, forest expansion, economic pressures and food supply are among the changes anticipated or taking place. Changes to ecosystems are expected, arising from the direct effects of climate change on habitats and species, the indirect consequences of pests and diseases, and from associated land management adaptations. Geodiversity and biodiversity are inter-linked. The way in which ecological and land forming processes of the coasts, tidal areas, rivers and hill slopes respond to weather events and climate change depend on the physical and biological characteristics of the dynamic environment, and what has happened there previously.

4.1 People

Scotland is celebrated, by residents and visitors, for the abundance of opportunities it offers for enjoying the outdoors. In 2007, 92% of visitors identified scenery and 72% identified nature and wildlife as key to their Scottish holiday ([N6 - Tourism Indicator](#)).

A third of Scotland's £4.2 billion income from tourism is based on outdoor recreation. Opportunities from winter sports, including skiing and snow mountaineering, are likely to be reduced; activities in spring and autumn may be extended. Networks of open space in built-up areas, including woodlands, wildlife habitat, parks and other natural areas can moderate climate change impacts: tree planting for shade; ponds and wetlands to reduce flood risk; greenspace networks for active travel, recreation, landscape enhancement and biodiversity.

4.2 Coastal and marine

In the seas climate-linked changes are becoming evident in the distribution and composition of algal, plankton and fish communities. Increasing surface temperatures in the seas around Scotland are affecting the distribution of some common intertidal species, and the establishment and spread of invasive non-native species. Changing proportions in lesser-sandeel (*Ammodytes marinus*) and snake pipefish (*Entelurus aequoreus*) numbers have had a profound effect on some seabird colonies in years prior to 2009. Ocean acidification has potentially more far-reaching implications, especially for organisms with calcareous skeletons (e.g. molluscs and phytoplankton). Changes in hydrological patterns, including tidal currents and oceanic fronts, can affect the distribution of planktonic larval stages of many species. The distribution and abundance of fish species is apparent, with increased sightings of southern species in Scottish waters. Climate change will lead to increased erosion and redistribution of coastal landforms and habitats, with consequent impacts on livelihood, property and infrastructure. As sea levels rise, coastal habitats like saltmarsh and machair habitats would shift inland, or be lost where structures or topography prevent them from doing so.

4.3 Lowland and farmland

Climate influences natural processes of soil formation and erosion, ecosystem functions, the utilisation of land and water resources, and land management. Woodland cover is to be expanded from 17% to 25% by 2050. Soils store carbon, particularly peat soils which are especially widespread due to Scotland's cool, wet climate. Longer growing seasons are extending cropping opportunities. A warmer, wetter climate will make pests and diseases more prevalent and difficult to control. Drier summers may increase the frequency and severity of wildfires, leading to soil and habitat damage. Increased winter wetness, and particularly storm events, may lead to greater erosion and more frequent peat slides.

4.4 Fresh water and wetland

The maximum winter flow in the River Teith has increased by 40% over the last 40 years. Mean spring temperature in Loch Leven increased by 1.5°C in between 1970 and 2000. Life in rivers can be adversely affected, making them inhospitable to species like trout and salmon through rising temperature, low flows in summer and flash floods in winter. Wetlands provide many benefits including carbon storage, flood regulation, pollution removal, wildlife habitat, groundwater recharge, erosion control and maintenance of basal flows in watercourses that support salmon fisheries. Wetlands may dry out in summer, allowing woody species to colonise or cause peat to erode. Changes in precipitation and temperature will compound the effects of existing pressures, such as eutrophication and acidification in rivers, burns and lochs. Increased flushing from storm events may accelerate nutrient loss from wetlands, disturb settled sediment and bring in nutrients.

4.5 Woodland and upland

Implications of climate change for wildlife include: changing numbers and distribution of native species; loss of synchrony between predators and prey (such as invertebrate availability to feed nestlings in spring); changes in habitat quality, quantity and availability; pests and disease; and competition from invasive non-native species. Warming is already becoming evident in the earlier timing of spring events, such as bud burst, bird migration and egg laying. Northward shifts in ranges in plants and animals is also becoming apparent. Species with a predominantly southern distribution, such as the nuthatch (*Sitta europaea*) and comma butterfly (*Polytonia c-album*) are spreading into southern Scotland. Range shifts up hillsides can also be expected, perhaps displacing plants and animals that are adapted to sub-arctic conditions on the high tops. Reduced snow cover in winter affects the regulation of water supply and snow-bed vegetation in the uplands. The alpine saxifrage (*Saxifraga nivalis*) is currently confined to locations above 837m in Scotland and appears extremely vulnerable to any future temperature rise. Species that are unable to adapt to a rapidly changing environment may disappear from Scotland.

A review of phenological records in Scotland in 2006 illustrated changes in events such as the arrival and departure of migratory birds; egg laying among birds and amphibians; the appearance of aphids, moths and butterflies; the flowering of plants; and marine plankton blooms ([N4 – The Timing of Seasonal Events Indicator](#)).

Section B



Biodiversity trends – Scotland's ecosystems

Scotland's nature and Scotland's people depend on the maintenance of healthy, functioning ecosystems. The importance of this message has been brought home by the Millennium Ecosystem Assessment and is being developed further by The Economics of Ecosystems and Biodiversity project and the UK National Ecosystem Assessment. Scotland's species and habitats are part of dynamic systems that continue to adapt to reflect changes in their environment. Plans and strategies need to anticipate alterations to the distribution and abundance of species, and take account of natural interactions. Management needs to work with nature, fostering resilience at landscape and ecosystem scales so that ecosystems are able to maintain their basic functions and processes in the face of pressures, such as from climate change. It should do this by preserving and encouraging natural physical and chemical processes, reversing habitat fragmentation, developing ecological networks that allow species to move through the landscape, and allowing habitats and species to recover.

An 'ecosystem' is a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit. At a broad scale, Scotland can be characterised by five broad ecosystem settings:

1. Coastal and marine
2. Lowland and farmland
3. Fresh water and wetland
4. Woodland
5. Upland

Those broad categories provide a framework for biodiversity action in Scotland.

5 Coastal and marine ecosystems



5 Coastal and marine ecosystems

The coastline is intricate and variable. At a scale of 1:25,000, Scotland has a coastal length of 16,518km, with 2,043 mapped rocks and islands. Inshore waters, within 12 nautical miles of the coast, approach 89,000km² – somewhat larger than the land area. Scottish offshore waters extend out to 200 nautical miles.

To the west, the Atlantic coast is characterised by a highly indented fjordic and fjardic landscape with exposed islands, high sea cliffs and rocky skerries. To the east, the North Sea coast is predominantly low lying, often supporting sedimentary shores with only intermittent stretches of cliff. This part of the coastline is deeply penetrated by five large inlets or firths. The outer isles form three major archipelagos of Shetland, Orkney and the Western Isles, each with a range of distinctive coastal habitats.

5.1 Habitat extent

When assessed by SNH in 2004, 70% of Scotland's coast was classified as hard coast (rocks and cliffs), 29% was soft coast (unconsolidated gravels, sand and silts) and less than 1% was artificial (harbours and sea walls). Three quarters of the coast is broadly stable, 8% is accretional and 12% is erosional.

The length of cliff in Scotland approaches 2,500km. Due to their inaccessibility, the vegetation of ungrazed ledges and crevices on cliff slopes are among the least altered in Scotland. Cliffs support internationally important populations of breeding seabirds including Atlantic puffin, *Fratercula arctica*; common guillemot, *Uria aalge*; razorbill, *Alca torda*; black guillemot, *Cephus grille*; black-legged kittiwake, *Rissa tridactyla* and northern gannet, *Morus bassanus*. Some of the most spectacular colonies are on offshore islands, but many mainland cliffs also support large numbers of cliff-nesting seabirds. In the shelter of west coast sea lochs there may be little or no evidence of maritime influence above the tidal limit. On the tops of high, exposed cliffs in northern and western Scotland, maritime plants may extend some kilometres inland.

Although common to the Baltic and Atlantic coasts of Europe, shingle shores are rare on a world scale. The total length of shores dominated by shingle probably represents less than 5% of the coastal length of Scotland (700 ha in area). Much is active or raised, with little vegetated shingle. Gulls, terns, waders and common eiders, *Somateria mollissima*, breed on shingle, including the little tern, *Sternula albifrons*, which is largely dependent on shingle as a breeding habitat. Shingle may also be used for roosting, and grey seals haul out on some shingle banks.

Ridges of sand can accumulate as dunes above beaches where onshore winds blow loose beach sand inland. The ridges align themselves to changes in wind direction, can become stabilised by vegetation, and form a natural barrier to erosion. The area of coastal blown sand formations in Scotland has been estimated to be 50,000ha, 65% being dunes and 35% machair (coastal grassland in the north and west of Scotland, associated with calcareous sand, blown inland by very strong prevailing winds from beaches and mobile dunes). The geomorphology of dune systems and the plant communities they support are of conservation importance, together with an abundance of other wildlife, including birds, reptiles, amphibians and invertebrates. A history of cultivation and grazing on machair lands, which are restricted globally to the north-west

of Scotland and the north-west of Ireland, gives rise to a richness of plants and animals that give machair a special distinction. The densities of breeding waders – mainly redshank, dunlin, ringed plover and oystercatcher, *Haematopus ostralegus* – on the machairs of the Uists and Tiree are unsurpassed in Europe.

Lagoons – areas of shallow coastal water, wholly or partially separated from the sea by sand banks, shingle or rocks – have a very restricted distribution in Europe. Of the 139 lagoons in Scotland (3,893ha), half are in the Outer Hebrides. Most are smaller than 30 ha; the largest being Loch of Stenness in Orkney (860ha).

The extent of saltmarsh in Scotland, where coastal vegetation is regularly inundated by the sea, approaches 7,000ha. They often have a characteristic network of creeks and pans (shallow pools) with underground connections or 'pipes'. Around three-fifths of the extent is designated for its conservation importance, including two saltmarsh categories of European importance.

5.2 Habitat condition

Estuaries

Between 1999 and 2006 (when the Water Framework Directive classification was introduced), 809km² of estuaries listed by the Scottish Government under the Urban Waste Water Treatment Directive were classified according to six criteria: aesthetic condition (affected notably by sewage and petroleum residues, and refuse); fish migration (salmonids and eels, which may be obstructed by physical or pollution barriers); plants and animals present, and the effects of some substances on living organisms; the resident fish fauna being consistent with physical and hydrographical conditions; the accumulation of persistent substances in wildlife; and water chemistry. Each criterion was assessed on a four-point scale of: excellent; good; unsatisfactory; or seriously polluted. The overall assessment is conservative, being that of the lowest score.

The area assessed by SEPA⁴ as unsatisfactory or seriously polluted was reduced by 2.8km² between 1999 and 2006. By 2006, the area assessed as excellent had risen from 78% to 86%. In 2006, the area assessed as good was 11%; unsatisfactory was 4%; and seriously polluted was 0.03%.

The main pressures on Scottish estuarine water quality were from sewage discharge; manufacturing effluent; and agricultural run-off. The water quality of the Forth and Clyde estuaries was substantially dependant on river flows, influenced by weather, and a legacy of historically polluted sediments. Investment by Scottish Water and industrial dischargers were delivering cleaner estuarine waters. Further improvements were expected as the contaminant load from diffuse sources carried by inflowing rivers (e.g. nutrients from agricultural activities) is reduced by measures arising from implementation of the EU nitrates and water framework directives.

⁴ SEPA - Scotland's Water Environment: Review 2000-2006

Coastal water

Some 11,797km of coastal water was also classified according to aesthetic, biological, bacteriological and chemical condition. Between 1999 and 2006, the coastal length assessed by SEPA as unsatisfactory or seriously polluted was reduced by 232km. By 2006, the length assessed as excellent had risen from 92% to 94%. In 2006, the area assessed as good was 5%; unsatisfactory was 0.7%; and seriously polluted 0.09%.

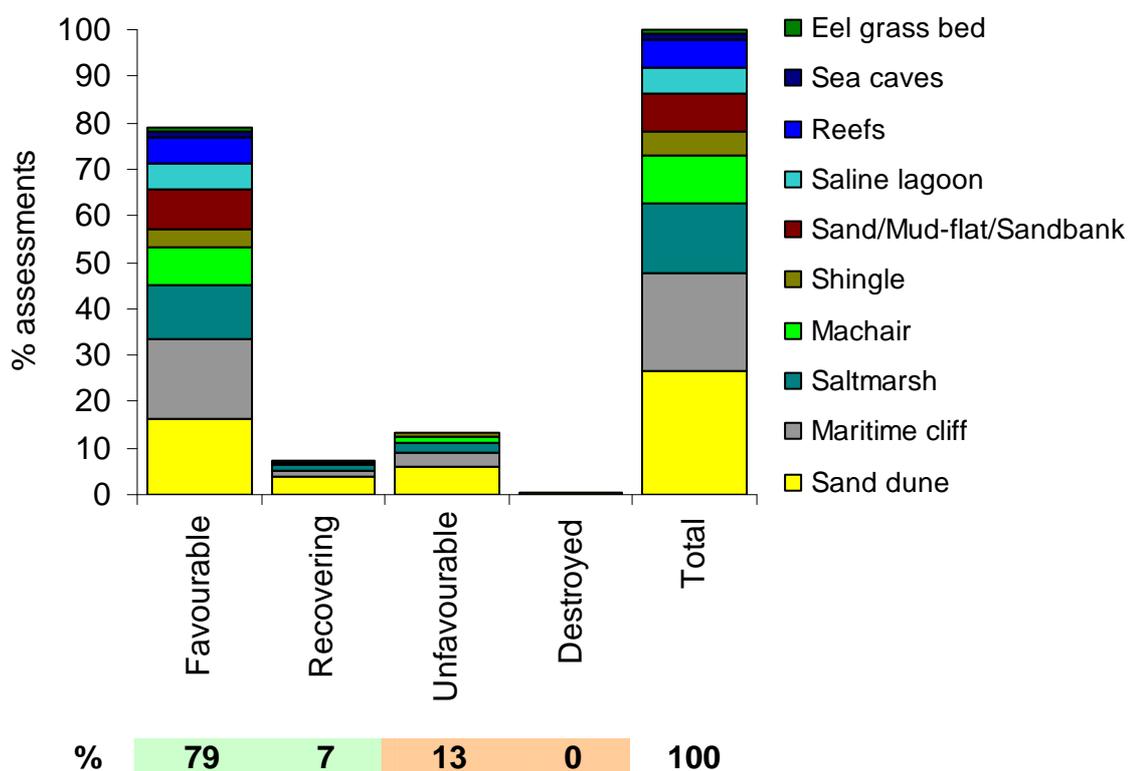
Investments by Scottish Water to improve the treatment of sewage discharges had a major beneficial effect on coastal water quality, however, bacterial pollution of some coastal waters (including some bathing waters) following heavy rainfall remained problematic.

Condition of notified features in protected areas

Based on 426 condition assessments of coastal and marine protected areas, **86%** were in favourable or recovering condition by October 2010 (**Figure 5.1**). The main reasons for poor condition were over-grazing, invasive species and land management on land; and water quality and fisheries management at sea.

Figure 5.1
Condition of notified features in coastal & marine protected areas in 2010

Source: SNH – 30 September 2010, including recovery under remedial action as in the [National Indicator](#)



5.3 Trends in the status of priority habitats and species

Habitats and species that are strongly in decline or especially vulnerable have been identified for targeted action and are referred to as biodiversity 'priority' habitats and species.

Priority habitats

Based on a review in 2007, the number of biodiversity priority habitats that occur in Scottish coastal and marine ecosystems was increased to 25. These are: coastal saltmarsh; coastal sand dunes; coastal vegetated shingle; machair; maritime cliff and slopes; maerl beds; mud habitats in deep water; *Sabellaria alveolata* reefs; saline lagoons; Serpulid reefs; sheltered muddy gravels; subtidal sands and gravels; blue mussel beds; carbonate mounds; cold-water coral reefs (previously *Lophelia pertusa*

reefs); deep-sea sponge communities; estuarine rocky habitats; file shell beds; fragile sponge & *anthozoan* communities on subtidal rocky habitats; horse mussel beds (previously *Modiolus modiolus* beds); intertidal boulder communities; intertidal mudflats; seagrass beds; seamount communities; tide-swept channels.

Six habitats which were assessed in the 2005 reporting round were re-assessed in 2008 (**Table 5.1**): coastal saltmarsh; machair; horse mussel beds; maerl beds; saline lagoons; and serpulid reefs. Assessments are based on systematic survey where possible, but sometimes rely on expert judgement.

For two habitats that previously showed no clear trend in 2005, both were found to be fluctuating in 2008 – one was probably declining and the other probably stable. Although the number assessed is small, those found to be stable increased from **50%** to **67%** but those found to be declining also increased from **17%** to **33%**.

Table 5.1
Trends in marine and coastal priority habitat status between 2005 and 2008

Source: Biodiversity Action Reporting System

Marine and coastal habitats Assessed in both years	2005		2008	
	count	%	count	%
Declining (slowing)				
Fluctuating - probably declining	1	17	2	33
No clear trend	2	33		
Fluctuating - probably stable			1	17
Stable	3	50	3	50
Fluctuating - probably increasing				
Increasing				

The overall appraisal of coastal and marine priority habitats is **divergent** (positive and negative elements).

A more complete account, although not comparable between years, is based on eight assessments in 2005 and 2008 (**Table 5.2**). Those stable in 2008 (**51%**) exceeded those declining (**38%**):

Table 5.2
Status of marine and coastal priority habitats in 2005 and in 2008

Source: Biodiversity Action Reporting System

Marine and coastal habitats Assessed in either year	2005		2008	
	count	%	count	%
Trend unknown	2	25		
Declining (continuing/accelerating)			1	13
Declining (slowing)				
Fluctuating - probably declining	1	13	2	25
No clear trend	2	25	1	13
Fluctuating - probably stable			1	13
Stable	3	38	3	38
Fluctuating - probably increasing				
Increasing				

Priority species

Some 136 biodiversity priority species (e.g. lower plants and algae; invertebrates, molluscs and fish; mammals, cetaceans and birds) occur in coastal and marine ecosystems in Scotland.

Twelve species which were assessed in 2005 were re-assessed in 2008 (**Table 5.3**): dune gentian, *Gentianella uliginosa*; slender scotch burnet moth, *Zygaena loti* subsp. *Scotica*; new forest burnet moth, *Zygaena viciae* subsp. *Argyllensis*; lunar yellow underwing moth, *Noctua orbona*; natterjack toad, *Epidalea calamita*; sand lizard, *Lacerta agilis*; otter, *Lutra lutra*; corncrake, *Crex crex*; roseate tern, *Sterna dougallii*; common skate, *Dipturus batis*; basking shark, *Cetorhinus maximus*; and bottle-nosed dolphin, *Tursiops truncatus*.

A third of those assessed in 2005 (**33%**) were declining, compared with a quarter (**24%**) in 2008; the proportion that were stable or increasing rose from **59%** to **66%**.

Table 5.3

Trends in marine and coastal priority species status between 2005 and 2008

Source: Biodiversity Action Reporting System

Marine and coastal species Assessed in both years	2005		2008	
	count	%	count	%
Not a true species				
Lost (pre BAP publication)				
Lost (since BAP publication)				
Declining (continuing/accelerating)	1	8	1	8
Declining (slowing)	3	25	1	8
Fluctuating - probably declining			1	8
No clear trend	1	8	1	8
Fluctuating - probably stable	2	17	1	8
Stable	2	17	5	42
Fluctuating - probably increasing	1	8	1	8
Increasing	2	17	1	8

The overall appraisal of coastal and marine priority species is **better**.

A more complete account, although not comparable between years, is based on 28 assessments in 2005 and 2008 (**Table 5.4**). Those stable in 2008 (**41%**) exceeded those declining (**12%**).

Table 5.4

Status of marine and coastal priority species in 2005 and in 2008

Source: Biodiversity Action Reporting System

Marine and coastal species Assessed in either year	2005		2008	
	Count	%	Count	%
Not a true species				
Trend unknown	15	54	13	46
Lost (pre BAP publication)				
Lost (since BAP publication)				
Declining (continuing/accelerating)	1	4	1	4
Declining (slowing)	3	11	1	4
Fluctuating - probably declining			1	4
No clear trend	2	7	1	4
Fluctuating - probably stable	2	7	2	7
Stable	2	7	7	25
Fluctuating - probably increasing	1	4	1	4
Increasing	2	7	1	4

5.4 Wildlife indicators

Environmental improvements have allowed wildlife to re-colonise parts of Scotland that had become degraded by industrialisation and dereliction. By 2005, fish diversity was being restored in the catchments and estuaries of the Forth and Clyde ([S15 – Estuarine Fish Indicator](#)).

Scotland holds internationally important numbers of breeding seabirds. The numbers of breeding seabirds and the numbers of chicks produced each year had been in decline since 1992, although appeared to stabilise between 2007 and 2009. Declines may be attributed to a number of factors including availability of food, weather conditions and predation ([S5 – Abundance of Breeding Seabirds Indicator](#)).

Plankton, both plant (phyto-) and animal (zoo-) are at the lowest trophic levels of the marine ecosystem and constitute a vital food-source for higher-level organisms. Since monitoring commenced in 1958 until 2006, species associated with cold northern waters have declined and species associated with warmer southern waters have increased ([N4 – The Timing of Seasonal Events Indicator](#)).

Conservation of commercial fish stocks is important both to the economy and to the biodiversity of the seas around Scotland. Of 11 key commercial fish stocks assessed annually, six were reported to be at full reproductive capacity, i.e. not in danger of collapse, in 2007 ([S16 – Commercially Exploited Fish Stocks Indicator](#)).

5.5 Action for biodiversity

The five objectives of Scotland's Biodiversity Strategy (habitats and species; people; ecosystems and landscapes; integration and coordination; and knowledge) are implemented through a series of specific actions. Progress with actions delivered through the Marine & Coastal Ecosystems Group by late 2010 is summarised in **Table 5.5** (details are provided in **Annex 3b**). Among the 50 specified actions, 90% were on target. Although implementation of 10% of actions needed to improve, none of the actions were failing.

Table 5.5
Action Implementation 2010
Marine & Coastal Ecosystems Group

Marine & Coastal	on target	room for improvement	not on target
Species and Habitats	15	2	
People	13	1	
Landscapes and Ecosystems	7		
Integration and Coordination	3	1	
Knowledge	7	1	
Total	45	5	
%	90	10	

Many of the actions proposed by the Group back in 2007 have been adopted by the Marine Scotland Act or will be delivered under the EU Marine Strategy Framework Directive. As a result, some actions will be delivered in slower time than originally envisaged but progress has been assessed as green because they now have much stronger legislative backing.

Highlights

The bodies that make up the Marine & Coastal Ecosystems Group have achieved a lot over the last three years including:

- developing a set of Marine Ecosystem Objectives integrating the requirements of EU directives within wider objective-setting for the sustainable use of Scottish seas , (this type of 'ecosystem approach' to managing the competing demands on the sea has been tried elsewhere but never on such a large scale);
- working towards an "ecologically coherent network" of marine protected areas around Scottish waters;

- identifying a short list of 'marine priority features' and producing simple one-page guides to their conservation; and
- taking a joined-up approach to marine and coastal biodiversity planning in North East Scotland involving close cooperation between neighbouring LBAPs.



6 Lowland and farmland ecosystems

6 Lowland and farmland ecosystems

6.1 Habitat extent

According to the [Countryside Survey report for Scotland](#), published in 2009, nearly a quarter of Scotland's land area (24%) is arable & horticulture, improved or neutral grassland. The three farmland habitats occur predominantly in the lowlands, where they occupy 58% of the land area. Farming on the most nutrient-rich lowland soils can be as intensive as anywhere in the UK.

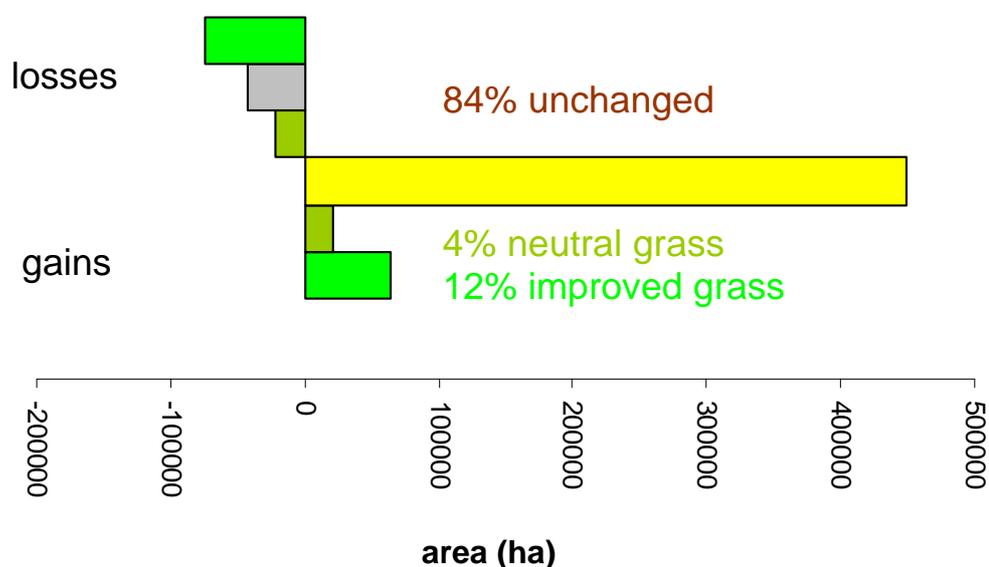
Arable & horticulture broad habitat

Land under the arable & horticulture broad habitat covered 6.6% of Scotland in 2007. The extent of arable and horticulture decreased by 13.6% between 1998 and 2007, from 618,000ha to 534,000ha. The decrease was due mainly to conversion of arable to improved grass (14%) and neutral grass (4%), and several other habitats (8%). Much of the 2007 extent had been arable in 1998 (84%), the rest having been converted from neutral grassland (4%) and improved grassland (12%), typical of the crop rotation cycle. The interchange of gains and losses between habitats is illustrated in **Figure 6.1**.

Figure 6.1
Change in extent of arable & horticulture broad habitat between 1998 and 2007

Source: Countryside Survey 2007

Note: negative changes (losses) are scaled differently from positive changes (gains)



The proportion of competitive species (tall perennials) increased. The proportion of fast colonisers associated with disturbance (ruderals) and plants associated with nutrient availability (fertility) decreased.

Improved grassland broad habitat

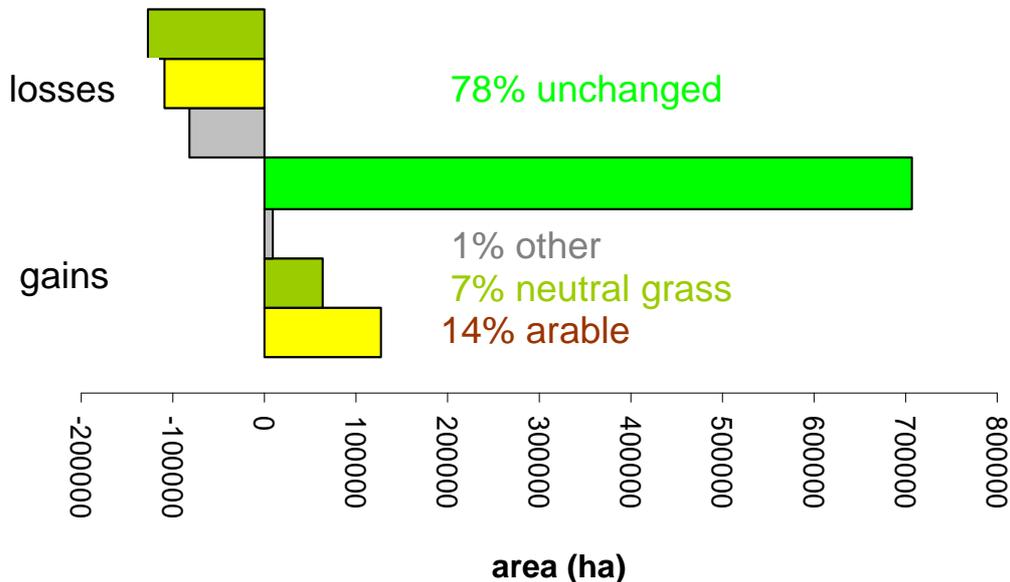
Land under improved grassland covered 11.2% of Scotland in 2007. The extent of improved grassland increased by 9.1% between 1998 and 2007, from 831,000ha to 907,000ha. Much of the 2007 extent had been improved grassland in 1998 (78%). The net increase within the cycle of crop rotation was due to the conversion of arable (14%) and neutral grass (7%), and several other habitats (1%) to improved grassland. The interchange of gains and losses between habitats is illustrated in **Figure 6.2**.

Figure 6.2

Change in extent of improved grassland broad habitat between 1998 and 2007

Source: Countryside Survey 2007

Note: negative changes (losses) are scaled differently from positive changes (gains)



Species richness decreased (total number of vascular plants present, at the level of genus) as did the abundance of plants that tolerate or cast shade.

Neutral grassland broad habitat

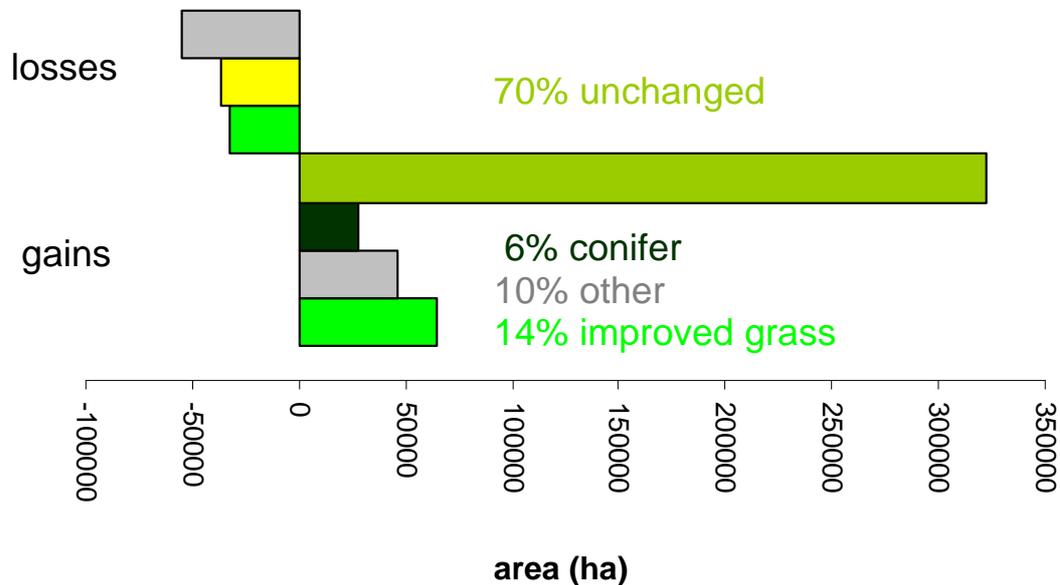
Neutral grassland covered 5.8% of Scotland in 2007. The extent of neutral grassland remained essentially unchanged between 1998 and 2007 (an apparent increase of 7.2%, from 430,000ha to 461,000ha was not statistically significant). Some 70% of the 2007 extent had been neutral grassland in 1998. Short-term interchanges associated with the crop rotation cycle are evident, as well as conversion to coniferous woodland (6%). The interchange of gains and losses between habitats is illustrated in **Figure 6.3**.

Figure 6.3

Change in extent of neutral grassland broad habitat between 1998 and 2007

Source: Countryside Survey 2007

Note: negative changes (losses) are scaled differently from positive changes (gains)



The proportion of competitive species (tall perennials) and plants associated with wetness increased. Species richness decreased (the total number of vascular plants present, at the level of genus), as did plants important in the diet of a range of declining lowland farmland birds, plants that provide food for butterfly caterpillars, and fast colonisers associated with disturbance (ruderals).

Boundary features

The overall length of hedge and shrubby boundary features (46,500km in 2007) decreased by 5.3% between 1998 and 2007: hedge (7.4%); lines of trees, shrubs and relict hedges (7.1%).

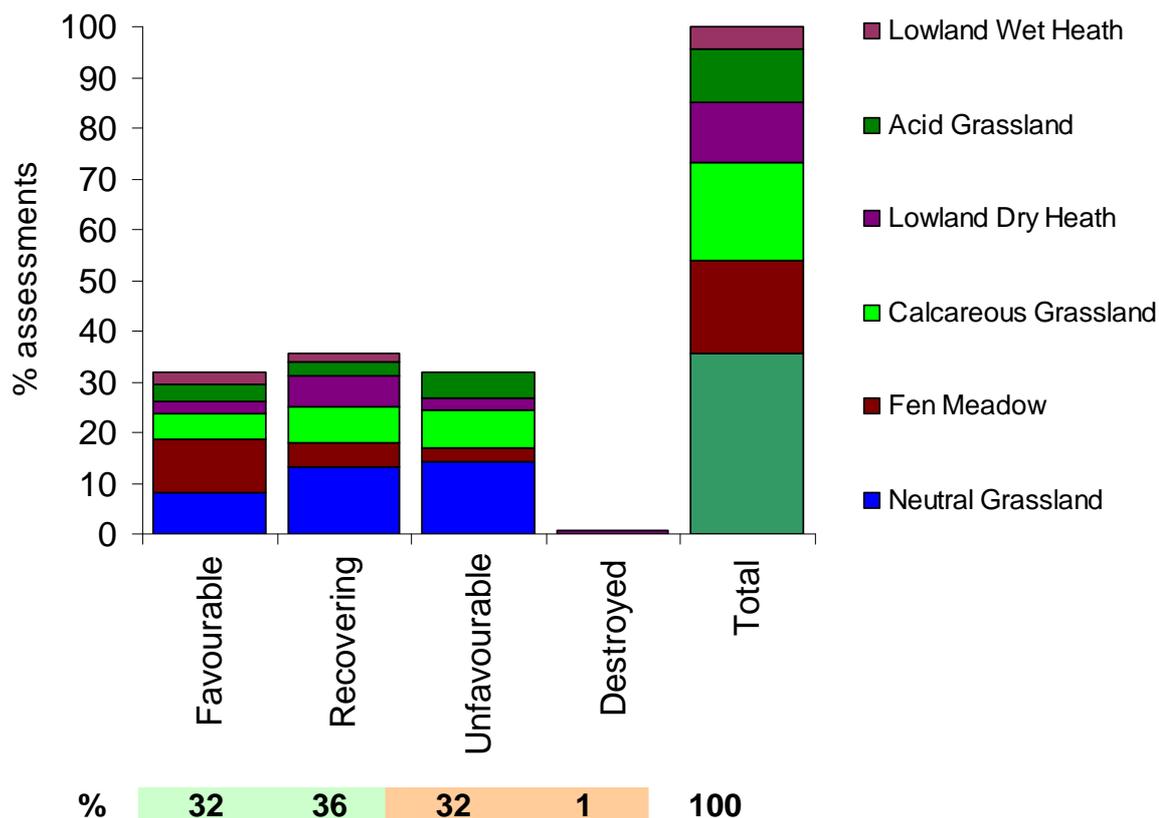
In hedges, a number of botanical indices decreased: species richness (the total number of vascular plants present, at the level of genus); plants important in the diet of a range of declining lowland farmland birds; plants that provide food for butterfly caterpillars; grassiness (grass:forb ratio, i.e. the log ratio of grass to forbs, where forbs typically include meadow herbs such as buttercup & clover); and plants that tolerate or cast shade.

6.2 Habitat condition

Based on 160 condition assessments on protected areas, **68%** were in favourable or recovering condition by October 2010 (**Figure 6.4**). The main reasons for poor condition were over-grazing, invasive species and land management.

Figure 6.4
Condition of notified features in lowland & farmland protected areas in 2010

Source: SNH – 30 September 2010, including recovery under remedial action as in the *National Indicator*



6.3 Trends in the status of priority habitats and species

Habitats and species that are strongly in decline or especially vulnerable have been identified for targeted action and are referred to as biodiversity 'priority' habitats and species.

Priority habitats

Based on a review in 2007, the number of biodiversity priority habitats in lowland and farmland ecosystems was increased to 10. They are: lowland dry acid grassland; lowland heathland; lowland meadows; purple moor grass and rush pastures; upland hay meadows; arable field margins; hedgerows; lowland calcareous grassland; open mosaic habitats on previously developed land; traditional orchards.

Eight habitats which were assessed in the 2005 reporting round were re-assessed in 2008 (**Table 6.1**): arable field margins; hedgerows; lowland calcareous grassland;

lowland dry acid grassland; lowland heathland; lowland meadows; purple moor grass and rush pastures; upland hay meadows. Assessments are based on systematic survey where possible, but sometimes rely on expert judgement.

Little or no change is evident between the two assessments.

Table 6.1
Trends in lowland & farmland priority habitat status between 2005 and 2008

Source: Biodiversity Action Reporting System

Lowland & farmland habitats Assessed in both years	2005		2008	
	count	%	count	%
Declining (slowing)	5	63	5	63
Fluctuating - probably declining				
No clear trend				
Fluctuating - probably stable			1	13
Stable	2	25	1	13
Fluctuating - probably increasing				
Increasing	1	13	1	13

The overall appraisal of lowland and farmland priority habitats is **unchanged**.

Priority species

Some 108 biodiversity priority species (e.g. butterflies, moths and bees; fungi and lichens; flowering plants; reptiles, mammals and birds) occur in lowland and farmland ecosystems in Scotland.

Seven species which were assessed in 2005 were re-assessed in 2008 (**Table 6.2**): a lichen, *Cladonia peziziformis*; marsh fritillary butterfly, *Euphydryas aurinia*; narrow-bordered bee hawk moth, *Hemaris tityus*; brown hare, *Lepus europaeus*; grey partridge, *Perdix perdix*; red-backed shrike, *Lanius collurio*; and skylark, *Alauda arvensis*. The number of species declining rose by one species to **43%** in 2008; the number increasing rose by two species, to **29%** in 2008.

Table 6.2**Trends in lowland & farmland priority species status between 2005 and 2008***Source: Biodiversity Action Reporting System*

Lowland & farmland species Assessed in both years	2005		2008	
	count	%	count	%
Not a true species				
Lost (pre BAP publication)	1	14	1	14
Lost (since BAP publication)				
Declining (continuing/accelerating)				
Declining (slowing)	2	29	2	29
Fluctuating - probably declining			1	14
No clear trend	1	14		
Fluctuating - probably stable				
Stable	3	43	1	14
Fluctuating - probably increasing				
Increasing			2	29

The overall appraisal of lowland and farmland priority species is **divergent** (although positives outweighed the negative elements).

A more complete account, although not comparable between years, is based on 16 assessments in 2005 and in 2008 (**Table 6.3**). The proportion of species that were stable or increasing in 2008 (**32%**) was the same as those declining (**32%**).

Table 6.3**Status of lowland & farmland priority species in 2005 and in 2008***Source: Biodiversity Action Reporting System*

Lowland & farmland species Assessed in either year	2005		2008	
	count	%	count	%
Not a true species				
Trend unknown	6	38	5	31
Lost (pre BAP publication)	1	6	1	6
Lost (since BAP publication)				
Declining (continuing/accelerating)	1	6	1	6
Declining (slowing)	2	13	2	13
Fluctuating - probably declining			2	13
No clear trend	1	6		
Fluctuating - probably stable			2	13
Stable	5	31	1	6
Fluctuating - probably increasing				
Increasing			2	13

6.4 Wildlife indicators

Butterfly trends have been stable between 1979 and 2007. Prior to the mid-1980s, butterfly species that are restricted to specific and often isolated habitats decreased to 48% of their 1979 abundance, but have been stable since ([S8 – Butterflies Indicator](#)).

Moth abundance among 185 of the commoner species fluctuated between 1975 and 2004 ([S9 – Moths Indicator](#)). Emerging evidence from the [Rothamstead Insect Survey](#) indicates long-term declines among common moth species in Britain.

Between 1994 and 2008, 50 of 65 terrestrial breeding bird species in Scotland increased in abundance, by 31% overall. Farmland birds increased by 26% ([S3 – Abundance of Terrestrial Breeding Birds Indicator](#)).

6.5 Action for biodiversity

The five objectives of Scotland's Biodiversity Strategy (habitats and species; people; ecosystems and landscapes; integration and coordination; and knowledge) are implemented through a series of specific actions. Progress with actions delivered through the Lowland & Farmland Ecosystems Group by late 2010 is summarised in **Table 6.4** (details are provided in **Annex 3c**). Among the 16 specified actions, half were on target. Although implementation of the other half actions needed to improve, none of the actions were failing.

Table 6.4
Action Implementation 2010
Farmland & Lowland Ecosystems Group

Farmland & Lowland	on target	room for improvement	not on target
Species and Habitats	3	4	
People	2	2	
Landscapes and Ecosystems	1	2	
Integration and Coordination	2		
Knowledge			
Total	8	8	
%	50	50	

Highlights

The bodies that make up the Farmland & Lowland Ecosystems Group have achieved a lot over the last two years:

- developing conservation projects for two new priority habitats - traditional orchards and open mosaic habitats on previously developed land in towns and cities.

- developing a tool for modelling habitat networks and assessing habitat fragmentation;
- generating habitat network maps for parts of lowland Scotland, (Edinburgh and Lothian and Glasgow /Clyde Valley have been foremost in this); and
- developing guidance on the potential impacts on biodiversity from biofuel and biomass production.

Exceptions

Of the 8 actions that are behind schedule:

- 4 relating to improving the management of urban grasslands are being taken forward by other means after a cut in the lead partner's core funding; and
- 4 are progressing more slowly than anticipated due to external dependencies.

A photograph of a pond with water lilies. The water is dark blue, and the lily pads are large and green. There are several white water lilies with yellow centers. A brown bud is visible in the upper left. The text "7 Freshwater and wetland ecosystems" is overlaid in white on the left side of the image.

7 Freshwater and wetland ecosystems

7 Freshwater and wetland ecosystems⁵

7.1 Habitat extent

On 1:50,000 scale maps, the river length is 100,000km and standing water bodies (lochs) number 27,000. Scotland's fresh waters are strong visual components in the landscape. Covering about two per cent of Scotland's land area, they represent some 70% of the total surface area of fresh water (90% of the volume) in the UK. The interplay of weather, altitude, geology, soil type, landform and land use has resulted in a diversity of fresh waters and associated assemblages of habitats and species. Of international importance are: large concentration of deep, unpolluted lochs formed as a result of glacial activity, often with wildlife communities characteristic of nutrient-poor waters; extensive systems of blanket bog pools, which are globally rare, reflecting distinctive climatic, topographic and hydrological conditions; unusual assemblages of freshwater plants at the interface of North American and European species distributions; several internationally rare invertebrate species, including glacial relicts with boreo-alpine distributions; existence, within the northern temperate zone, of relatively unmodified and unpolluted river systems exhibiting natural physical, chemical and biological changes along their length due to altitudinal and geological transitions.

Favourable conditions for hydro-power generation in Scotland – a wet climate and mountainous terrain – have been exploited over the past century. A high voltage grid, constructed in the early 1930s, made possible large-scale transmission of hydro-power. Between 1945 and 1965, some 28 conventional hydro-schemes were constructed, incorporating 66 dams. A characteristic of Scottish schemes is their extensive networks of reservoirs, with aqueducts and tunnels for diverting water from neighbouring catchments into the main storage reservoirs, augmenting power production and accommodating seasonal variations in rainfall. By the mid-1960s, the economic potential of catchments had been largely developed, although some pumped-storage schemes were constructed thereafter to store and release energy surpluses from large thermal and nuclear power stations. The changed economics of renewable energy has given rise to the further development of hydro-power in Scotland. In December 2009, hydro power contributed 42% of Scotland's renewable energy, second only to wind power. It has been estimated that this could be increased by 50 per cent, based on an un-tapped potential for more than 1,000 new schemes across the country. Scotland's biggest hydro electric scheme to be built in more than 50 years, at Glendoe above Loch Ness, was opened in 2009.

According to the [Countryside Survey](#), the number of ponds increased by 6% between 1998 and 2007. However, they represent only a small part of the overall extent of standing open waters, which remained unchanged. The extent (width) of rivers and streams is weather dependent, so little ecological significance can be attributed to the 3% increase between 1998 and 2007.

⁵ With thanks to the Scottish Environment Protection Agency (SEPA) for contributions to this section.

7.2 Habitat condition

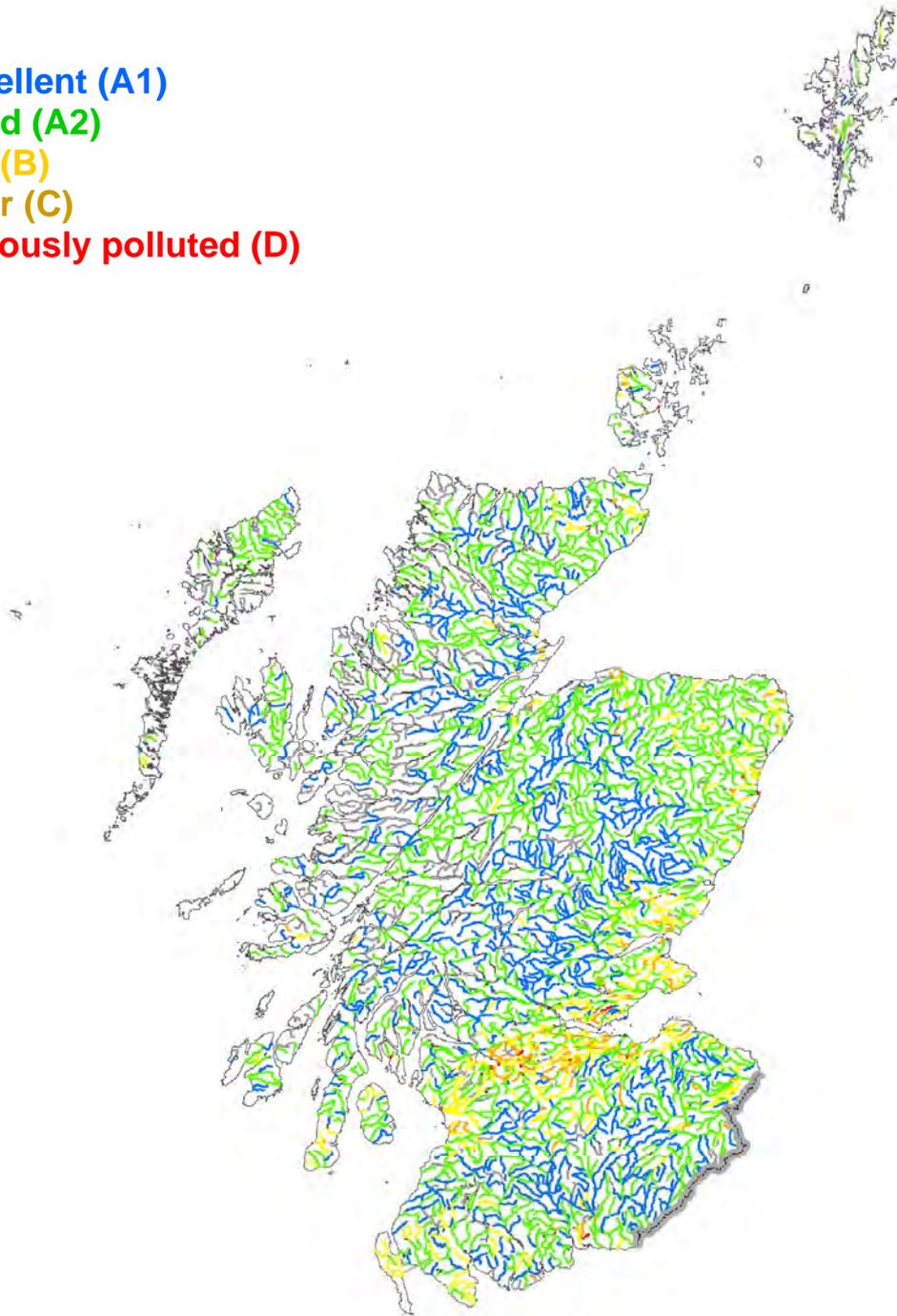
According to the Countryside Survey, plant species richness of streamsides decreased by 12% in Scotland between 1998 and 2007. Since 1990 there has been a successional change, with vegetation becoming taller and with more competitive species. Plant species richness within streams increased in Scotland between 1998 and 2007 and there was a high turnover of species. The physical characteristics of streams improved in Scotland between 1998 and 2007.

Between 1999 and 2006, water quality, based on chemical, biological and aesthetic conditions, was assessed annually by SEPA ([N5 – River Quality Indicator](#); **Figure 7.1**). Of an estimated 56,200 km of river in Scotland, around half (25,429km) was assessed in 2006. The time series for poorer quality rivers is consistent from 1999 but expanded monitoring of good quality rivers from 2005 onwards means that comparisons with previous years would be misleading. The main pressures on river water quality were from: agricultural run-off; sewage collection and disposal; urban development; forestry; mining and quarrying. In many places, a combination of point source pollution (such as sewage disposal) and diffuse pollution (such as farm run-off), affected river quality. Notable improvements in river water quality have been achieved through the upgrading of wastewater infrastructure and industrial premises, the closure of old sewage treatment works and diversion of effluent to newer or larger works elsewhere. Improvement in some of Scotland's largest river catchments, including the rivers Clyde, Kelvin, Almond and Tay are noteworthy.

Figure 7.1 The geographical character of river water quality in 2006

Source: SEPA

- excellent (A1)**
- good (A2)**
- fair (B)**
- poor (C)**
- seriously polluted (D)**



The development of [river basin management planning](#) in Scotland represents a major advance in the way in which the water environment is safeguarded and improved. The 2008 assessment of ecological status (**Table 7.1**) was based on five categories (groundwater, lake, river, transitional and coastal), divided into 3,585 segments (waterbodies) for assessment. The WFD classification takes account of alterations to the physical habitat (morphology) and water quantity (hydrology) of the relevant water categories, as well as including indicators of water quality. As such, comparison with pre-Water Framework Directive (WFD) results is not possible at the overall status level.

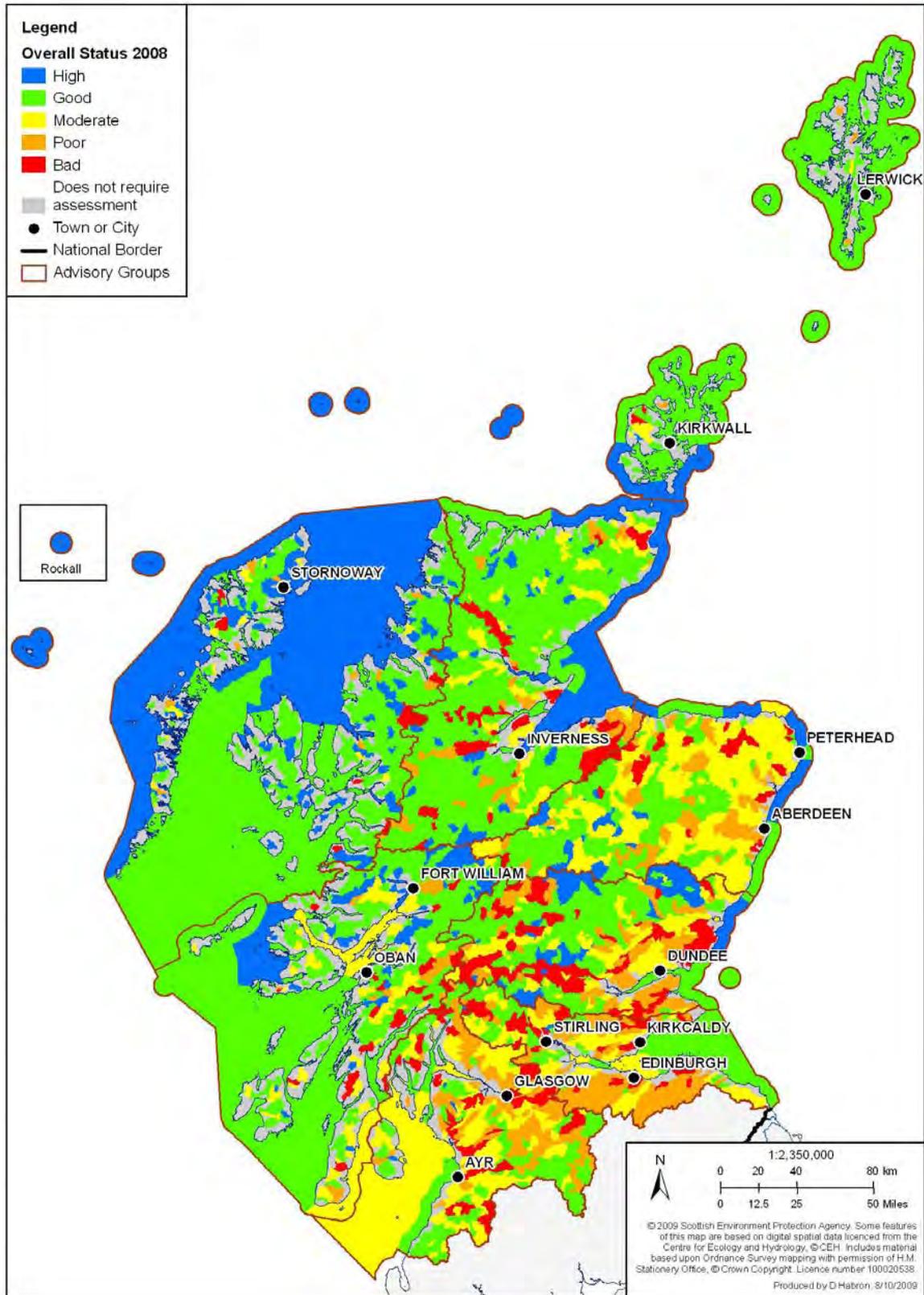
Table 7.1
The ecological status of waterbodies in 2008

Source: SEPA

Category	#	area (km ²)	length (km)	% by length / area				
				high	good	moderate	poor	bad
groundwater	352	78,390			84		16	
lake	334	992		15	50	14	13	8
river	2,392		25,118	6	44	26	14	10
transitional	50	992		22	34	43	1	
coastal	457	47,709		33	59	8		
total	3,585	128,083	25,118					

The causes of downgrading were split fairly evenly between pressures on water quality (mainly due to input of nutrients), pressures on physical habitats and pressures on hydrology. Nutrient pressures arise from both diffuse and point sources, with hydrology being affected by impoundments and abstractions, and morphology by alterations from urban development and agricultural usage.

Figure 7.2
The geographical character of surface and coastal water ecological status in 2008
 Source: SEPA



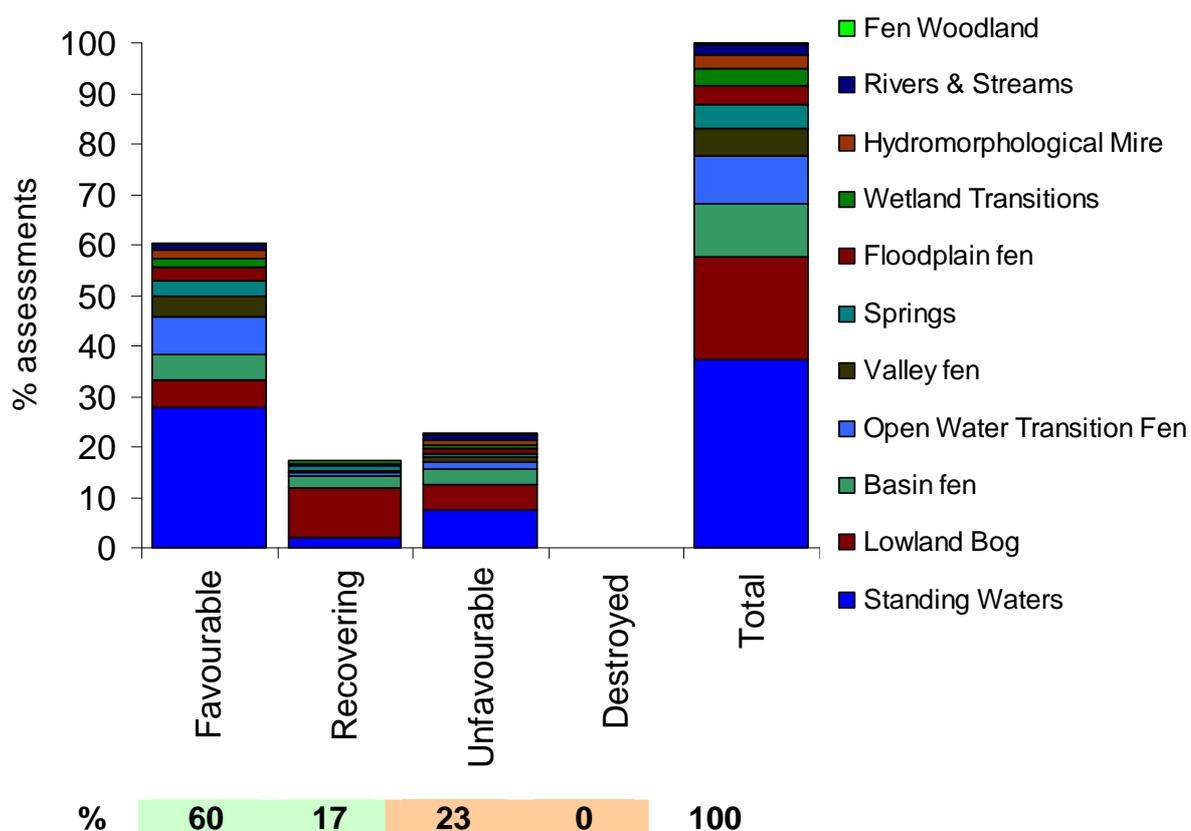
Condition of notified features in protected areas

Based on 553 condition assessments on protected areas, **77%** were in favourable or recovering condition by October 2010 (**Figure 7.3**). The main reasons for poor condition were invasive species, lack of remedial management and, occasionally, water quality.

Figure 7.3

Condition of notified features in freshwater & wetland protected areas in 2010

Source: SNH – 30 September 2010, including recovery under remedial action as in the *National Indicator*



7.3 Trends in the status of priority habitats and species

Habitats and species that are strongly in decline or especially vulnerable have been identified for targeted action and are referred to as biodiversity ‘priority’ habitats and species.

Priority habitats

Based on a review in 2007, the number of biodiversity priority habitats in fresh water and wetland ecosystems was increased to nine. These are: eutrophic standing waters; coastal and floodplain grazing marsh; lowland raised bog; mesotrophic lakes; reedbeds; lowland fens; oligotrophic and dystrophic lakes; ponds; rivers.

Five habitats which were assessed in 2005 were re-assessed in 2008 (**Table 7.2**): eutrophic standing waters; coastal and floodplain grazing marsh; lowland fens; lowland raised bog; mesotrophic lakes. Assessments are based on systematic survey where possible, but sometimes rely on expert judgement.

Given small numbers, little or no change is evident between the two assessments.

Table 7.2
Trends in freshwater & wetland priority habitat status between 2005 and 2008

Source: Biodiversity Action Reporting System

Fresh water & wetland habitats Assessed in both years	2005		2008	
	count	%	count	%
Declining (slowing)	2	40	2	40
Fluctuating - probably declining				
No clear trend	1	20		
Fluctuating - probably stable				
Stable	1	20	3	60
Fluctuating - probably increasing				
Increasing	1	20		

The overall appraisal of freshwater and wetland priority habitats is **unchanged**.

Priority species

Some 75 biodiversity priority species (e.g. lower plants and flowering plants; invertebrates and molluscs; amphibians, fish and birds) occur in freshwater and wetland ecosystems in Scotland.

Nineteen species which were assessed in 2005 were re-assessed in 2008 (**Table 7.3**): marsh clubmoss, *Lycopodiella inundata*; slender naiad, *Najas flexilis*; slender stonewort, *Nitella gracilis*; ear-lobed dog-lichen, *Peltigera lepidophora*; pillwort, *Pilularia globulifera*; Shetland pondweed, *Potamogeton rutilus*; Irish Lady’s tresses, *Spiranthes romanzoffiana*; minutest diving beetle, *Bidessus minutissimus*; oxbow diving beetle, *Hydroporus rufifrons*; northern February red (stonefly), *Brachyptera putata*; zircon reed beetle, *Donacia aquatica*; water vole, *Arvicola terrestris*; great crested newt, *Triturus*

cristatus; white-clawed freshwater crayfish, *Austropotamobius pallipes*; twaite shad, *Alosa fallax*; vendace, *Coregonus albula*; reed bunting, *Emberiza schoeniclus*; common scoter, *Melanitta nigra*; red-necked phalarope, *Phalaropus lobatus*.

Little change is evident between the two assessments. The overall proportion declining remained unchanged at **42%** in 2005 and 2008; the proportion stable or increasing was **47%** in 2005 and **48%** in 2008.

Table 7.3
Trends in freshwater & wetland priority species status between 2005 and 2008

Source: Biodiversity Action Reporting System

Freshwater & wetland species Assessed in both years	2005		2008	
	count	%	count	%
Not a true species				
Lost (pre BAP publication)				
Lost (since BAP publication)				
Declining (continuing/accelerating)	4	21	4	21
Declining (slowing)	3	16	3	16
Fluctuating - probably declining	1	5	1	5
No clear trend	2	11	2	11
Fluctuating - probably stable	1	5	2	11
Stable	5	26	4	21
Fluctuating - probably increasing			1	5
Increasing	3	16	2	11

The overall appraisal of freshwater and wetland priority species is **unchanged**.

A more complete account, although not comparable between years, is based on 32 assessments in 2005 and in 2008 (**Table 7.4**). The proportion of species that were stable or increasing in 2008 (**41%**) exceeded the number declining (**25%**):

Table 7.4**Status of freshwater & wetland priority species in 2005 and in 2008***Source: Biodiversity Action Reporting System*

Fresh water & wetland species Assessed in either year	2005		2008	
	count	%	count	%
Not a true species				
Trend unknown	10	31	4	13
Lost (pre BAP publication)				
Lost (since BAP publication)				
Declining (continuing/accelerating)	4	13	4	13
Declining (slowing)	3	9	3	9
Fluctuating - probably declining	1	3	1	3
No clear trend	4	13	7	22
Fluctuating - probably stable	1	3	4	13
Stable	6	19	6	19
Fluctuating - probably increasing			1	3
Increasing	3	9	2	6

7.4 Wildlife indicators

Environmental improvements have reduced air, land and water pollution, allowing wildlife to re-colonise parts of Scotland that had become degraded by industrialisation and dereliction. Fish diversity is being restored in the catchments and estuaries of the Forth and Clyde. Otter occupancy rose from 57% of Scotland in 1979 to 92% in 2004 ([S12 – Otter Indicator](#)).

Similarly, the indicator of macroinvertebrate diversity increased between 1981 and 2008 ([S13 – Freshwater Macroinvertebrate Diversity Indicator](#)), but earlier data reflect targeted sampling of polluted sites, skewing the sample towards stretches of river with relatively low invertebrate diversity. The indicator is being looked at to consider how an update might provide a more accurate representation of the condition of invertebrate assemblages in general.

Wintering waterbird numbers (38 species) peaked at 120% in 1996/97 and remained relatively stable prior to declining in recent winters up to 2006/07 ([S4 – Abundance of Wintering Waterbirds Indicator](#)). The recent decline may suggest that waterbirds are becoming less reliant on the security of overwintering in Scotland, and therefore less abundant, as mild winters become commoner on continental Europe. Nevertheless, in 2006/07 the indicator was 107% of the 1975/76 baseline value. Goose numbers (6 species) increased to 311% in the winter of 2003/04, before falling back to 294% in 2006/07; wildfowl numbers (15 species) have remained relatively stable at 99% in 2006/07; wader numbers (13 species) peaked at 109% in 1996/97 but then declined to 78% in 2006/07.

7.5 Action for biodiversity

The five objectives of Scotland's Biodiversity Strategy (habitats and species; people; ecosystems and landscapes; integration and coordination; and knowledge) are implemented through a series of specific actions. Progress with actions delivered through the Freshwater & wetland Ecosystems Group by late 2010 is summarised in **Table 7.5** (details are provided in **Annex 3d**). Of the 9 specified actions, 8 were on target, 1 was behind schedule and none were failing.

Table 7.5
Action Implementation 2010
Freshwater & Wetland Ecosystems Group

Freshwater & wetland	on target	room for improvement	not on target
Species and Habitats	5	1	
People			
Landscapes and Ecosystems	1		
Integration and Coordination			
Knowledge	2		
Total	8	1	
%	89	11	

Highlights

The bodies that make up the Freshwater & Wetland Group have achieved a lot over the last two years, including:

- developing a Scottish Wetlands Typology and starting on a Wetlands Inventory;
- demonstrating the potential to deliver multiple benefits through integrating catchment management with wider ecological networks in the Clyde Valley area;
- taking action over and above the statutory requirements to improve the environmental quality of 31 lochs across 7 LBAP areas through partnership projects;
- developing 14 biosecurity plans to tackle the threat of non-native invasive species in the aquatic environment; and
- producing guidance for farmers on best management practice to reduce diffuse pollution.

8 Woodland ecosystems



8 Woodland ecosystems

8.1 Habitat extent

The [Countryside Survey](#) estimation of land cover differs in method and definition from forestry land use. Results are not directly comparable with forestry statistics. The two broad habitats reported on in 2007 are broadleaved (3.1% of Scotland) and conifer woodland (11.9%). Broadleaved woodland expanded but, surprisingly perhaps, conifer woodland contracted. The reason for that is partly accounted for by replacement with broadleaved species, but also by a temporary opening-up of dense forest in the felling cycle.

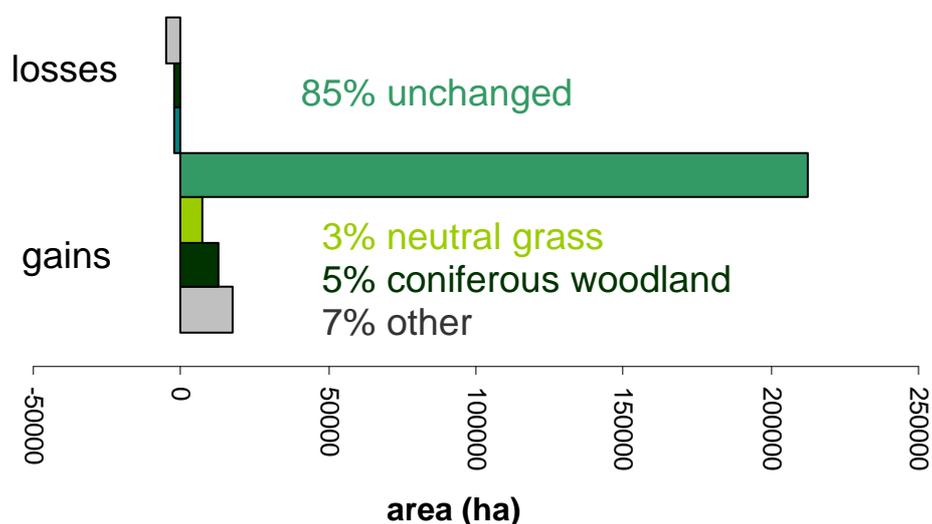
Broadleaved, mixed & yew woodland broad habitat

Broadleaved, mixed and yew woodland covered 3.1% of Scotland in 2007. It increased by 9.6% between 1998 and 2007, from 229,000ha to 251,000ha. Much of it had been woodland in 1998 (85%), the rest being newer planting on neutral grassland (3%), restructured coniferous woodland (5%) and planting on several other habitats (7%). The interchange of gains and losses between habitats is illustrated in **Figure 8.1**.

Figure 8.1
Change in the extent of broadleaved, mixed & yew woodland broad habitat between 1998 and 2007

Source: Countryside Survey 2007

Note: negative changes (losses) are scaled differently from positive changes (gains)



The proportion of competitive species (tall perennials) increased. Conversely, species richness decreased (the total number of vascular plants present, at the level of genus); as did plants important in the diet of a range of declining lowland farmland birds; and the proportion of fast colonisers associated with disturbance (ruderals).

Coniferous woodland broad habitat

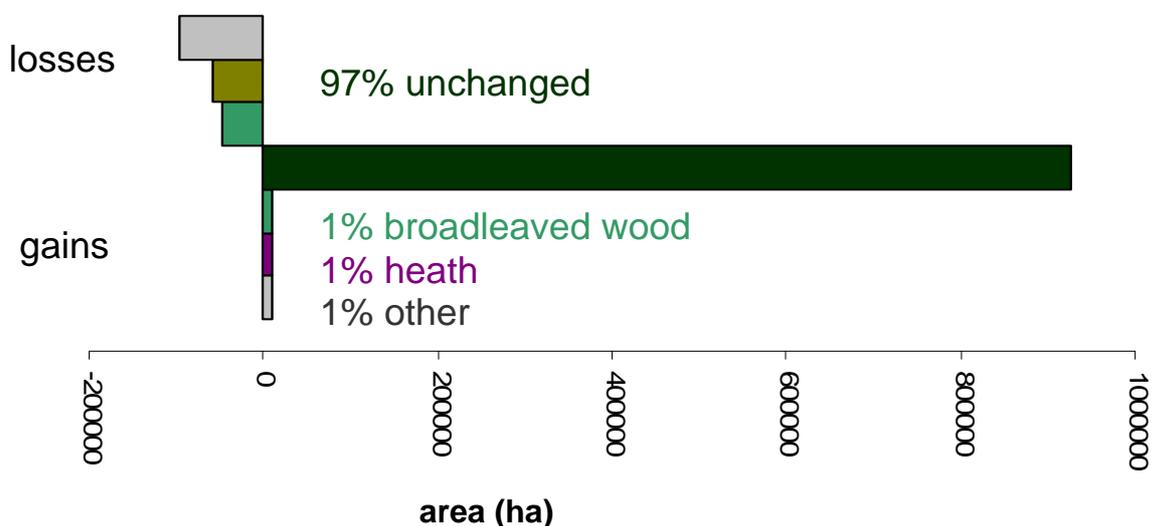
Coniferous woodland covered 11.0% of Scotland in 2007. It decreased by 7.1% in extent between 1998 and 2007, from 1,029,000ha to 956,000ha. The decrease was due to an opening-up of plantation forest during the felling cycle, temporarily exposing neutral grassland and other habitats, and a restructuring of former conifer plantation to broadleaved woodland. Much of the standing coniferous woodland had matured since 1998 (97%), the rest being planted in former broadleaved woodland (1%), on heath (1%) and on several other habitats (1%). The interchange of gains and losses between habitats is illustrated in **Figure 8.2**.

Figure 8.2

Change in the extent of coniferous woodland broad habitat between 1998 and 2007

Source: Countryside Survey 2007

Note: negative changes (losses) are scaled differently from positive changes (gains)



Species richness decreased (the total number of vascular plants present, at the level of genus); as did plants important in the diet of a range of declining lowland farmland birds; and plants that provide food for butterfly caterpillars.

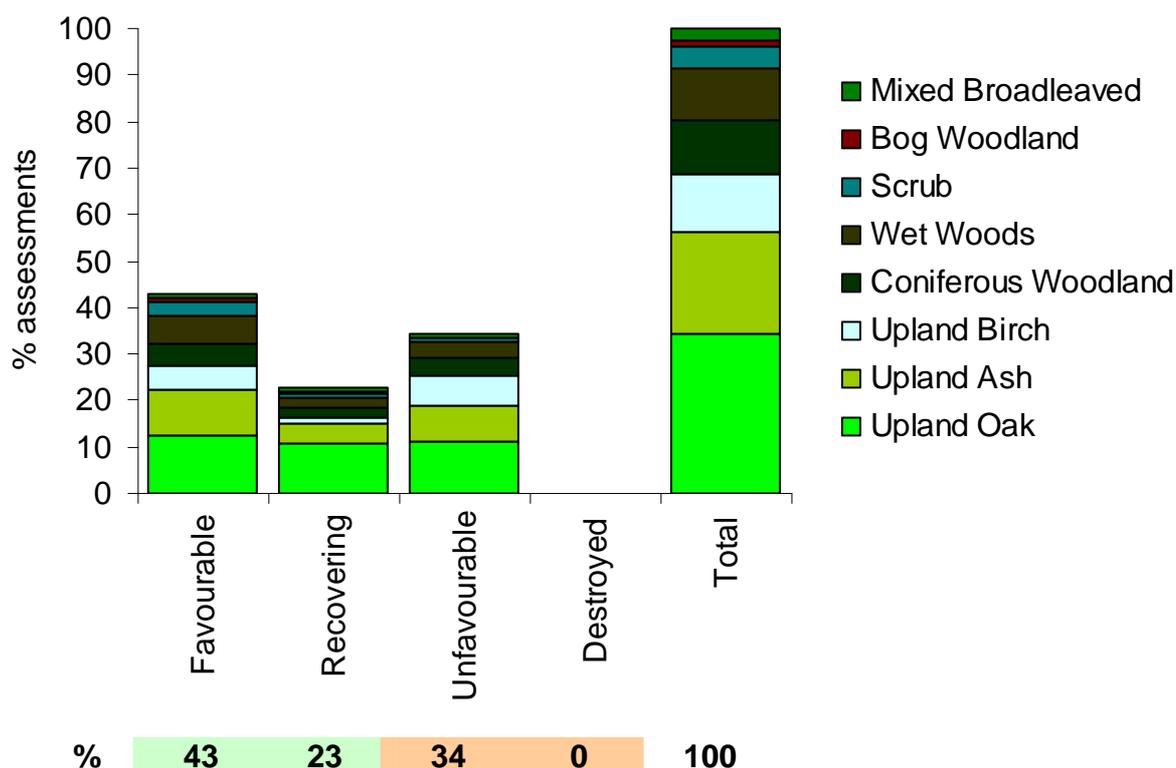
8.2 Habitat condition

Based on 464 condition assessments of native pinewoods and broadleaved woodlands within protected areas, **66%** were in favourable or recovering condition by October 2010 (**Figure 8.3**). The main reasons for poor condition were over-grazing, invasive species and land management.

Figure 8.3

Condition of notified features in woodland protected areas in 2010

Source: SNH – 30 September 2010, including recovery under remedial action as in the *National Indicator*



8.3 Trends in the status of priority habitats and species

Habitats and species that are strongly in decline or especially vulnerable have been identified for targeted action and are referred to as biodiversity ‘priority’ habitats and species.

Priority habitats

Based on a review in 2007, the number of biodiversity priority habitats in Scottish woodland ecosystems currently stands at seven. These are: lowland mixed deciduous woodland; native pine woodlands; upland birchwoods; upland mixed ashwoods; upland oakwood; wet woodland; wood-pasture & parkland

Six habitats assessed in the 2005 reporting round were re-assessed in 2008 (**Table 8.1**): lowland mixed deciduous woodland; native pine woodlands; upland mixed ashwoods; upland oakwood; wet woodland; and wood-pasture & parkland. Assessments are based on systematic survey where possible, but sometimes rely on expert judgement.

One of the habitats (wood-pasture & parkland) had been declining in 2005 but by 2008 all were stable or increasing.

Table 8.1
Trends in woodland priority habitat status between 2005 and 2008

Source: Biodiversity Action Reporting System

Woodland habitats Assessed in both years	2005		2008	
	count	%	count	%
Declining (slowing)	1	17		
Fluctuating - probably declining				
No clear trend				
Fluctuating - probably stable			1	17
Stable	1	17		
Fluctuating - probably increasing			1	17
Increasing	4	67	4	67

The overall trend for woodland priority habitats is **better**.

Priority species

Some 170 biodiversity priority species (e.g. mosses, liverworts, fungi and flowering plants; bees and butterflies; mammals and birds) occur in woodland ecosystems in Scotland.

Twenty-four species which were assessed in 2005 were re-assessed in 2008 (**Table 8.2**): a lichen, *Rothothelium dictyosporum*; a lichen, *Arthothelium macounii*; a lichen, *Bacidia incompta*; a lichen, *Biatoridium monasteriense*; tree catapyrenium lichen, *Catapyrenium psoromoides*; a lichen, *Pseudocyphellaria norvegica*; a lichen, *Schismatomma graphidioides*; elm gyalecta lichen, *Gyalecta ulmi*; stump lichen, *Cladonia botrytis*; slender thread-moss, *Orthodontium gracile*; blunt-leaved bristle-moss, *Orthotrichum obtusifolium*; green shield moss, *Buxbaumia viridis*; twinflower, *Linnaea borealis*; juniper, *Juniperus communis*; narrow-headed ant, *Formica exsecta*; pine hoverfly, *Blera fallax*; aspen hoverfly, *Hammerschmidia ferruginea*; barred tooth-striped moth, *Trichopteryx polycommata*; dark-bordered beauty moth, *Epione vespertaria*; chequered skipper butterfly, *Carterocephalus palaemon*; red squirrel, *Sciurus vulgaris*; European nightjar, *Caprimulgus europaeus*; Eurasian wryneck, *Jynx torquilla*; western capercaillie, *Tetrao urogallus*.

In 2005, **30%** were declining compared with **32%** in 2008. One species was thought to be no longer present in Scotland (Eurasian Wryneck, *Jynx torquilla*). The proportion of species that were stable or increasing rose from **41%** in 2005 to **49%** in 2008.

Table 8.2**Trends in woodland priority species status between 2005 and 2008***Source: Biodiversity Action Reporting System*

Woodland species Assessed in both years	2005		2008	
	count	%	count	%
Not a true species				
Lost (pre BAP publication)				
Lost (since BAP publication)			1	4
Declining (continuing/accelerating)	3	13	5	21
Declining (slowing)	4	17	2	8
Fluctuating - probably declining			1	4
No clear trend	7	29	3	13
Fluctuating - probably stable	1	4	2	8
Stable	7	29	8	33
Fluctuating - probably increasing				
Increasing	2	8	2	8

The overall appraisal of woodland priority species is **divergent** (positive and negative elements).

The wryneck, a sparrow-sized bird, is not easy to observe. Seen mostly in the spring and autumn, it is a regular migrant to eastern Britain. The European population, estimated at 350,000 – 1,000,000 pairs, accounts for less than half of its global breeding range. In recent decades it has undergone a moderate decline (>10% overall) across Europe. In Scotland, birds (probably of Scandinavian origin) were first recorded in Highland pine and birch woods in 1951. Breeding was confirmed in 1969, with a peak of seven pairs in 1977. Colonisation has since faltered, with no more than one pair confirmed in any year since 1985. Breeding has not been recorded in Scotland since 2004.

A more complete account, although not comparable between years, is based on 31 assessments in 2005 and in 2008 (**Table 8.3**). The proportion of species that were stable or increasing in 2008 (**45%**) exceeded those declining or lost (**28%**).

Table 8.3**Status of woodland priority species in 2005 and in 2008**

Source: Biodiversity Action Reporting System

Woodland species Assessed in either year	2005		2008	
	count	%	count	%
Not a true species				
Trend unknown	5	16	4	13
Lost (pre BAP publication)				
Lost (since BAP publication)			1	3
Declining (continuing/accelerating)	3	10	5	16
Declining (slowing)	4	13	2	6
Fluctuating - probably declining			1	3
No clear trend	8	26	4	13
Fluctuating - probably stable	1	3	3	10
Stable	8	26	9	29
Fluctuating - probably increasing				
Increasing	2	6	2	6

8.4 Wildlife indicators

Scotland's Biodiversity and Forestry Strategies set out objectives for the protection and enhancement of priority habitats associated with woodland, and for the conservation of priority species such as red squirrel, *Sciurus vulgaris*. Attributes of woodland structure and composition such as the number of canopy layers or types of trees and shrubs are known to relate closely to species and habitat diversity ([S7 – Woodland Diversity Indicator](#)).

Between 1994 and 2008, 50 of 65 terrestrial breeding bird species in Scotland increased in abundance, by 31% overall. Woodland birds increased by 64% ([S3 – Abundance of Terrestrial Breeding Birds Indicator](#)).

8.5 Action for biodiversity

The five objectives of Scotland's Biodiversity Strategy (habitats and species; people; ecosystems and landscapes; integration and coordination; and knowledge) are implemented through a series of specific actions. Progress with actions delivered through the Woodland Ecosystems Group by late 2010 is summarised in **Table 8.4** (details are provided in **Annex 3e**). All five specified actions were on target.

Table 8.4
Action Implementation 2010
Woodland Ecosystems Group

Woodland	on target	room for improvement	not on target
Species and Habitats	2		
People			
Landscapes and Ecosystems	1		
Integration and Coordination			
Knowledge	2		
Total	5		
%	100		

Highlights

The bodies that make up the Woodland Group have achieved a lot over the last three years, including:

- increasing by 9% the proportion of woodland SSSIs in favourable or unfavourable recovering condition;
- mapping woodland habitat networks and creating opportunity maps to guide future woodland expansion; and
- publishing a decision tool for woodland managers to help in the management of habitats and rare, priority protected species (HARPPS).

Additional actions for woodland biodiversity that were carried out within the Scottish Forestry Strategy implementation plan over this period.

9 Upland ecosystems



9 Upland ecosystems

The extent and stature of Scotland's uplands are distinctive, both in terms of the rugged landscape character and range of habitats not duplicated elsewhere in the world. According to the [Countryside Survey report for Scotland](#), published in 2009, over half of Scotland's land area (55%) is upland habitat: montane (0.5%); inland rock (1%); bracken (1.6%); fen, marsh & swamp (3%); dwarf shrub heath (11%); acid grassland (12%); and bog (26%). Montane and inland rock are insufficiently represented in the sample to be reported on. The five that are sufficiently represented, in order of magnitude, are described here.

9.1 Habitat extent

Bracken

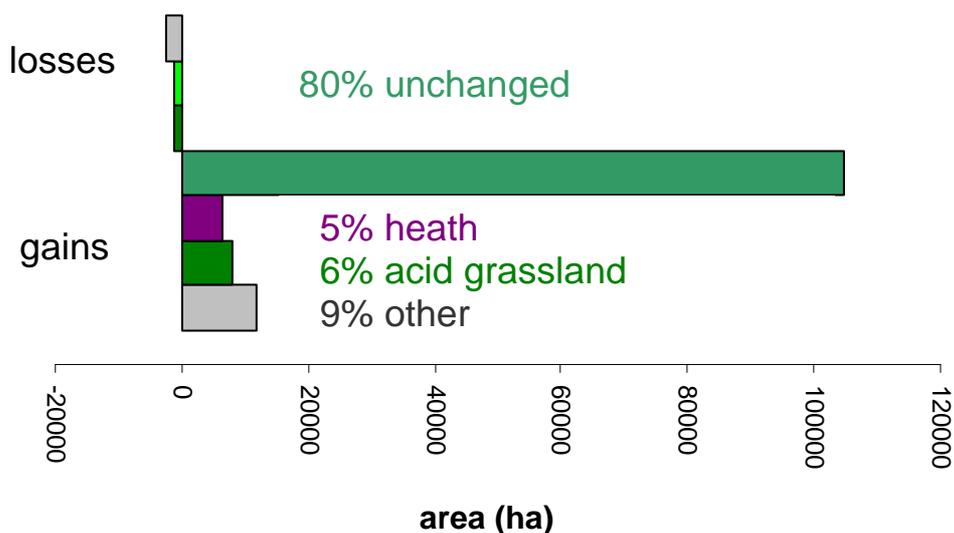
Although the bracken plant is natural in Scotland, infestation can degrade habitats like heather moorland and, being unpalatable, disproportionately reduce the productivity of hill grazing as it rapidly colonises deeper soils on the most fertile ground. Where scattered in relatively small patches, bracken is difficult to detect and measure in sample surveys. Countryside Survey reports only on dense stands, where bracken exceeds 95% cover. The extent of bracken remained essentially unchanged between 1998 and 2007 (an apparent increase of 8%, from 121,000ha to 131,000ha, was not statistically significant). The interchange of gains and losses between habitats is illustrated in **Figure 9.1**.

Bracken increased significantly in the intermediate uplands and islands, where it was already most abundant, from 49,000ha in 1998 to 62,000ha in 2007.

Figure 9.1
Change in the extent of bracken broad habitat between 1998 and 2007

Source: Countryside Survey 2007

Note: negative changes (losses) are scaled differently from positive changes (gains)



The proportion of competitive species increased (tall perennials) as did plants associated with wetness. Grassiness decreased (grass:forb ratio, i.e. the log ratio of grass to forbs, which include meadow herbs such as buttercup & clover).

The likelihood is that bracken has increased in extent over recent decades. The [National Countryside Monitoring Scheme](#) estimate of bracken (defined by >50% cover) was 71,000ha in 1947 compared with the Countryside Survey estimate of 132,000ha in 2007 (defined by >95% cover) – i.e. the higher estimate in 2007 was based on a smaller sample of denser stands.

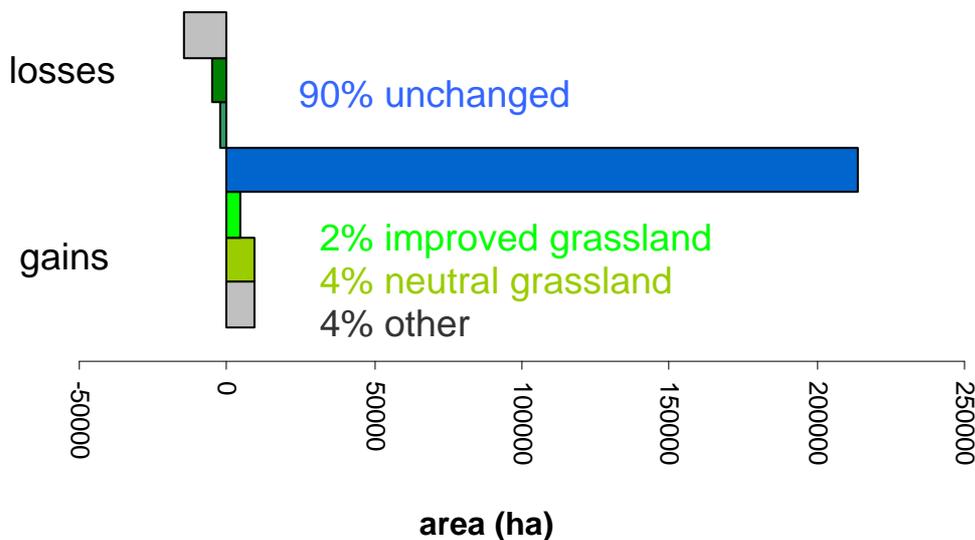
Fen, marsh & swamp

Fen, marsh & swamp (vegetation dominated by herbs, sedges and rushes rather than grasses) covered 3% of Scotland in 2007. Its extent remained essentially unchanged between 1998 and 2007 (an apparent decrease of 8.8%, from 261,000ha to 238,000ha was not statistically significant). The interchange of gains and losses between habitats is illustrated in **Figure 9.2**.

Figure 9.2
Change in the extent of fen, marsh & swamp broad habitat between 1998 and 2007

Source: Countryside Survey 2007

Note: negative changes (losses) are scaled differently from positive changes (gains)



Species richness decreased (the total number of vascular plants present, at the level of genus), as did plants important in the diet of a range of declining lowland farmland birds, and plants that provide food for butterfly caterpillars.

Dwarf shrub heath

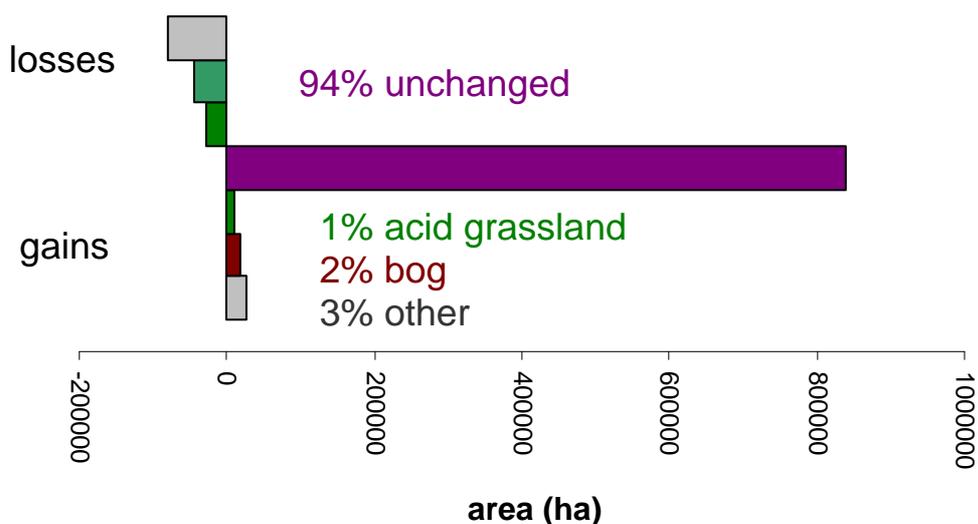
Dwarf shrub heath (heather moorland) covered 11.1% of Scotland in 2007. It remained essentially unchanged in extent between 1998 and 2007 (an apparent decrease of 2%, from 912,000ha to 894,000ha was not statistically significant). The interchange of gains and losses between habitats is illustrated in **Figure 9.3**.

Figure 9.3

Change in the extent of dwarf shrub heath broad habitat between 1998 and 2007

Source: Countryside Survey 2007

Note: negative changes (losses) are scaled differently from positive changes (gains)



Grassiness increased (grass:forb ratio, i.e. the log ratio of grass to forbs, where forbs are mainly meadow herbs such as buttercup & clover). Plants that provide food for butterfly caterpillars decreased.

Acid grassland

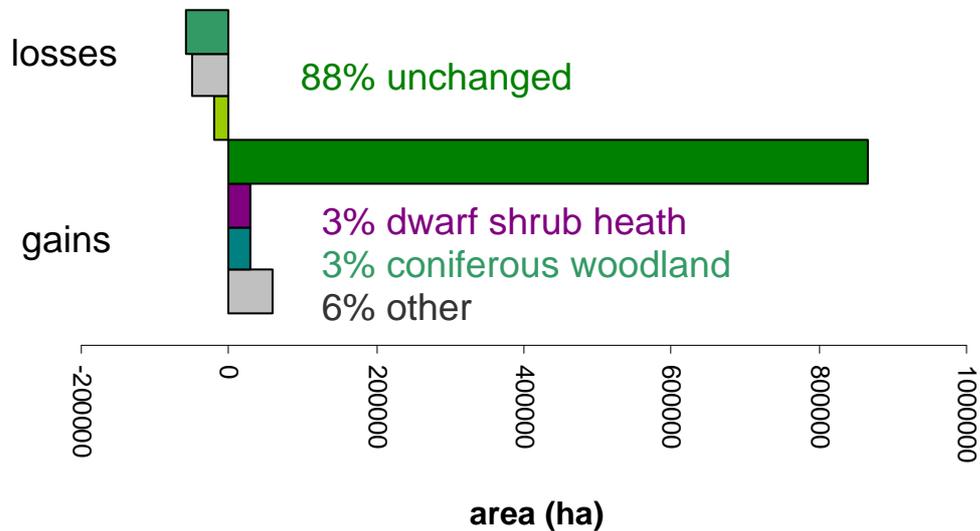
Acid grassland covered 12.3% of Scotland in 2007. It increased in extent by 8%, from 911,000ha in 1998 to 983,000ha in 2007. Much was unchanged from 1998 (88%), the rest due to a conversion of heath (3%) and other habitats (6%), together with the opening up of coniferous woodland through restructuring or felling (3%). The main expansion was in the uplands, from 573,000ha in 1998 to 624,000ha in 2007. The interchange of gains and losses between habitats is illustrated in **Figure 9.4**.

Figure 9.4

Change in the extent of acid grassland broad habitat between 1998 and 2007

Source: Countryside Survey 2007

Note: negative changes (losses) are scaled differently from positive changes (gains)



The proportion of competitive species (tall perennials) and plants associated with wetness, increased. Species richness decreased (the number of vascular plants present, at the level of genus), as did plants important in the diet of a range of declining lowland farmland birds, plants that provide food for caterpillars, and the proportion of fast colonisers associated with disturbance (ruderals).

Bog

The upland ecosystem includes peatlands, formed through incomplete decay and steady accumulation of dead material in a largely waterlogged and anaerobic environment. A variety of plants can lay down peat: *Sphagnum* mosses or cotton and deer grasses in bogs, or sedges, reeds and trees in fens. Bogs, which receive nutrients mainly from precipitation, represent some of the most nutrient-poor and acidic environments for plant growth. With available nitrogen and phosphorus in short supply, bog plants are adapted to tight nutrient cycling, exemplified in the carnivorous sundew, *Drosera spp.* The conservation interest of peatlands is of international importance. Blanket bog is more expansive in Scotland and Ireland than elsewhere in Europe, including some unique patterned bog types. Scotland has among the richest surviving concentrations of raised bog in Europe.

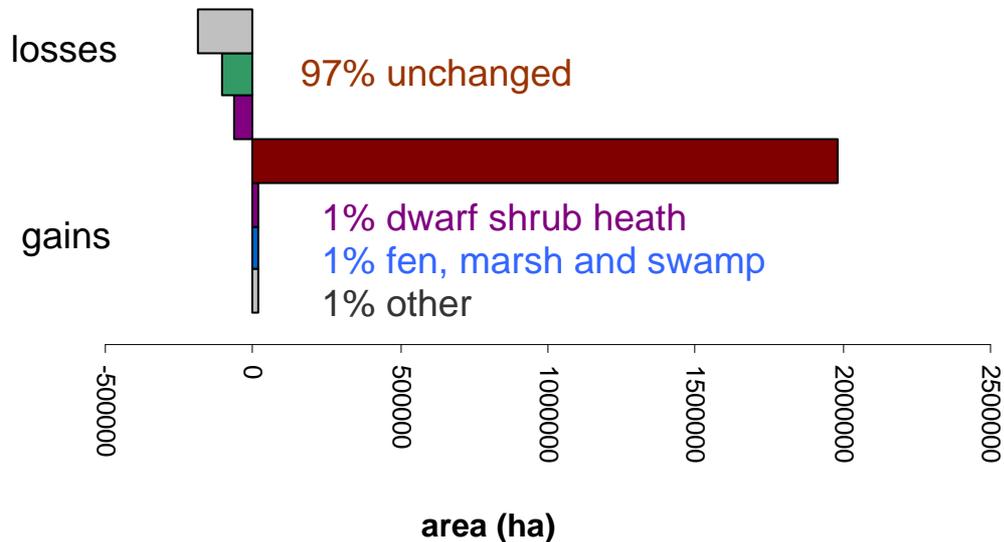
Small changes at the margins were not significant. The extent of bog (blanket, raised and valley bogs) remained unchanged between 1998 and 2007, covering 2,044,000ha in 2007. The interchange of gains and losses between habitats is illustrated in **Figure 9.5**.

Figure 9.5

Change in the extent of bog broad habitat between 1998 and 2007

Source: Countryside Survey 2007

Note: negative changes (losses) are scaled differently from positive changes (gains)



In terms of botanical composition:

- Grassiness increased (measured as a grass:forb ratio, i.e. the log ratio of grass to forb cover; forbs typically including meadow herbs such as buttercup & clover), as did the proportion of competitive species (tall perennials) and plants tolerant of acidity.
- Species richness decreased (the total number of vascular plants, at the level of genus), as did plants important in the diet of a range of declining lowland farmland birds, plants that provide food for butterfly caterpillars, the proportion of fast colonisers associated with disturbance (ruderals), and plants associated with nutrient availability (fertility).

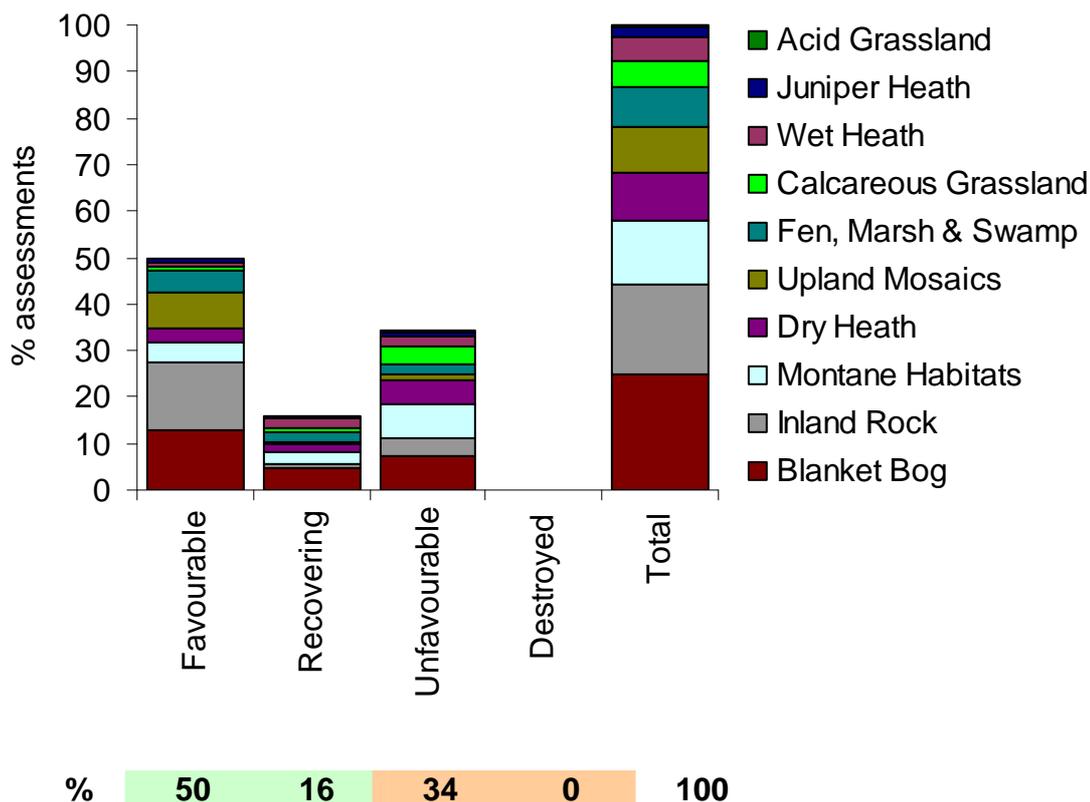
9.2 Habitat condition

Based on 767 condition assessments on protected areas, **66%** were in favourable or recovering condition by October 2010 (**Figure 9.6**). The main reasons for poor condition were over-grazing, burning and invasive species.

Figure 9.6

Condition of notified features in upland protected areas in 2010

Source: SNH – 30 September 2010, including recovery under remedial action as in the [National Indicator](#)



9.3 Trends in the status of priority habitats and species

Habitats and species that are strongly in decline or especially vulnerable have been identified for targeted action and are referred to as biodiversity 'priority' habitats and species.

Priority habitats

Based on a review in 2007, the number of biodiversity priority habitats in Scottish upland ecosystems increased to eight. These are: blanket bog; limestone pavement; upland heathland; calaminarian grasslands; inland rock outcrop and scree habitats; mountain heaths and willow scrub; upland calcareous grassland; upland flushes, fens and swamps.

Four habitats assessed in 2005 were re-assessed in 2008 (**Table 9.1**): blanket bog; limestone pavement; upland calcareous grassland; upland heathland. Assessments are based on systematic survey where possible, but sometimes rely on expert judgement.

All four habitats were in decline (slowing) in 2005, but one had become stable by 2008 (limestone pavement).

Table 9.1
Trends in upland priority habitat status between 2005 and 2008

Source: Biodiversity Action Reporting System

Upland habitats Assessed in both years	2005		2008	
	count	%	count	%
Declining (slowing)	4	100	3	75
Fluctuating - probably declining				
No clear trend				
Fluctuating - probably stable				
Stable			1	25
Fluctuating - probably increasing				
Increasing				

The overall appraisal of upland priority habitats is **better**.

Priority species

Some 122 biodiversity priority species (e.g. mosses, liverworts, fungi and flowering plants; bees and butterflies; mammals and birds) occur in Scottish upland ecosystems.

Thirteen species which were assessed in 2005 were re-assessed in 2008 (**Table 9.2**): a lichen, *Alectoria ochroleuca*; northern prongwort (liverwort), *Herbertus borealis*; lead-moss, *Ditrichum plumbicola*; stalked puffball, *Tulostoma niveum*; Norwegian mugwort (flowering plant), *Artemisia norvegica*; Shetland mouse-ear (flowering plant), *Cerastium nigrescens*; sword grass, *Xylena exsoleta*; mountain scurvy-grass, *Cochlearia micacea*; yellow marsh saxifrage, *Saxifraga hirculus*; oblong woodsia, *Woodsia ilvensis*; woolly willow, *Salix lanata*; argent and sable moth, *Rheumaptera hastate*; and netted mountain moth, *Macaria carbonaria*.

In 2005 and 2008, **8%** were declining (the declining status of flowering plant Shetland Mouse-ear, *Cerastium nigrescens* deteriorated). The number of species which were stable or increasing (**84%**) also remained the same (although woolly willow, *Salix lanata*, changed from increasing to stable).

Table 9.2**Trends in upland priority species status between 2005 and 2008***Source: Biodiversity Action Reporting System*

Upland species Assessed in both years	2005		2008	
	count	%	count	%
Not a true species			1	8
Lost (pre BAP publication)				
Lost (since BAP publication)				
Declining (continuing/accelerating)			1	8
Declining (slowing)				
Fluctuating - probably declining	1	8		
No clear trend	1	8		
Fluctuating - probably stable			2	15
Stable	10	77	9	69
Fluctuating - probably increasing				
Increasing	1	8		

The overall appraisal of upland priority species is broadly **unchanged**.

9.4 Wildlife indicators

Between 1994 and 2008, 50 of 65 terrestrial breeding bird species in Scotland increased in abundance, by 31% overall. Upland birds showed no overall change ([S3 – Abundance of Terrestrial Breeding Birds Indicator](#)).

9.5 Action for biodiversity

The five objectives of Scotland's Biodiversity Strategy (habitats and species; people; ecosystems and landscapes; integration and coordination; and knowledge) are implemented through a series of specific actions. Progress with actions delivered through the Upland Ecosystems Group by late 2010 is summarised in **Table 9.3** (details are provided in **Annex 3f**). Among the 9 specified actions, 4 were on target. Implementation of 1 of the actions needed to improve, and 4 actions were failing.

**Table 9.3
Action Implementation 2010
Upland Ecosystems Group**

Upland	on target	room for improvement	not on target
Species and Habitats			2
People			2
Landscapes and Ecosystems	3	1	
Integration and Coordination			
Knowledge	1		2
Total	4	1	4
%	44	11	44

Highlights

The bodies that make up the Upland Group have achieved a lot over the last two years, including:

- identifying the key biodiversity challenges for managing the uplands sustainably whilst accommodating different management objectives;
- developing the *Upland Solutions* project, aimed at finding practical ways through the difficulties of managing land in the uplands; and
- delivering a series of good practice events to demonstrate to land use practices needed to deliver benefits to biodiversity in the uplands.

Exceptions

The four failing actions are related to reviews of further education courses for outdoor instructors and upland managers. These were abandoned due to a reduction in a lead partner’s core funding and because most of the relevant courses are being run out-with Scotland.

10 Scotland overview



10 Scotland overview

The landmass of Scotland forms the northern part of the island of Great Britain, situated between latitudes 54°38' and 60°51'N and longitudes 1°45' and 6°14'W. It is bounded west and north by the Atlantic Ocean and on the east by the North Sea. In the south, the border with England runs 100km, roughly along the line of the Cheviot Hills.

10.1 Habitat extent

The analysis of habitat extent combines results across terrestrial ecosystems, because they were subdivided in previous sections. The coastal and marine ecosystem is not covered again here as it has a chapter in its own right.

The land area of Scotland estimated by [Countryside Survey](#) (**Table 10.1**) is about 80,000km², being around 240km at its widest and 1,350 m at its highest. Although Countryside Survey reported broad habitat extent in Scotland from 1990 onwards, the significance of change was only assessed between 1998 and 2007.

The areas of standing open waters remained unchanged between 1998 and 2007, but the number of ponds increased by 6%. The extent (width) of rivers and streams is weather dependent, so no ecological significance can be attributed to the 3% increase between 1998 and 2007.

The lowland and farmland ecosystem covered 28% of Scotland in 2007. Between 1998 and 2007, the area under arable & horticulture declined by 13% (**Figure 6.1**); improved grassland expanded by 9% (**Figure 6.2**). The length of [linear features](#) (hedges, walls, fences, etc.) decreased by nearly 8%. The total length of hedges and lines of trees (woody linear features) decreased by 5% in Scotland between 1998 and 2007; managed hedgerows decreased by 7%; and the length of walls decreased marginally in upland areas.

By Countryside Survey definitions of land cover, the woodland ecosystem covered 15% of Scotland in 2007. Broadleaved woodland expanded by nearly 10% between 1998 and 2007, from new planting and the restructuring of plantation conifer forest (**Figure 8.1**). Although the forest estate didn't contract, the 7% decline of coniferous woodland cover is attributed to the felling cycle (creating temporary open habitats) and restructuring with broadleaved trees (**Figure 8.2**).

Around half of Scotland (55%) is upland, half of which is bog and half split mainly between acid grassland and dwarf shrub heath (heather moorland). The only statistically significant change in the extent of upland habitats between 1998 and 2007 was an expansion, by nearly 8%, of acid grassland (**Figure 9.4**).

Table 10.1 Broad habitat extent in 1990, 1998 and 2007

Source: Countryside Survey 2007

	1990	1998	2007		1998 - 2007		
	000 ha	000 ha	000 ha	% Scotland	change (000 ha)	% change	significant change 1998 - 2007
Fresh water & wetland							
Standing Open Waters	75	88	89	1.1	1	1	-
Rivers & Streams	21	20.7	21.3	0.3	0.6	2.9	↑
Lowland and farmland ecosystem							
Arable & Horticulture	593	618	534	6.6	-84	-13.6	↓
Improved Grassland	815	831	907	11.2	76	9.1	↑
Neutral Grassland	429	430	461	5.8	31	7.2	-
Linear Features ('000 km)	143	103	95	1.2	-8	-7.8	↓
Built-up Areas & Gardens	150	153	153	1.9	0	0.1	-
Other land	48	77	74	0.9	n/a	n/a	-
Unsurveyed urban land	38	38	38	0.5	n/a	n/a	-
Woodland ecosystem							
Broadleaved, Mixed & Yew Woodland	284	229	251	3.1	22	9.5	↑
Coniferous Woodland	913	1,030	956	11.9	-74	-7.1	↓
Upland ecosystem							
Montane	n/a	38	38	0.5	1	1.9	-
Inland Rock	53	91	84	1	-7	-7.8	-
Bracken	107	121	132	1.6	10	8.4	-
Fen, Marsh & Swamp	289	261	239	3	-22	-8.6	-
Calcareous Grassland	36	28	26	0.3	-2	-5.5	-
Dwarf Shrub Heath	1,007	912	894	11.1	-18	-2	-
Acid Grassland	1,095	911	983	12.3	72	7.9	↑
Bog	1,922	2,039	2,044	25.6	5	0.2	-
Total	8,019	8,019	8,019	100			

10.2 Habitat condition

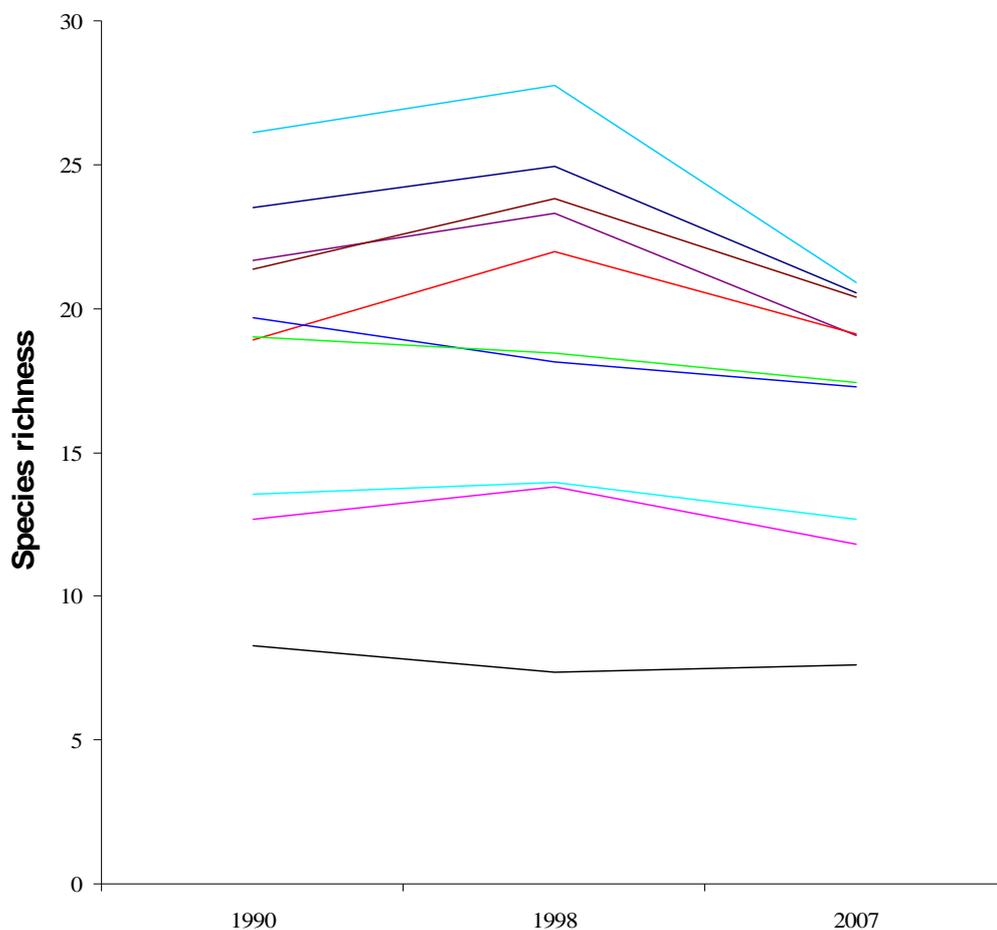
By recording plant species present within habitats, the Countryside Survey is able to measure changes in terrestrial habitat condition that may be associated with changing environmental conditions. A summary measure of habitat condition is plant diversity ([S6 – Vascular Plant Diversity Indicator](#)).

Figure 10.1

Plant Diversity 1990 – 2007

Change in the mean number of vascular plant species within 'Broad Habitats'

Source: Countryside Survey 2007



Plant species tolerant of harsh environments (stress tolerators) decreased between 1998 and 2007, as did those associated with open, disturbed conditions (ruderals). Species associated with more fertile conditions also decreased.

Conversely, competitive plant species have increased since 1978. Plant species associated with wetter conditions increased in areas surveyed for their botanical interest between 1998 and 2007, and in all plot types between 1978 and 2007. Species associated with shady conditions increased from 1998 to 2007 in linear features, such as hedgerows, and in areas surveyed for their botanical interest.

Overall, vascular plant diversity decreased by 9.8% between 1998 and 2007. Seven of the 10 broad habitats showed significant decreases (acid grassland; broadleaved, mixed and yew woodland; coniferous woodland; bog; improved grassland; fen; marsh and swamp; and neutral grassland).

Habitat condition in protected areas

The condition of Scotland's 1,451 protected areas, including marine environments, provide additional insights into habitat condition ([S11 – Notified Habitats in Favourable Condition Indicator](#)):

- 55% of habitat features were in favourable condition; 17% were in unfavourable recovering; and 27% were unfavourable.
- 99% of marine and 83% of coastal features were favourable/unfavourable recovering.
- 78% of freshwater and 76% of wetland features were favourable/unfavourable recovering.
- 66% of upland, 65% of woodland, 81% of lowland heathland and 65% of lowland grassland features were favourable/unfavourable recovering.
- 96% of geological features were favourable/unfavourable recovering.

10.3 Trends in the status of priority habitats and species

Habitats and species that are strongly in decline or especially vulnerable have been identified for targeted action and are referred to as biodiversity 'priority' habitats and species.

Priority habitats

Based on a review in 2007, the number of biodiversity priority habitats that occur in Scotland was increased to 60 in 2008. The scope and / or definition of 11 of the previous habitats were also modified. Trend assessment therefore depends on comparing like-with-like, based on a restricted number of comparisons, or the latest status assessment. Both are provided here.

Thirty-nine assessments in 2005 were repeated in 2008 (**Table 10.2**) for the following habitats: eutrophic standing waters; coastal and floodplain grazing marsh; lowland fens; lowland raised bog; mesotrophic lakes; arable field margins; hedgerows; lowland calcareous grassland; lowland dry acid grassland; lowland heathland; lowland meadows; purple moor grass and rush pastures; upland hay meadows; blanket bog; limestone pavements; upland calcareous grassland; upland heathland; lowland mixed deciduous woodland; native pine woodlands; upland mixed ashwoods; upland oakwood; wet woodland; wood-pasture & parkland; coastal saltmarsh; machair; horse mussel beds; *maerl* beds; saline lagoons; *Serpulid* reefs. Assessments are based on systematic survey where possible, but sometimes rely on expert judgement.

The proportion of habitats which were declining remained unchanged at **34%** in 2005 and in 2008. Those stable or increasing rose, from **36%** in 2005 to **45%** in 2008.

Table 10.2
Trends in priority habitat status between 2005 and 2008

Source: Biodiversity Action Reporting System

All ecosystems Assessed in both years	2005		2008	
	count	%	count	%
Trend unknown	9	23	8	21
Declining (continuing/accelerating)	0	0	1	3
Declining (slowing)	12	31	10	26
Fluctuating - probably declining	1	3	2	5
No clear trend	3	8	1	3
Fluctuating - probably stable	0	0	3	8
Stable	8	21	8	21
Fluctuating - probably increasing	0	0	1	3
Increasing	6	15	5	13

The overall appraisal of priority habitats is **better**.

A more complete account, although not comparable between years, is based on 41 assessments in 2005 and in 2008 (**Table 10.3**). Those stable or increasing in 2008 (**41%**) exceeded those declining (**31%**).

Table 10.3
Status of priority habitats in 2005 and in 2008

Source: Biodiversity Action Reporting System

All ecosystems Assessed in either year	2005		2008	
	count	%	count	%
No longer BAP habitat for Scotland	0	0	2	5
Trend unknown	11	27	8	20
Declining (continuing/accelerating)	0	0	1	2
Declining (slowing)	12	29	10	24
Fluctuating - probably declining	1	2	2	5
No clear trend	3	7	1	2
Fluctuating - probably stable	0	0	3	7
Stable	8	20	8	20
Fluctuating - probably increasing	0	0	1	2
Increasing	6	15	5	12

Scotland's biodiversity indicator is based on the 39 habitat assessments, above (i.e. excluding the two habitats that were removed from the Scotland list). Six (15%) were increasing; 11 (28%) were stable; and 13 (33%) were declining ([S2 – Status of UK BAP Priority Habitats Indicator](#)). For the remainder, the trend was unknown for eight and unclear for one.

Priority species

Some 610 biodiversity priority species (e.g. mosses, liverworts, fungi and flowering plants; bees, butterflies and other invertebrates; amphibians, fish and reptiles; mammals and birds) occurred in Scotland in 2008.

Assessments of 181 species in 2005 were repeated in 2008 (**Table 10.4**). The proportion of species declining rose from **18%** in 2005 to **24%** in 2008. One species was thought to be no longer breeding in Scotland (Eurasian Wryneck, *Jynx torquilla*). The proportion of species which were stable or increasing rose from **37%** in 2005 to **39%** in 2008.

Table 10.4
Trends in priority species status between 2005 and 2008

Source: Biodiversity Action Reporting System

Species in all ecosystems Assessed in both years	2005		2008	
	count	%	count	%
Not a true species	1	1	1	1
Trend unknown	65	36	53	29
Lost (pre BAP publication)	2	1	2	1
Lost (since BAP publication)	0	0	1	1
Declining (continuing/accelerating)	11	6	14	8
Declining (slowing)	18	10	21	12
Fluctuating - probably declining	3	2	7	4
No clear trend	17	9	11	6
Fluctuating - probably stable	5	3	16	9
Stable	48	27	46	25
Fluctuating - probably increasing	1	1	2	1
Increasing	10	6	7	4

The overall appraisal of priority species is **divergent**.

A more complete account, although not comparable between years, is based on 225 assessments in 2005 and 230 in 2008 (**Table 10.5**). The proportion of species that were stable or increasing in 2008 (**33%**) exceeded the number declining or lost (**15%**).

Table 10.5
Status of priority species in 2005 and in 2008

Source: Biodiversity Action Reporting System

Species in all ecosystems Assessed in either year	2005		2008	
	count	%	count	%
Not a true species	3	1	1	0
Not a BAP species for Scotland in this year	16	7	28	12
Trend unknown	87	39	63	28
Lost (pre BAP publication)	3	1	2	1
Lost (since BAP publication)	0	0	1	0
Declining (continuing/accelerating)	11	5	14	6
Declining (slowing)	18	8	21	9
Fluctuating - probably declining	3	1	7	3
No clear trend	17	8	14	6
Fluctuating - probably stable	5	2	19	8
Stable	51	23	46	20
Fluctuating - probably increasing	1	0	2	1
Increasing	10	4	7	3

Scotland's biodiversity indicator, updated in 2008, is based on 197 species assessments, above (i.e. excluding those lost and removed from the Scotland list). Nine (5%) were increasing; 65 (33%) were stable; and 43 (22%) were declining (**S1 – Status of UK BAP Priority Species Indicator**). Among the remainder, the trend for 14 (7%) was not clear and for 63 (32%) was unknown.

10.4 Wildlife indicators

Wildlife and other indicators are published on the SNH website (see below), and summarised in the next section.

[Biodiversity Indicators – State](#)

[Biodiversity Indicators – Engagement](#)

[Natural Heritage Indicators](#)

11 Assessing the 2010 target



11 Assessing the 2010 target

In 2001 European Union (EU) Heads of State or Government undertook to [halt the decline of biodiversity](#) in the EU by 2010 and to restore habitats and natural systems. The following year they also joined some 130 world leaders, as Parties to the [Convention on Biological Diversity](#), in agreeing to significantly reduce the rate of biodiversity loss globally by 2010. In 2006, the EU issued a [Biodiversity Communication](#) and detailed [Biodiversity Action Plan](#) to halt the loss of biodiversity by 2010. A consistent approach to assessing progress through targets and indicators has been adopted in the UK and in Scotland.

Global

The [Millennium Ecosystem Assessment](#) 2001 – 2005 showed that ecosystems have been altered more rapidly in the past 50 years than at any comparable period in human history. In April 2002, the Parties to the United Nations [Convention on Biological Diversity](#) (CBD) pledged a significant reduction by 2010 of the rate of biodiversity loss at the global, regional and national levels. Progress is assessed by [22 headline indicators](#) across seven focal areas (**Annex 1, columns 1 and 2**). The biodiversity target was subsequently endorsed by the World Summit on Sustainable Development and incorporated by the United Nations General Assembly into the [Millennium Development Goals](#) to end poverty by 2015.

Prominent among issues identified were **habitat fragmentation; climate change; invasive species; pollution;** and unsustainable **use of the marine environment** – against the backdrop of human population growth and food security.

Europe

European Union Heads of State made a commitment at the 2001 Gothenburg Summit to halt the decline of biodiversity by 2010. The '[Message from Malahide](#)' (EU Stakeholders' Conference on Biodiversity in 2004) stated that rapid biodiversity loss continued to threaten economic and social progress in Europe and worldwide. The pan-European initiative [SEBI2010](#) ("see by 2010" - Streamlining European 2010 Biodiversity Indicators) specified a suite of [26 indicators](#) to assess progress (**Annex 1, column 3**).

The [2005 European state of the environment report](#), based on 31 country assessments, showed that a third of 37 core environmental indicators were not on target. Key concerns at the European scale were identified as: biodiversity under serious pressure; over-exploitation of marine fisheries; invasive non-native species; and potential impacts of climate change. The [fourth State and Outlook Report on the European environment](#), to be published in mid-2010, will review the state of the environment for 38 countries – including the UK - and consider what that state might be by 2020.

The [United Nations Economic Commission for Europe assessment in 2007](#) covered the 53 countries of the pan-European region, from the Atlantic Ocean in the west to beyond the central Asian plains in the east, from the Arctic Ocean in the north to the Mediterranean Sea in the south. The 2007 assessment gave particular attention to environmental priorities, including: air emissions; urban air quality; trans-boundary,

inland and groundwater pollution; marine pollution; chemical and hazardous waste; waste management; human health and biodiversity. Challenges identified in the report include:

- Patterns of production and consumption deplete and contaminate natural resources within and beyond Europe's borders: waste generation is increasing in the pan-European region while the legacy of old waste sites still presents problems in some EECCA (Eastern Europe, Caucasus and Central Asia) and SEE (South Eastern Europe) countries.
- Environment-related health concerns: despite considerable reductions in air pollutant emissions in much of the pan-European region, atmospheric pollution (in particular fine particles and ozone) still poses a significant threat to human health and the environment. In EECCA countries most air polluting emissions have increased by more than 10% since 2000. Although water quality appears to have improved in rivers across the region, some large rivers and many smaller watercourses remain severely polluted. More than 100 million people in the pan-European region do not have access to safe drinking water and adequate sanitation; and in EECCA and SEE the quality of water supply and sanitation services has deteriorated continuously over the past 15 years. Soil degradation, in particular contaminated sites, is an issue of concern across the region.
- Climate change, mainly driven by energy consumption and the resulting emission of greenhouse gases (GHG), exacerbates extreme weather events (such as flooding or droughts) and has an impact on a range of socio-economic activities such as agriculture and tourism. Impacts of climate change on society and natural resources are already occurring both across the pan-European region and worldwide, and are projected to become even more pronounced. A global emission reduction of up to 50% by 2050 is necessary to achieve the target proposed by the EU, to limit temperature increase to a maximum of 2°C above pre-industrial levels.
- Biodiversity loss in the pan-European region (particularly in farmland, mountain regions, forests and coastal zones) is occurring as a result of land use changes, urban sprawl, infrastructure development, acidification, eutrophication, desertification, resource overexploitation, both intensification and abandonment of agriculture, as well as climate change. The global target of halting biodiversity loss by 2010 will not be achieved without considerable additional efforts. More than 700 species are currently under threat in the pan-European region, while the number of invasive alien species in the pan-European region continues to increase. National forest plans that link sustainable forest management with an ecosystem approach are being implemented. Nevertheless, illegal logging and human-induced forest fires are a growing problem, particularly in EECCA and SEE.
- Overuse of marine resources and pressure on coastal environments remain high. Eutrophication is a problem in all enclosed seas and sheltered marine waters of the pan-European region. Over-fishing and destructive fishing practices are widespread in all pan-European seas. Major accidental oil spills have generally decreased in European seas, although oil discharges from day to day activities, such as maritime transport and refineries, are still significant.

The European Commission has identified widespread overfishing and overcapacity of the European fishing fleet as reasons to [reform the Common Fisheries Policy \(CFP\)](#). Catches of 88 % of the stocks exploited in Community waters exceed the stock's renewal capacity. Many fisheries rely on catches of young specimens taken before they have reached sexual maturity. Results of a consultation on CFP reform will be published in March 2010 towards implementation of a reformed CFP in 2013.

The [2009 assessment of protected areas in Europe](#) asserts that the designation of protected areas is a cornerstone for the conservation of biodiversity worldwide, from genes to species, habitats and ecosystems. The total area of nationally designated sites in 39 European countries was around 100 million hectares in 2008, indicating a positive commitment by European countries to biodiversity conservation. Some 52 million hectares were designated as Special Protected Areas and 65 million as Sites of Community Importance (SCI). At least 45% of the SCI area is also covered by a national designation. The level of sufficiency in designating Natura 2000 sites for the Habitats Directive was high for most EU-27 countries (21 countries have sufficiency above 80%) and the new Member States were doing well. However, marine areas were not yet represented as Natura 2000 sites as the phase of proposals was still going on. In view of increasing pressures on biodiversity, the report called for a more comprehensive assessment of biodiversity within and beyond protected areas, the effectiveness of designated sites in protecting and conserving biodiversity, and consequences of climate change.

A 2009 evaluation of the conservation status of plant and animal species ([Red List of Threatened Species](#)) by the [International Union for Conservation of Nature \(IUCN\)](#) showed that 36% of 47,677 species assessed were are threatened with extinction. According to the IUCN, many species are declining to critical population levels, important habitats are being **destroyed, fragmented, and degraded**, and ecosystems are being destabilised through **climate change, pollution, invasive species**, and direct **human impacts**. It has been estimated that the current species extinction rate is between 1,000 and 10,000 times higher than it would naturally be.

The 2009 G8 environment ministers meeting ([Syracuse 22-24 April 2009](#)) acknowledged the substantial efforts made to achieve the 2010 target but remained highly concerned about biodiversity loss and consequent damage to ecosystem services. Regional and national reports will contribute to the third Global Biodiversity Outlook at the tenth meeting of the Conference of the Parties in 2010.

The first European indicator-based assessment, 'Progress towards the European 2010 biodiversity target' ([EEA Report No 4/2009](#)), was launched on Biodiversity Day, 22 May 2009. Reported successes include establishing the Natura network (across 17% of the EU area), reduced pollution and a leveling-off in the decline of wild birds. However, the report concludes that European biodiversity remains under serious pressure, not least from the **over-exploitation of marine fish stocks; invasive non-native species**; and potential impacts of **climate change**. **Degraded ecosystems** have a reduced capacity to respond: 40-85% of habitats and 40-70% of species of European interest have an unfavourable conservation status.

The gap between demand (consumption and waste generation) and bio-capacity has grown progressively since 1960. Policy responses remain insufficient to halt the general

decline: between 2000 and 2050 biodiversity is expected to decrease from about 45% of full potential (pre-industrialisation) to between 42 and 34%. Greater urgency needs to be given to: preserving biodiversity; sector policies; cohesion policy and the use of structural funds; territorial policies; the maintenance of ecosystem functions and their distribution; and ecosystem accounting.

The European assessment concluded that policy responses remain insufficient to halt the general decline: between 2000 and 2050 biodiversity is expected to decrease from about 45% of full potential (pre-industrialisation) to between 42 and 34%. Greater urgency needs to be given to: preserving biodiversity; sector policies; cohesion policy and the use of structural funds; territorial policies; the maintenance of ecosystem functions and their distribution; and ecosystem accounting. The report acknowledges that the European 2010 target will not be met.

The EU 2010 Biodiversity Baseline ([EEA Technical report No 12/2010](#)) concluded that the serious and continuing loss of Europe's biodiversity reflects the continuing decline in the ability of ecosystems to sustain their natural production capacity and perform regulating functions. Just 17 % of habitats and species were in favourable condition: marine mammals 25%; amphibians 22%; reptiles 21%; dragonflies 16%; terrestrial mammals 15%; birds 12%; butterflies 7%. Continued increase in land abandonment, urban sprawl and other artificial infrastructures was apparent, with nearly 30% of EU land being highly fragmented.

United Kingdom

The UK Biodiversity Indicators Working Group concluded a review of indicators in 2005 by recommending a suite of 18 UK headline indicators (subdivided into 32 measures) aligned with the CBD framework (**Annex 1, column 4**).

Of 33 assessments in the UK assessment, [UK Biodiversity Indicators 2010](#), 15 (46%) showed improvement since 2000, and nine (27%) showed improvement over the longer term. Those showing improvement since 2000 included bat populations, UK Biodiversity Action Plan priority species, the extent of protected areas, the proportion of woodland under certified management, sustainable fisheries, biological river quality, and expenditure on both UK and global biodiversity. Those showing long-term deterioration included populations of farmland birds and woodland birds, populations of specialist butterflies, bat populations and plant diversity (in woodlands, grasslands and boundary habitats).

Scotland

Scotland has a distinctive biogeography and political identity, with its own biodiversity strategy and indicators associated with it. [Scotland's Biodiversity: It's in Your Hands](#), published in 2004, presented a 25-year vision and framework for action to protect Scotland's biodiversity. The Strategy aims *"to conserve biodiversity for the health, enjoyment and well being of the people of Scotland now and in the future"*, through five key objectives:

1. **Species and habitats:** To halt the loss of biodiversity and continue to reverse previous losses through targeted action for species and habitats.
2. **People:** To increase awareness, understanding and enjoyment of biodiversity, and engage many more people in its conservation and enhancement.
3. **Landscapes and ecosystems:** To restore and enhance biodiversity in all our urban, rural and marine environments through better planning, design and practice.
4. **Integration and co-ordination:** To develop an effective management framework that ensures biodiversity is taken into account in all decision making.
5. **Knowledge:** To ensure that the best new and existing knowledge on biodiversity is available to all policy makers and practitioners.

The Nature Conservation (Scotland) Act 2004 gave Scotland's Biodiversity Strategy statutory force and established a biodiversity duty, requiring public bodies in Scotland to take biodiversity into account in their activities. It linked the duty to a list of species and habitats considered to be of principal importance for the purpose of biodiversity conservation in Scotland – the [Scottish Biodiversity List](#).

The four key components of measuring progress are as follows:

1. 2008 biodiversity reporting – Scotland's contribution to the UK assessment;
2. Scotland's biodiversity indicators;
3. Site condition monitoring outcomes; and
4. Progress with Scotland's 2010 biodiversity targets.

11.1 Scotland's contribution to the UK assessment

Summary results for Scotland's five ecosystems, itemised below, are based on the conservation status of habitats and species in Scotland which have been identified for priority biodiversity action throughout the UK. By definition they are vulnerable and declining.

Terminology

The appraisal is based on a comparison of results for Scotland in the 2005 and 2008 UK reporting rounds. A **'better'** result means that fewer habitats or species were reported to be declining in 2008 than in 2005 (not that all declines had been arrested). Conversely, a **'worse'** result means that more were reported to be declining in 2008 than in 2005. An **'unchanged'** result means that the assessments in 2005 and 2008 were the same, and a **'divergent'** one means that both improvement and deterioration were evident.

The summary below excludes results where there was no clear trend but full details are shown within the chapters.

Coastal and marine

- The appraisal of 25 priority habitats (based on six matching assessments in 2005 and 2008) is **divergent** – with positive and negative elements. Of eight habitats assessed in 2008, those that were stable (**51%**) exceeded those declining (**38%**).
- The appraisal of 136 priority species (based on 12 matching assessments in 2005 and 2008) is **better** – those that were stable or increasing rose from 59% to 66%. Of 28 assessed in 2008, those that were stable (**41%**) exceeded those declining (**12%**).

Lowland and farmland

- The appraisal of 10 priority habitats (based on eight matching assessments in 2005 and 2008) is **unchanged**. However, of the eight assessments in 2008, those that were declining (**63%**) exceeded those that were stable or increasing (**39%**).
- The appraisal of 108 priority species (based on seven matching assessments in 2005 and 2008) is **divergent** (although positives outweighed the negative elements). Of 16 assessed in 2008, the number that were stable or increasing (**32%**) was the same as those in decline (**32%**).

Fresh water and wetland

- The appraisal of nine priority habitats (based on five matching assessments in 2005 and 2008) is **unchanged**. Of the five assessed in 2008, the number that were stable (**60%**) was the greater than those in decline (**40%**).

- The appraisal of 75 priority species (based on 19 matching assessments in 2005 and 2008) is **unchanged**. Of 32 species assessed in 2008, the number that were stable or increasing (**41%**) exceeded the number in decline (**25%**).

Woodland

- The appraisal of seven priority habitats (based on six matching assessments in 2005 and 2008) is **better**. All habitats assessed in 2008 were stable or increasing.
- The appraisal of 170 priority species (based on 24 matching assessments in 2005 and 2008) is **divergent** (positive and negative elements). Of 31 species assessed in 2008, the number stable or increasing (**45%**) exceeded the number declining or lost (**28%**).

Upland

- The appraisal of eight priority habitats (based on four matching assessments in 2005 and 2008) is **better**. All of the assessed habitats were declining (slowing) in 2005, whereas one had become stable by 2008.
- The trend for 122 priority species (based on 13 matching assessments in 2005 and 2008) is **unchanged**. Among 13 species assessed in 2008, the proportion that were stable (**84%**) exceeded those that were declining (**8%**).

Scotland overall

- The overall appraisal of 39 priority habitats assessed in 2005 and again in 2008, is **better**. Among 41 habitats assessed in 2008, the proportion that were stable or increasing (**41%**) exceeded those declining (**31%**).
- The overall appraisal of 181 priority species assessed in 2005 and again in 2008 is **divergent**. Among 230 species assessed in 2008, the proportion that were stable or increasing (**32%**) exceeded those declining or lost (**15%**).

11.2 Scotland's Biodiversity Indicators

The Scotland approach, as for the UK, is consistent with the global and European framework for assessing progress (illustrated in **Annex 1**).

Following a review and public consultation, in May 2004 the Indicators Working Group of the Scottish Biodiversity Forum proposed a suite of **22 biodiversity indicators** for **Scotland's Biodiversity Strategy (Annex 1, column 5)**. First **published by the Scottish Government** in November 2007, they are now maintained and updated by **Scottish Natural Heritage**. Correspondence between the Scottish and UK suite is close, with additional indicators on otter range (restoration of natural potential), marine plankton (ecosystem dynamics) and estuarine fish (restoration of natural potential), together with greenspace and aspects of awareness and involvement.

As well as being an integral part of the UK assessment, Scotland has a distinctive biogeography and political identity, with a [biodiversity strategy](#) and [indicators](#) associated with it⁶. The indicator framework is summarised in **Annex 1**. Among the 22 biodiversity indicators for Scotland, first published in 2007, 17 describe wildlife trends:

Increased / positive trends

5. Between 1994 and 2008, 50 of 65 terrestrial breeding bird species in Scotland increased in abundance, by 31% overall. Woodland birds increased by 64%; farmland birds by 26%; and upland birds remained unchanged.
6. Wintering waterbird numbers (38 species) peaked at 120% in 1996/97 and remained relatively stable prior to declining in recent winters. The recent decline may suggest that waterbirds are becoming less reliant on the security of overwintering in Scotland, and therefore less abundant, as mild winters become commoner on continental Europe. Nevertheless, in 2006/07 the indicator was 107% of the 1975/76 baseline value. Goose numbers (6 species) increased to 311% in the winter of 2003/04, before falling back to 294% in 2006/07; wildfowl numbers (15 species) have remained relatively stable at 99% in 2006/07; wader numbers (13 species) peaked at 109% in 1996/97 but then declined to 78% in 2006/07.
7. Habitats and species are notified for their national or international importance on 1,451 protected areas, covering around 12% of Scotland. By October 2010:
 - 62% of 2,971 assessed habitat features (inc. 601 geological) were in favourable condition; 7% were unfavourable recovering; and 31% were unfavourable.
 - 70% of 370 species in 2,093 assessed populations were in favourable condition; 3% were unfavourable recovering; and 27% were unfavourable.
 - When newly-established remedial action is taken into account, 77% of notified habitats and species are in favourable / recovering condition⁷.
8. Environmental improvements have reduced air, land and water pollution, allowing wildlife to re-colonise parts of Scotland that had become degraded by industrialisation and dereliction. By 2005 fish diversity was being restored in the catchments and estuaries of the Forth and Clyde. Otter occupancy rose from 57% of Scotland in 1979 to 92% in 2004.

Baseline assessments

⁶ The indicators were first published in 2007 and are maintained and updated on the [SNH web site](#) (see <http://www.snh.gov.uk/publications-data-and-research/trends/scotlands-indicators/>).

⁷ Results elsewhere in this report incorporate this adjustment (i.e. to overcome the time-lag between assessments, as does the *National Indicator*), as well as the latest survey results and revisions to the number of notified features on SSSI under the Nature Conservation (Scotland) Act 2004 review. Indicators [S10](#) (notified species) and [S11](#) (notified habitats) on the SNH website are updated in March and so may not match exactly with the latest updated figures here.

Habitats and species that are strongly in decline or especially vulnerable have been identified for targeted action and are referred to as biodiversity 'priority' habitats and species. Appreciable progress is being made:

4. Of the 39 priority habitats in Scotland, six (15%) were increasing; 11 (28%) were stable; and 13 (33%) were declining. For the remainder, the trend was unknown for eight and unclear for one.
5. Of the 197 priority species in Scotland, nine (5%) were increasing / probably increasing; 65 (33%) were stable / probably stable; and 43 (22%) were declining. For the remainder, the trend for 14 was unclear and for 63 was unknown.
6. Components of woodland (natural and plantation) diversity sampled during 1995-1999 were as follows: mean shrub layer cover was 17% in areas with an upper canopy greater than 5m high; mean number of trees and shrub species (native and non-native) was 2.2 / 0.25ha; mean volume of deadwood (fallen and standing) was 4.4 m³ per ha; total woodland in old-growth stage was 4.8% (old-growth conifers pre-1901; broadleaves pre-1861).

Fluctuating

3. Marine fishing places pressure on marine diversity in a number of ways – by reducing the abundance and average size of target stocks; in-turn affecting species that depend on them for food; and physical impacts on seabed communities. Conservation of commercial fish stocks in the sea is important both to the economy and to the biodiversity of the seas around Scotland. Eleven key commercial fish stocks are assessed annually, of which six were reported to be at full reproductive capacity, i.e. not in danger of collapse, in 2007.
4. Moth abundance among 185 of the commoner species fluctuated between 1975 and 2004. Emerging evidence from the [Rothamstead Insect Survey](#) indicates long-term declines among common moth species in Britain.

Divergent trends

3. Among marine plankton: cool water *Calanus finmarchicus* had declined to just 8% of its 1958 abundance by 2007; *C. helgolandicus*, a warmer water species, increased to 281%; total *Calanus* abundance declined to 56%; decapod larvae increased to 117%; phytoplankton abundance increased to 152%.
4. Butterfly trends were stable between 1979 and 2007. Prior to the mid-1980s, butterfly species that are restricted to specific and often isolated habitats decreased to 48% of their 1979 abundance, but have been stable since.

Decreased / negative trends

4. Scotland holds internationally important numbers of breeding seabirds. Against a marked [increase since 1970 in the UK](#), the numbers of breeding seabirds and the numbers of chicks produced each year had been in decline since 1992, although appeared to stabilise between 2007 and 2009.

5. The majority (84%) of 867 non-native species for which comparative records of geographical distribution were available in 2004, showed no change. However, 14% had increased compared with 2% that decreased.
6. According to the [Countryside Survey](#), vascular plant diversity fell by nearly 10% between 1998 and 2007. Competitive plant species increased, as did plant species associated with wet and with shady conditions. Species tolerant of harsh environments (such as low nutrient soils) and those associated with open, disturbed conditions (ruderals) decreased. Species associated with more fertile conditions also decreased.

People and biodiversity

Among the five indicators that reflect people's engagement with biodiversity:

- The composition of greenspace in built-up areas showed little overall change (2007-2009);
- the number of adults in Scotland visiting the outdoors annually remained at around 78% (2003-2007);
- in a survey of attitudes to biodiversity in 2006 and 2009, around 80% of adults in Scotland responded positively to questions of interest in, relevance of, and concern for Scotland's biodiversity;
- involvement in biodiversity conservation (2006-2008) and membership of biodiversity NGOs (2007-2009) increased.

The 22 biodiversity indicators for Scotland, together with seven supplementary natural heritage indicators and three National Indicators from the National Performance Framework, are [published on the SNH web site](#). They form a vital part of the evidence base for reporting on the state of biodiversity during International Biodiversity Year. Overall they show a slowing of deterioration and many improvements. Increases among 12⁸ of the 32 indicators, such as for terrestrial breeding birds, point to improvements in Scotland's biodiversity.

Among the three National Indicators, the index of abundance of terrestrial breeding birds showed an increase in the mean index for 65 terrestrial breeding bird species to 131 in 2008 from 127 in 2007 and from a baseline of 100 in 1994. Since 1994, woodland bird abundance increased by 64%; farmland bird abundance increased by 26%; and upland bird abundance has shown no overall change. The terrestrial breeding bird trend in [Scotland](#) is relatively favourable compared to trends for the [UK](#) as a whole and more widely across [Europe](#).

However, indicators are not selected just to convey good news. An overview of trends for the 32 indicators (summarised in **Table 11.1**, below) follows: baseline established (5); biological events occurring earlier in the season (1); little/no change (3); fluctuating trend (2); divergent trend (3); increase pointing to positive outcomes (12); increase pointing to negative outcomes, i.e. for invasive non-native species (1); increase in built development and its visibility in the landscape (2); decreased / deteriorated (3).

⁸ Note that the three National Indicators have close counterparts among the Biodiversity Indicators.

Scotland's biodiversity indicators have undergone continuous improvement since they were first published in 2007, and notably in three main ways: a) the quantity and quality of the data; b) the rigour of statistical analysis; and c) the speed at which results are made available. They are included in the global tracking of progress by the [2010 Biodiversity Indicator Partnership](#).

Table 11.1
Natural Heritage Indicators 2010

Key

Increased	↑	State	S
Divergent	⇕	Engagement	E
Fluctuated	↔	Broader Natural Heritage	N
No change	●	National Performance Framework	NP
Earlier	←		
Later	→		
Baseline	□		
No data	○		

#	Policy	Status	Date		Trend
			start	finish	
Scotland's Biodiversity					
S1	BAP priority species	37% increasing / stable	2008	2008	□
S2	BAP priority habitats	43% increasing / stable	2008	2008	□
S3	Terrestrial breeding birds	31% increase	1994	2008	↑
S4	Wintering waterbirds	7% increase	1975	2007	↑
S5	Breeding seabirds	28% decline	1986	2009	↓
S6	Vascular plant diversity	10% decline	1998	2007	↓
S7	Woodland diversity	17% shrub cover	1995	1999	□
S8	Terrestrial insect abundance – butterflies	Divergent	1979	2007	⇕
S9	Terrestrial insect abundance – moths	Fluctuating	1975	2004	↔
S10	Notified species in favourable condition	71% favourable	2009	2009	
S11	Notified habitats in favourable condition	62% favourable	2009	2009	↑
S12	Otter	92% occupancy	1979	2004	↑
S13	Freshwater macroinvertebrates	27 families average	1981	2008	↑
S14	Marine plankton	Divergent	1958	2007	⇕
S15	Estuarine fish diversity	Status being restored	1977	2005	↑
S16	Marine fish at full reproductive capacity	55% at capacity	1998	2008	↔
S17	Invasive non-native species	14% increased	1950s	2001	↑
E1	Attitudes to biodiversity	> 70% interested & care	2006	2009	↓
E2	Green space	25% green space	2007	2009	⇕
E3	Visits to the outdoors	78% in the last year	2005	2008	●
E4	Involvement in biodiversity conservation	increase	2005	2008	↑
E5	Membership of biodiversity NGOs	increase	2007	2009	↑
N1	Information Provision	4.7 million records	2000	2007	↑
N2	Built development	66% of 1km squares contain development	2005	2008	↑
N3	Visual influence of built development	Increased to 69% area	2002	2008	↑
N4	Timing of seasonal events	Earlier by differing rates	1958	2006	←
N5	River quality	Excellent increased to 31%	1999	2006	↑
N6	Tourism	92% for scenery	2006	2007	↑
N7	Land under conservation management	63% of land area covered	2008	2008	□
NP	Biodiversity: increase the index of abundance of terrestrial breeding birds				↑
NP	Increase the proportion of adults making one or more visits to the outdoors per week				●
NP	Increase to 95% the proportion of protected nature sites in favourable condition				●

11.3 Site condition monitoring outcomes

Site-based conservation of nationally and internationally important habitats, species and geological features is undertaken through a network of 1,451 protected areas (Sites of Special Scientific Interest, Ramsar, and Special Areas of Conservation). The extent of protected areas exceeds one million hectares, or about 12% of Scotland.

Some 2,370 habitat and 601 geological features assessed for condition include blanket bogs of the Flow Country; montane habitats of the Cairngorm mountains, and ancient rock formations at Knockan Crag. Their condition by October 2010⁹ was as follows:

- 55% of habitat features were in favourable condition; 17% were in unfavourable recovering; and 27% were unfavourable.
- 99% of marine and 83% of coastal features were favourable/unfavourable recovering.
- 78% of freshwater and 76% of wetland features were favourable/unfavourable recovering.
- 66% of upland, 65% of woodland, 81% of lowland heathland and 65% of lowland grassland features were favourable/unfavourable recovering.
- 96% of geological features were favourable/unfavourable recovering.

Approximately 370 species are notified on protected areas in Scotland. Species are notified for reasons such as rarity (e.g. the great crested newt, which has declined across Europe), or international importance (e.g. lichens of the west coast of Scotland, which are unrivalled elsewhere in Europe). Their condition was assessed from 2,093 monitoring observations of individual species or species assemblages. By October 2010 their condition was as follows:

- 70% of species populations were recorded as favourable and 6% were unfavourable recovering; 24% of species populations were in an unfavourable condition.
- The percentage of species that were favourable/unfavourable recovering in the different categories was: 98% of land mammals; 100% of amphibians, 97% of dragonflies; 93% of marine mammals; 85% of fish; 84% of invertebrates; 74% of birds; 96% of butterflies; 81% of non-vascular plants and 57% of vascular plants.
- Conversely, 43% of vascular plants; 19% of non vascular plants; 16% of birds; 16% of invertebrates; 15% of fish; 7% of marine mammals and 4% of dragonflies were in an unfavourable condition.

A summary of condition assessments of habitats and species within protected areas for the five ecosystems by October 2010 is as follows:

- Coastal and marine – 426 assessments; **86%** favourable or recovering.
- Lowland and farmland – 160 assessments; **68%** favourable or recovering.
- Fresh water and wetland – 553 assessments; **77%** favourable or recovering.
- Woodland – 464 assessments; **66%** favourable or recovering.
- Upland – 767 assessments; **66%** favourable or recovering.

⁹ Indicators [S10](#) (notified species) and [S11](#) (notified habitats) on the SNH website are updated in March and so may not match exactly with the latest updated figures here.

Overall, 73% of notified habitats, 76% of notified species and 96% of earth science interests were in favourable / recovering condition.

11.4 Progress with Scotland's 2010 biodiversity targets

In May 2006 the European Commission released a Communication which set out an ambitious policy approach to halting the loss of biodiversity by 2010. In particular 'Halting the loss of biodiversity by 2010 – and beyond' provided an EU Action Plan which proposed concrete measures and outlined the responsibilities of EU institutions and Member States, respectively. It also specified indicators to monitor progress, and a timetable for evaluations. It spelt out what needs to be done to halt biodiversity loss in the EU and to meet the international commitments to reduce biodiversity loss worldwide. It also created an advisory mechanism to help decision-makers make better use of existing knowledge. Specifically the Communication expressed the 2010 target through 10 priority objectives and a series of targets and actions. In addition the communication listed 4 supporting measures and targets for monitoring, evaluation and review. This EU Action Plan was used as the basis for setting out the relevant targets for Scotland for 2010 and beyond.

Scotland's 2010 biodiversity targets underpin the high level target to halt the loss of biodiversity by 2010. Based on the European Biodiversity Action Plan framework and adopted by the Scottish Biodiversity Committee in March 2008, eight priority objectives, four supporting measures and 37 targets for action have been specified for Scotland.

At the end of 2010 progress against the 37 targets is detailed in **Annex 2** and summarised as follows:

Status of actions		Progress at end of 2010
on target	green	22
room for improvement	amber	9
not on target	red	6

- 22 actions (59%) were on target, e.g. 'principal pollutant pressures on terrestrial and freshwater biodiversity substantially reduced by 2010'. Regulations to control point source pollution from industry and diffuse pollution from agriculture are implemented by SEPA.
- 9 targets (24%) had room for improvement, e.g. 'climate change adaptation and mitigation measures'. Recently-introduced legislation and action plans will help to address this but will take time to deliver significant action on the ground.
- 6 actions (16%) were not on target, e.g. 'reducing the impact of invasive non-native species': 14% of non-native species had increased in range while only 2% had decreased.

Exception reporting on the 6 'red' targets is given below:

- **Resilience of protected areas network:** Progress with bringing protected sites into favourable condition slowed, but action is being taken to address this through Scotland's Rural Development Programme.

- **Conservation status of priority (strongly declining / vulnerable) species:** Targeted action is underway to improve the conservation status of priority species.
- **Fish stocks producing maximum sustainable yield:** The state of fish stocks need to be taken more fully into account in fisheries negotiations.
- **Impact of fisheries on non- target species and habitats:** breeding seabirds in the North Sea were impacted by sandeel fisheries in the 1990s. Changes in discarding rates by fisheries have had impacts on scavenging seabirds and indirect impacts on other seabirds due to prey switching by great skuas and large gulls. Work is ongoing to assess the impacts of scallop dredging on habitats of European importance.
- **Reducing the impact of Invasive Non-Native Species (INNS):** The Wildlife and Natural Environment Bill introduces legislation aimed at strengthening and enhancing the prevention and control of INNS.
- **Global annual mean surface temperatures rise not more than 2°C:** A temperature rise of 2°C, widely accepted as the threshold beyond which climate change implications become especially serious, seems increasingly likely.

Progress with Scotland's Biodiversity Strategy Implementation Plans

Some 178 actions are scheduled for completion by the end of 2010. Of these 140 (79%) are on track and 26 (15%) are behind schedule (**Annex 3**). The Biodiversity Action Coordination Group is satisfied that the working groups are taking adequate steps to bring the actions that are behind schedule back on track. The remaining 15 (8%) are actions that have been superseded or abandoned due to lack of funding.

11.4 Conclusion

Very considerable progress has been made by many people and organisations that care about Scotland's biodiversity. Biodiversity loss has been slowed in recent years where targeted action has been applied.

However, Scotland's biodiversity indicators, the condition of notified habitats and species on protected areas, and progress towards meeting Scotland's biodiversity targets demonstrate that biodiversity loss has not yet been halted and will require renewed and sustained effort over a longer period.

A major challenge to be faced in the years ahead will be climate change, with profound implications for biodiversity in Scotland. Ecosystems and their component species may be affected by altered weather patterns and growing seasons. The ranges of individual species are likely to change, while some of those restricted to particular habitats, such as on mountain tops, may decline or disappear from Scotland altogether. Climate change and the needs of modern life give greater urgency to actions which are required to achieve the aims of Scotland's Biodiversity Strategy.

Scotland's Biodiversity Strategy goes beyond halting the loss of biodiversity, towards restoring habitats and species to a resilient state as well. Ecosystems that function naturally are better able to retain the diversity of wildlife that makes Scotland a special place to live in – supporting livelihoods such as in farming, fishing and tourism; safeguarding the productivity of land and surrounding seas; securing clean water and controlling flooding; and making urban life more enjoyable and healthy.

Scotland has played an active part in stemming biodiversity loss. It's [Biodiversity Strategy](#), published in 2004, is a 25-year framework for action. It recognises the urgency of the task to halt biodiversity loss and that action needs to be sustained in order to restore it. International Year of Biodiversity 2010 has been an important milestone – much has been accomplished, more remains to be done. The account here acknowledges what has been achieved and will help to set Scotland's course into the future.

Annex 1 – 2010 Indicator Framework

1 Focal Area	2 Global – CBD	3 European Biodiversity Indicators (SEBI 2010)	4 UK Biodiversity Indicators	5 Scotland	6 Natural heritage
1 Status and trends of the components of biological diversity	1 Trends in abundance and distribution of selected species	1. Abundance and distribution of selected species (a) common birds; (b) butterflies	1. Trends in populations of wild birds (a) farmland birds; (b) woodland birds; (c) waterbirds; (d) seabirds; (e) wintering waterbirds	S3 Abundance of Terrestrial Breeding Birds	
			S4 Abundance of Wintering Waterbirds		
			S5 Abundance of Breeding Seabirds		
			1b. Trends in populations of butterflies (a) habitat specialists; (b) wider countryside species	S8 Terrestrial Insect Abundance – Butterflies	
			S9 Terrestrial Insect Abundance – Moths		
			1c. Trends in populations of terrestrial mammals (a) bats	S12 Status of Otters in Freshwater Habitats	
			S13 Marine Plankton		
			S15 Estuarine Fish		

1 Focal Area	2 Global – CBD	3 European Biodiversity Indicators (SEBI 2010)	4 UK Biodiversity Indicators	5 Scotland	6 Natural heritage
			2. Plant diversity in the wider countryside (a) open habitats; (b) woodlands; (c) boundary habitats	S6 Vascular plant diversity S7 Woodland Diversity Indicator	
	2 Change in status of threatened species	2. Red list index for European Species 3. Species of European Interest	3. Status of BAP Priority Species	S1 Status of BAP Priority Species	
	3 Trends in extent of selected biomes, ecosystems, and habitats	4. Ecosystem coverage 5. Habitats of European Interest	4. Status of BAP Priority Habitats	S2 Status of BAP Priority Habitats	
	4 Trends in genetic diversity of domesticated animals, cultivated plants, and fish species of major socioeconomic importance	6. Livestock genetic diversity	5. Trends in genetic diversity of farm animals (a) number of breeding females (b) number of rare breeds		

1 Focal Area	2 Global – CBD	3 European Biodiversity Indicators (SEBI 2010)	4 UK Biodiversity Indicators	5 Scotland	6 Natural heritage
	5 Coverage of protected areas	7. Nationally designated protected areas	6 . Extent and condition of protected areas (a) Extent of SACs, SPAs and SSSI/ASSIs; (b) Proportion of features of SACs and SPAs in favourable condition.	S10 Notified Species in Favourable Condition	
		8. Sites designated under EU Habitats and Birds Directive		S11 Notified Habitats in Favourable Condition	
2 Sustainable use	6 Area of forest, agricultural and aquaculture ecosystems under sustainable management	17. Forest: growing stock, increment and fellings	7. Proportion of woodland area under certified management		1 Positive management
		18. Forest: deadwood			
		19. Agriculture: nitrogen balance	20. Agriculture: area under management practices potentially supporting biodiversity		

1 Focal Area	2 Global – CBD	3 European Biodiversity Indicators (SEBI 2010)	4 UK Biodiversity Indicators	5 Scotland	6 Natural heritage
	7 Ecological footprint and related concepts 8 Proportion of products derived from sustainable sources	21. Fisheries: European commercial fish stocks 22. Aquaculture: effluent water quality from fin-fish farms 23. Ecological footprint of European Countries	9. Proportion of commercially exploited fish stocks around the UK harvested sustainably.	S16 Marine fish stocks at full reproductive capacity	
3 Threats to biodiversity	9 Nitrogen deposition 10 Trends in invasive alien species	9. Critical load exceedence for nitrogen 10. Invasive alien species in Europe	10. Ecological impacts of air pollution (a) area affected by acidity; (b) area affected by nitrogen 11. <i>Impacts of invasive species (a) Number of invasive alien species; (b) Costs of invasive alien species (proposed)</i>	S17 Non-Native Species: Terrestrial, Freshwater and Marine Environments	

1 Focal Area	2 Global – CBD	3 European Biodiversity Indicators (SEBI 2010)	4 UK Biodiversity Indicators	5 Scotland	6 Natural heritage
		11. Occurrence of temperature sensitive species	12. Timing of biological events		2 Timing of biological events
4 Ecosystem integrity and ecosystem goods and services	11 Marine Trophic Index	12. Marine Trophic Index of European Seas	13. <i>Marine trophic index</i>		
		15. Nutrients in transitional, coastal and marine waters			
	12 Trophic integrity of other ecosystems		14. Habitat networks		4 Habitat networks
	13 Connectivity / fragmentation of ecosystems	13. Fragmentation of natural and semi-natural areas	15. Rivers of good biological quality		5 Water quality of freshwater ecosystems
	14 Incidence of human-induced ecosystem failure	14. Fragmentation of river systems			
	15 Water quality of freshwater ecosystems	16. Freshwater quality			

1 Focal Area	2 Global – CBD	3 European Biodiversity Indicators (SEBI 2010)	4 UK Biodiversity Indicators	5 Scotland	6 Natural heritage
	16 Health and well-being of communities who depend directly on local ecosystem goods and services 17 Biodiversity for food and medicine				6 Health & wellbeing (under development)
5 Status of access and benefit sharing	18 Indicator of access and benefit-sharing	24. Patent applications based on genetic resources.		E2 Extent and composition of greenspace	7 Natural heritage tourism 8 Built development

1 Focal Area	2 Global – CBD	3 European Biodiversity Indicators (SEBI 2010)	4 UK Biodiversity Indicators	5 Scotland	6 Natural heritage
6 Status of resource transfers and use	19 Official development assistance provided in support of the Convention 20 Indicator of technology transfer	25. Financing biodiversity management	16. Public sector environmental protection expenditure on biodiversity in the UK 17. UK Government funding for conservation of global biodiversity		
7 Status of traditional knowledge, innovations and Practices	21 Status and trends of linguistic diversity and numbers of speakers of indigenous languages	26. Public awareness		E1 Attitudes to biodiversity	

1 Focal Area	2 Global – CBD	3 European Biodiversity Indicators (SEBI 2010)	4 UK Biodiversity Indicators	5 Scotland	6 Natural heritage
	22 Other indicator of the status of indigenous and traditional knowledge		18. Volunteer time spent in conservation and number of people volunteering for conservation activity	E3 Visits to the outdoors E4 Involvement in biodiversity conservation E5 Membership of biodiversity NGOs	9 Information delivery

Annex 2 Scotland's 2010 Biodiversity Targets

Scotland's implementation of the [European Biodiversity Action Plan](#) to halt the loss of biodiversity by 2010

Red	Unacceptable
Amber	Room for improvement
Green	Acceptable

TARGET		Summary of progress	Progress by Dec 2010	Comments
-				
- A. The ten priority objectives				
- Policy Area 1: Biodiversity In Scotland				
- 1 Objective 1: To safeguard Scotland's most important habitats and species.				
Headline Target: Biodiversity loss of most important habitats and species halted by 2010, these habitats and species showing substantial recovery by 2013.				
A1.1	Natura 2000 network established, safeguarded, designated and under effective conservation management by 2010, 2012 in marine.	Natura Site selection is on target for SACs and SPAs. The net area under SACs and SPAs is approximately 15% of the land area of Scotland (SNH). 75 Natura Sites with a marine component cover 540,000 hectares of sea.	Green	Six new SPAs for golden eagles classified in 2010. Marine extensions put in place for 31 seabird SPAs.

TARGET		Summary of progress	Progress by Dec 2010	Comments
A1.2	Sufficiency, coherence, connectivity and resilience of the protected areas network in Scotland substantially enhanced by 2010 and further enhanced by 2013 (cf objective 9, target 9.4) .	Although, overall the condition of protected areas continues to improve, the target for 95% of special features to be in favourable condition has not been met. 78% of features were in favourable condition or recovering at the end of March 2010 (National Performance Framework).	Red	During 2009, 199 unfavourable features were changed to recovering due to management actions but these gains were cancelled out by a similar number of seabird populations were assessed as unfavourable. Action is being taken to increase the contribution of SRDP towards the favourable condition target. During 2010, Forest Research will assess the degree of fragmentation of the designated site network.
A1.3	No priority species ("old" -pre June 2007 - UK priority list that naturally occur in Scotland) in worsening conservation status by 2010; majority of priority species ("new" -post June 2007 - UK priority list that naturally occur in Scotland) in, or moving towards, favourable conservation status by 2013.	In the 2008 UKBAP reporting round, 42 species were reported as declining in Scotland. For red squirrel and pine hoverfly the decline was accelerating.	Red	In most cases the rate of decline is slowing and there are conservation plans underway for many of these species. However, the decline will not be halted by 2010.
2 Objective 2: To conserve and restore biodiversity and ecosystem services in the wider countryside.				
Headline Target: In wider countryside (terrestrial, freshwater, brackish water outside Natura 2000 network), biodiversity loss halted by 2010 and showing substantial recovery by 2013.				

TARGET		Summary of progress	Progress by Dec 2010	Comments
A2.1	Scotland has optimised use of opportunities under agricultural, rural development and forest policy to benefit biodiversity 2007-2013.	Around 69% of Scotland's rural development budget is spent on agri-environment, (SRDP 2007-2013). However, the monitoring and evaluation of the last programme failed to show evidence of an increase in biodiversity as a result of the schemes (Scott Wilson, 2009).	Amber	A review of the contribution of SRDP options to UKBAP habitat and species targets will be carried out in 2010/11. An evaluation of the biodiversity outcomes of key SRDP measures is due to start in 2010.
A2.2	Risks to soil biodiversity in Scotland substantially reduced by 2013.	Many of the actions identified in the Scottish Soil Framework (2009) will benefit soil biodiversity. Soils and below ground biodiversity to be given more consideration in the management of designated sites and as part of broader geodiversity management.	Green	There is an increasing interest in protecting high carbon soils through the Climate Change Adaptation Framework and developing Rural Landuse Strategy.
A2.3	Progress made towards 'good ecological status' of freshwaters by 2013.	River Basin Management Plans were published in Dec 2009. Proportion of water bodies in good condition or better (SEPA, 2008): Scotland RBMP = 65% Solway Tweed = 49%	Green	SEPA is implementing programmes of measures mainly through existing partnerships and funding mechanisms. In March 2010 SEPA started a new programme of work to address diffuse pollution in 14 priority catchments.

TARGET		Summary of progress	Progress by Dec 2010	Comments
A2.4	Principal pollutant pressures on terrestrial and freshwater biodiversity substantially reduced by 2010, and again by 2013.	Pollution from industrial point sources has been substantially reduced in the last 20 years. The impacts of air pollution from nitrogen and acid deposition has decrease in in last 20 years but have remained steady since 2000, (UK Biodiversity Indicators).	Green	Diffuse pollution from agriculture and urban sources are still having an adverse impact on biodiversity and water quality in some areas. See A2.3 above.
A2.5	Flood risk management plans in place and designed in such a way as to prevent and minimise biodiversity loss and optimise biodiversity gains, by 2015.	Flood Risk Management Act 2009 includes support for restoration of natural habitats, like wetlands.	Green	There is a need to ensure that benefits of biodiversity and ecosystems are incorporated into flood risk management plans by 2015
3 Objective 3: To conserve and restore biodiversity and ecosystem services in the wider marine environment.				
Headline Target: In wider marine environment (outside Natura 2000 network), biodiversity loss halted by 2010 and showing substantial recovery by 2013.				
A3.1	Substantial progress achieved by 2010 and again by 2013 towards 'good environmental status' of the marine environment.	The first State of Scotland's Sea's report (2008) presented a mixed picture for the overall status of the marine environment. Some indicators are green but others such as breeding sea birds, common seals, marine fish stocks within safe limits, marine plankton and non-native invasive species, are amber or red. Based on this limited range of indicators SNH's assessment of the 2010 target is amber.	Amber	The second State of Scotland's Seas report due in late 2010 and will provide a more comprehensive coverage than the 2008 report. The European Marine Strategy Framework Directive requires an assessment of the current state of UK seas by July 2012 and countries have agreed to develop measures aimed at achieving good environmental status by 2020.

TARGET		Summary of progress	Progress by Dec 2010	Comments
A3.2	Principal pollutant pressures on marine biodiversity substantially reduced by 2010, and again by 2013.	Levels of monitored contaminants in the open seas have decreased significantly. The main contamination problems which are identified are in part due to the legacy of the past - levels of metals in marine sediments and eutrophication of certain estuaries (Scotland's Sea, 2008).	Amber	94% of bathing waters achieved the EU mandatory standard , (Bathing Waters Report, 2009).
A3.3	Ecosystem approach to the protection of the seas in place and implying fisheries management measures no later than 2016.	The Marine Scotland Act (2010) introduced marine ecosystem objectives into national and regional marine plans. However, one measure of marine ecosystem integrity, the proportion of large fish caught in the North Sea, has declined from 15% in the early 1980s to 5% in 2000 and has fluctuated around this lower level since then.	Amber	Marine nature conservation strategy developed with 3 pillar approach. Marine Scotland is developing a set of national marine ecosystem objectives to guide the marine planning process.
A3.4	Substantially enhanced funding provided to environmentally-friendly fisheries management from 2007 onwards.	The Conservation Credits Scheme, funded through the European Fisheries Fund, makes grants available to vessels to support the cost of switching to modern gear that reduces by-catch.	Green	A licence parking scheme has recently been introduced at the cost of £8M which will significantly reduce both capacity and impact of Scotland's whitefish and nephrops fleets.
A3.5	Stock levels maintained or restored to levels that can produce maximum sustainable yield, where possible no later than 2015.	Of the 11 continental shelf finfish stocks where assessments have been made, five (45%) were not at full reproductive capacity in 2007, (Scotland's Biodiversity Indicators)	Red	In 2009, 74% of the Total Allowable Catch Scotland's key commercial fish stocks was set in line with scientific guidance. (National Performance Framework Indicator).

TARGET		Summary of progress	Progress by Dec 2010	Comments
A3.6	Impact of fisheries on non-target species and habitats progressively and substantially reduced from 2006 onwards.	Dolphins and harbour porpoises are under significant pressure from some type of fishing methods. Seabird breeding productivity has fluctuated since 2000 it has shown a decline to 58% in 2008, (Scotland's Biodiversity Indicators). Nearly 40% of breeding seabird populations on designated sites are in unfavourable condition, (SCM, March 2010).	Red	The Conservation Credit Scheme is encouraging vessels to switch gear that reduces by-catch. Declines in seabird populations in the North Sea are linked to the availability of sand eels, which in turn is impacted by climate change and commercial fishing.
A3.7	Substantially improved information and reporting on environmental integration of the Common Fisheries Policy from 2008 onwards.	Scotland is implementing an Electronic Reporting and Recording Systems for sea fisheries.	Green	Scotland is continuing to develop a an appropriate set of indicators for the marine environment (Scotland's Seas, 2008).
4 Objective 4: To reinforce compatibility of planned development with biodiversity.				
Headline Target: Planned development benefiting biodiversity, and negative impacts on biodiversity prevented and minimised or, where unavoidable, adequately compensated for, from 2006 onwards.				
A4.1	Funds contributing to sustainable development and making (directly or indirectly) a positive contribution to biodiversity, and negative impacts on biodiversity prevented or minimised or, where unavoidable, adequately compensated for, from 2006 onwards.	Although there is no expenditure specifically on biodiversity or natural environment, all structural funds programmes have integrated strategies for addressing environmental concerns. Key environmental agencies and NGOs engaged in development of programmes.	Green	All the programmes have undergone SEA process but it is too early to evaluate impacts.
A4.2	Negative impacts of plans on biodiversity prevented or minimised, and positive benefits optimised, from 2006 onwards.	SEA mechanisms in place at Plan level and environmental agencies consulted.	Green	Monitoring of effectiveness and mitigation is at an early stage.

TARGET		Summary of progress	Progress by Dec 2010	Comments
A4.3	Ecological coherence and functioning strengthened through spatial planning from 2006 onwards.	The development of ecological networks has been raised to the level of a national priority through the National Planning Framework (NPF2) and the Central Scotland Green Network. The challenge is in encouraging developers and land managers to convert opportunity maps into networks of habitats on the ground.	Amber	Forest Research has developed a GIS tool for assessing habitat fragmentation, which is being trialled in 2010. Early leaders have been Green Network Partnerships for Glasgow and the Clyde Valley and for the Lothians and Fife, planning positively for green networks across these city-regions.
A4.4	Significant increase in proportion of tourism which is ecologically sustainable by 2010 and again by 2013.	Membership of the Green Tourism Business Scheme increased by 223% between 2006 and 2010, to 2144 members.	Green	SNH has just completed a study to develop indicators for sustainable tourism in Scotland.
A4.5	not applicable to Scotland.			
A4.6	All Strategic Environmental Assessments and Environmental Impact Assessments have taken full account of biodiversity concerns (2006 onwards).	SEA mechanisms in place and Plan level, and EIA mechanisms in place at Project level and environmental agencies consulted. Monitoring of effectiveness and mitigation is at an early stage.	Green	Review of effectiveness of SEA mechanisms in 2009 has been postponed
5 Objective 5: To substantially reduce the impact on biodiversity of invasive alien species (ias) & alien genotypes.				
Headline Target: Negative impacts on biodiversity of IAS and alien genotypes prevented or minimised from 2010 onwards.				

TARGET		Summary of progress	Progress by Dec 2010	Comments
A5.1	Impact of IAS on biodiversity in the Scotland substantially reduced by 2010 and again by 2013.	The impact of invasive species in the UK has increased over the last decade in the marine and terrestrial environments but has stayed about the same for the freshwater environment, (UK biodiversity Indicators)	Red	Scotland is implementing the Invasive Non-Native Species Framework Strategy for Great Britain and proposed to introduce bold new measures under the Wildlife and Natural Environment Bill. SNH's Species Action Framework is actively addressing problems caused by mink, signal crayfish, New Zealand pygmy weed, Rhododendron ponticum, wireweed and grey squirrel.
A5.2	Impact of alien genotypes on biodiversity in the Scotland significantly reduced by 2010 and again by 2013.	Scottish Government has adopted a precautionary approach to GMOs and has imposed a moratorium on planting GM crops in Scotland.	Green	The UK Government has indicated that it may be willing to licence the used of genetically modified crops in England.
Policy Area 2: Scotland And Global Biodiversity				
6	Objective 6 is not applicable to Scotland			
7	Objective 7 is not applicable to Scotland			
8	Objective 8: To substantially reduce the impact of international trade on global biodiversity and ecosystem services.			
A8.1	Impact on biodiversity of international trade significantly reduced by 2010 and again by 2013.	The PAW Scotland partnership has been effective at raising the profile and tackling wildlife crime, including holding illegally trafficked animals.	Green	Defra is the CITES management authority in the UK and works closely with the police and the UK Border Agency to prevent illegal trafficking.
Policy Area 3: Biodiversity And Climate Change				
9	Objective 9: To support biodiversity adaptation to climate change.			

TARGET		Summary of progress		Progress by Dec 2010	Comments
Headline Target: Potential for damaging impacts, related to climate change, on Scotland's biodiversity substantially reduced by 2013.					
A9.1	8% reduction in greenhouse gas emissions achieved by 2010.	Taking emissions trading into account, Scotland's emissions have fallen by 21.2% from 1990 - meaning Scotland has reached the halfway point in achieving its 2020 Climate Change Act target of reducing emissions by 42 per cent (SG Press Release, 07/09/2010).	Green	The Climate Change (Scotland) Act 2009 introduces ambitious, world-leading legislation to reduce emissions by at least 80 per cent by 2050	
A9.2	Global annual mean surface temperature increase limited to not more than 2°C above pre-industrial levels.	The EU is committed to limiting emissions globally so that temperatures do not rise more than 2C. However, even with a global deal to keep atmospheric CO2 levels at below 450 ppm there is a 50% probability that temperature increases would exceed 2C.	Red	The Copenhagen Climate Change Conference in Dec-09 agreed that "increase in global temperature should be below 2°C" but failed to agree binding targets or a timetable for implementation. The unofficial deadline for reaching agreement is COP 16 in Dec-2010.	
A9.3	Climate change adaptation or mitigation measure from 2006 onwards delivering biodiversity benefits, and any negative impacts on biodiversity prevented or minimised, from 2006 onwards.	Scotland's Climate Change Adaptation Framework proposes adaptation strategies such as green networks, flood management, RBMPs, new soils and marine legislation. The challenge is in turning these commitments into actions on the ground.	Amber	There are numerous example where climate change mitigation projects deliver biodiversity benefits. However, further work needs to be done, for example incorporating biodiversity into flood management plans.	

TARGET		Summary of progress	Progress by Dec 2010	Comments
A9.4	Resilience of Scotland's biodiversity to climate change substantially strengthened by 2010.	SEPA/SNH/FCS launched their Climate Change Action Plans in 2009, which include measures to restore and expand natural habitats and improve ecological networks. The challenge is in encouraging developers and land managers to convert habitat network maps into actions on the ground.	Amber	These plans will: identify those habitats and species most sensitive and vulnerable to climate change impacts; determine the role of protected areas, as part of a wider ecological network; assess of the degree of habitat fragmentation; and promote the development of ecological networks.
10 Objective 10: To substantially strengthen the knowledge base for conservation and sustainable use of biodiversity in Scotland.				
A10.1	Research findings on biodiversity and ecosystem services has substantially advanced our ability to ensure conservation and sustainable use by 2010 and again by 2013.	Over £30 million was spent on biodiversity research in the UK in 2004/05. However, in 2008 Lead Partners reported that lack of research, survey or information was a significant constraint to delivery for UKBAP priority habitats and species.	Amber	Scottish Government is developing a Coordinated Agenda for Marine, Environment and Rural Affairs Science (CAMERAS), which will provide a joined-up approach to biodiversity research from 2011-2016.
B. The Four Supporting Measures				
Supporting Measure 1: Ensuring Adequate Financing For Biodiversity.				

TARGET		Summary of progress	Progress by Dec 2010	Comments
B1.1	Adequate funding provided for Natura 2000, for biodiversity outside Natura 2000, and for biodiversity research, inventory and monitoring 2007-2013.	Agri-environment spend is covered under A2.1. Biodiversity is a cross-cutting theme in the RERAD Research Strategy, annual budget ~ £50M. In the 2008 UKBAP reporting round, Lead Partners reported that problems with funding and incentives and an absence of adequate research, surveys or information were still a significant constraint to delivering action for priority habitats and species.	Amber	Whilst budgetary constraints are likely to continue, there are opportunities to influence how spend is prioritised in the next Rural Development Programme (2013-19) and research programme (2011-2016).
Supporting Measure 2: Strengthening Decision-Making For Biodiversity In Scotland.				
B2.1	Scottish vision on biodiversity and ecosystem services agreed and providing policy framework by 2010.	A long-term vision for was published in Scotland's Biodiversity: its in your hands in 2005. SNH has developed an Ecosystem Approach Framework for Scotland, which the Scottish Biodiversity Committee endorsed in March 2009	Green	The UK National Ecosystem Assessment, being developed during 2010 and due for publication in early 2011, will include a synthesis chapter for Scotland.
B2.2	New policies benefit biodiversity and ecosystem services, and their negative impact on biodiversity and ecosystem services prevented or minimised, from 2006 onwards.	Scotland is working to embed biodiversity and ecosystem services in new policies. This is reflected in the Greener objective of the National Performance Framework and the National Outcome 12 for the environment.	Green	The Scottish Biodiversity Strategy has been successful in integrating biodiversity into other policy areas. The ecosystem approach is being promoted across other policy areas, for example within the Climate Change Adaptation Framework, developing Marine Plan and Land Use

TARGET		Summary of progress	Progress by Dec 2010	Comments
				Strategy.
	Targets B2.3 and B2.4 are not applicable to Scotland.			
B2.5	Effective integration of Natura 2000, rural development, river basin management and other territorial plans and programmes in support of biodiversity achieved by 2010.	SRDP Regional Priorities and draft River Basin Management Plans address Natura 2000 and biodiversity targets. Biodiversity Indicators will be used to assess the effectiveness of these policies.	Green	Rural Priorities applications aimed at benefitting designated sites in unfavourable condition have been slow to come forward but applications aimed at benefitting biodiversity more widely have been more successful.
Supporting Measure 3: Building Partnerships For Biodiversity.				
B3.1	Key stakeholder groups actively engaged in conservation of biodiversity from 2006.	Key stakeholder groups have been actively engaged through the Scottish Biodiversity Strategy working groups and a range of sector specific fora. However, engagement with the business sector has dropped-off.	Green	Engagement with the business sector has been invigorated during 2010 with a major business and biodiversity conference held in London, the launch of the TEEB report for business and a successful business and biodiversity breakfast hosted by Scottish Ministers at RGBE.
Supporting Measure 4: Building Public Education, Awareness And Participation For Biodiversity.				

TARGET		Summary of progress		Progress by Dec 2010	Comments
B4.1	Substantial numbers of Scots are actively engaged in biodiversity conservation by 2010.	The proportion of volunteers involved in biodiversity conservation increased by 43% between 2005 and 2009 (Volunteer Development Scotland Survey, 2009) .		Green	
C. Monitoring, Evaluation And Review					
Annual Reporting					
C1.1	Annual and 3-yearly reports submitted in timely fashion to SBC and to JNCC.	Progress with the Scottish Biodiversity Strategy Implementation Plans was reported to the Scottish Parliament in 2008. Scotland has contributed in early 2009 to the 3-yearly reports: UK Report to CBD and the UKBAP Highlights Report in 2009.		Green	
Indicators					
C1.2	Indicators in place and informing policy decisions by 2010	Scotland's Biodiversity Indicators were launched by the Minister in autumn 2007.		Green	The next annual update of the Scottish Biodiversity Indicators is due for publication in November 2010
Monitoring					
C1.3	Monitoring providing adequate data flow for implementation of indicator set, for reporting on favourable conservation status, and for broader assessment of effectiveness of this Action Plan by 2010.	Surveillance is in place to provide an adequate data flow for birds, butterflies and moths, mammals, fish and vascular plants. Surveillance is adequate on designated sites for habitats, bryophytes, lichens, fungi, and other invertebrates but not generally not in the wider countryside.		Green	SNH is developing a Scottish Biodiversity Surveillance Strategy to meet the Habitats Directive reporting requirement along with wider requirements in Scotland. A business case has been submitted to the CAMERAs Board in 2010.

Annex 3a People and Communications Group

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress
1	Facilitate effective communication between LBAP Partnerships and UK BAP Lead Partners to co-ordinate actions and deliver UK/Scottish/Local biodiversity targets	1.1a	Identify key priorities for habitats and species in liaison with UK BAP Leads/Steering Groups and LBAP Partnerships and deliver a programme of Lead Partner-led events to targeted audiences over the next three years.	Ongoing	Ongoing	BIT	Superseded	Green	The need for this action has been overtaken by national work on changes in how the UKBAP is to be delivered. However subsequently to these changes, work was taken forward. The LBAP prioritisation project will provide direction for this action - see Local 1.2a. In the meantime, a LBAP conference is planned for spring 2009 at which Lead Partners will be invited to hold workshops. LBAP Network meetings are also being used to target specific species and habitats that LBAP Officers identify as being important to their Partnerships. In March 2008: workshops on ponds, wood pasture and grey partridge took place. In September 2007, workshops were held on water voles, blanket bog, lowland raised bog, lowland calcareous grassland, acid grassland.
1	Develop improved information and guidance to LBAP Partnerships on implementing UK BAP priorities.	1.2a	In association with UK BAP Lead Partners and Scottish habitat and species specialists, develop an ecologically based framework, through the LBAP & Lead Partner Link Project, to help LBAPs prioritise actions to enhance their contribution	Dec-08	2008/09	SNH	Completed	Green	This project is almost complete. Finalisation has stalled due to issues encountered with obtaining required data on species. The contractor has provided summary information on the project's prioritisation on habitats by LBAP Partnerships. The work will be complete by the end of November 2010

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			towards delivering individual UKBAP and the 2010 targets.						
1		1.2b	Develop a programme of events to communicate the findings of the LBAP & Lead Partner Link Project to LBAP Partners and raise awareness of its potential usefulness in establishing priorities for Local Biodiversity Action Plans.	Dec-09	2009/10	BIT	Behind schedule	Amber	This action is dependent on the LBAP Prioritisation/Lead Partner project which will be complete by the end of November 2010 - later than expected. As a result, the awareness raising of the final work has been delayed and will now run into 2011.

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1		1.2c	Provide guidance to businesses on how the LBAP conservation priorities (identified by the LBAP & Lead Partner Link Project at 1.2a) and corporate volunteering initiatives can help businesses meet Corporate Social Responsibility targets.	Dec-10	2010/11	BEP	Abandoned	Red	The LBAP Prioritisation project is due for completion in 2010. However, the Lead organisation for this action -Business Environment Partnership - was unsuccessful with its funding bid to keep in place a Project Officer who would have led on this action.
1	To facilitate reporting on the Biodiversity Duty and the Scottish Biodiversity Strategy in addition to that already captured through Implementation Plan reporting.	1.3a	Work with the BARS team to incorporate functionality which would allow LBAPs & Public Bodies' work to be reported in BARS against the Scottish Biodiversity Strategy objectives & the Biodiversity Duty.	Dec-08	2008/09	SNH	Completed	Green	There is already functionality within BARS that would allow recording of information by public bodies and companies. However, there is no link that would allow organisations' work to be associated with the Biodiversity Strategy's objectives or the Biodiversity Duty. In addition, although some of the functionality is already in place, the action needs to be widened to reflect the fact that further work is required to promote the use of the database by public bodies and companies.

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1	Work toward ensuring that sufficient resource is available for delivery of local species and habitat projects.	1.4a	Identify difficulties in securing funding for biodiversity projects and make recommendations to address this	Ongoing	Ongoing	BIT	On schedule	Green	This action aims to identify problems at a strategic level. Funding will be one of the issues to be covered at a LBAP conference planned for 2009 in order to identify issues in discussion with LBAP Partner organisations, statutory agencies, funders and others. May 2010 - An ongoing SNH research project to strategically review LBAP Partnerships will help to identify funding issues and make recommendations. Dec 2010 - SNH is working in partnership with Natural England and other UK countries to deliver the Saving our Magnificent Meadows project which will involve submitting bids for funding to progress grassland projects. In 2010, SNH contributed £250K of grant towards the Big Lottery Fund Scotland scheme for community wildlife projects.
1		1.4b	Develop and deliver a package of funding tools and measures that will assist LBAP Partnerships to access funding opportunities and relevant SNH training courses including developing project management and partnership working skills	Ongoing	Ongoing	SNH	On schedule	Green	This action is ongoing. A package of measures was agreed with SNH in 2007 for the LBAP Network. This comprised information bulletins on funding news and access to SNH courses on Project Management and Partnership Working. In addition, an advisory service was agreed with SNH through which LBAP Partnerships could access advice and guidance from key SNH staff on particular funding problems that arose. This advisory service is ongoing. August 2010 - SNH Joint Projects team held surgeries at the Scottish Biodiversity Forum conference on 25th August for delegates who wanted advice on specific project applications. September 2010 - SNH Joint Projects Unit staff will be attending the next LBAP Network meeting on 29th September to provide advice and guidance on making the best of funding applications, particularly those that are not specifically focussed on biodiversity. Collaborative applications (i.e. shared applications between two or more local authorities) also be discussed.

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2	LBAPs have the tools to publicise their activities and engage local people in them	2.1a	Co-ordinate Scottish Biodiversity Week in 2008, incorporating International Biodiversity Day on 22nd May.	May-08	2008/09	BIT	Completed	Green	Biodiversity Week 2008 was held between 19th and 25th of May. The Minister and SNH's Chief Scientist launched the Week. 140 events were held and advertised through the website and through national and local press and radio. The website was updated: www.snh.gov.uk/biodiversityweek , a highly successful nature photography competition was held, 20,000 bumblebee friendly seed packs were distributed to event organisers, 40,000 pamphlets advertising the Week were circulated widely. The Scotsman newspaper ran features on the Week on five consecutive days. Other national and local press coverage was achieved. International Biodiversity Day was incorporated into the publicity for the Week.
2	LBAPs have the tools to publicise their activities and engage local people in them	2.1b	Run a research contract to evaluate Scottish Biodiversity Week 2008.	Feb-09	2009/10	BIT	Completed	Green	A formal research contract was not let but an evaluation was carried out. This showed that Biodiversity Week is valued by both organisers and attendees as a way of communicating the importance of biodiversity conservation.
2	LBAPs have the tools to publicise their activities and engage local people in them	2.1c	Co-ordinate Scottish Biodiversity Week or alternative events in 2009 & 2010 based on the evaluation of Scottish Biodiversity Week 2008 and the Biodiversity Communications Strategy.	Dec-10	2010/11	BIT	Completed	Green	Biodiversity Week 2009 took place between 16th and 24th May. A successful nature photography competition was held on the theme of the "Colours of Nature". Biodiversity Week 2010 took place between the 15th and 23rd of May. 208 events took place. The nature photography competition on the theme of "Emotions" attracted 300 entries. The top 30 entries were developed into an exhibition and entered as part of Edinburgh International Fringe Festival. The exhibition will tour key cities and towns that the photographers are from in 2010 and for part of 2011.

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2	Determine the opportunities to fill practical conservation skills gaps.	2.2a	Conduct a scoping/ feasibility study to identify what conservation skills gaps exist & determine if it would be possible to develop & implement, in partnership with LBAP partners and others, an apprenticeship programme for students, to gain skills to aid their future employment prospects within nature conservation.	Jun-09	2009/10	SNH	Abandoned	Red	BTCV already run an apprenticeship scheme focussed on biodiversity skills, and this will continue into 2011. SNH is exploring the potential to continue and develop this scheme further with BTCV.
2	Increase the number of volunteers involved in delivering local and national BAP priorities	2.3a	Review, in partnership with LBAP partners, the scope for local opportunities for volunteering linked to LBAP delivery.	Dec-09	2009/10	SNH	Completed	Green	This is covered by a volunteering plan being developed by SNH in 2009/10. SNH let a contract to investigate successful approaches to volunteer involvement in LBAP delivery using Scottish based examples. The outputs to this contract included production of 12 case studies and a short report bringing together the main factors which led to successful volunteer involvement and key learning points emerging from each case study. 2011 is European Year of Volunteering and International Year of Volunteers.

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2		2.3b	Develop a toolkit to assist LBAP Partnerships to increase volunteer involvement in LBAP delivery.	Mar-09	2009/10	FEVA	Abandoned	Green	November 2010 - a toolkit is not going to be developed so this action has been abandoned. However, there has been good progress made with other, similar initiatives. Volunteer Development Scotland and the Forum for Environmental Volunteering Associations (FEVA) are the main organisations taking volunteering forward. In 2011 - the Year of Volunteering, they are planning on focussing on encouraging biological recording volunteers and to train volunteer leaders. This builds on earlier work, including a contract let by SNH to look at case studies in which LBAP partnerships were able to involve volunteers. These case studies helped to identify what worked best to attract volunteers. Volunteer Development Scotland and FEVA are offering a range of free learning opportunities, accredited and non-accredited, to be delivered across Scotland commencing September 2010. The programme of training is about "looking after your volunteers" and includes recruiting volunteers, keeping them motivated, recognising their achievements as well as learning how to evaluate the value of volunteering. The programme will be delivered by Volunteer Development Scotland at a range of venues in Edinburgh, Glasgow, Ayr, Stirling and Inverness. The Customised Award has been popular with FEVA Network organisations over the past 2 years, and 20 volunteer managers have completed it to date.
2		2.3c	Promote opportunities for participation in BAP delivery to Community and Voluntary sectors.	Ongoing	Ongoing	SNH	On schedule	Green	Included in SNH Volunteering Plan - specification developed and work scheduled for Jan - march. Promotion of BAP delivery to community and voluntary sectors is part of SNH's ongoing work on supporting environmental volunteering. SNH let a contract to explore voluntary opportunities through LBAP Partnerships and 12 case studies were developed. These will be made available on the

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									redeveloped Biodiversity Scotland website when this is redeveloped in 2011.
3	Strategically review the outcomes & effects of natural heritage advice to Planners.	3.1a	Carry out a research project to assess the effectiveness of SNH/LBAPO/Ecologist advice to Planners on natural heritage issues.	Mar-09	2009/10	SNH	Abandoned	Amber	No funding could be secured to progress this action. From 2009/10 onwards, resources have been focussed on implementing planning reform. This has resulted in the development of guidance for planners and providing more advice and guidance through the SNH website. A package of guidance and materials is being put together to help each local authority to handle more and more natural heritage issues in development management casework.
3		3.1b	Deliver training on biodiversity, the Biodiversity Toolkit being developed by ALGE and outcomes of the research at 3.1a to Planners through Sharing Good Practice events.	Ongoing	Ongoing	SNH	On schedule	Green	September 2010 - the Pilot model is now available online. A demonstration of the system was offered to delegates attending the Scottish Biodiversity Forum conference on 25th August 2010. Additional workshop sessions may be offered at the UKBAP conference on 23/24 November 2010.

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3	Encourage Local Authorities to operate a Local Site System in accordance with published Local Nature Conservation Sites guidance.	3.2a	Instigate a project to establish/enhance Local Sites systems in at least three Local Authority areas as demonstration projects.	Mar-09	2009/10	SWT	Behind schedule	Amber	Funding has been secured to begin this work. A one day seminar was held in spring 2009 to look at the progress that local authorities have made in implementing the Local Sites guidance since its publication; identify the problems they are having in using it and come to a view on what local authorities need to help them run Local Sites systems in accordance with the guidance. A further bid for funding will need to be made after the seminar to progress the project in conjunction with local authorities. A strategic approach to championing LNCS was adopted both at a national and local level by recommending their inclusion in the National Planning Framework for Scotland II (e.g. draft consultation response April 2008) and through consultation responses to Local Plans (now called Local Development Plans - e.g. influencing development planning to prevent loss of LNCSs).
4	Strategically review the role that LBAP Partnerships play in delivering biodiversity at the local level in order to inform long term funding.	4.1a	Initial assessment of LBAP successes, failures, strengths and weaknesses of LBAP Partnership work.	Mar-09	2009/10	SNH	Completed	Green	Project funding was bid for and was successful. The final report has now been received from the contractor and subject to quality assurance will be made public in late 2010.

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4	Raise awareness of how biodiversity activity at local level can be effectively supported by relevant public bodies (through commitment, resources & engagement).	4.2a	Carry out a research project to review the information and literature available to the public sector, thereby providing a gap analysis of where guidance could be improved or is missing and disseminate the findings to relevant bodies.	Mar-08	2008/09	SNIFFE R/SEPA	Completed	Green	This project was completed in autumn 2009. The recommendations included developing a one stop online portal to house biodiversity guidance. The Biodiversity Scotland website is currently considered the most appropriate vehicle for this portal. The website is being considered for redevelopment as at May 2010. In the interim, content for the SNH website is being considered. Phase 2 of the project will comprise looking at collating sources of guidance and developing guidance where this is needed.
4		4.2b	Biodiversity Duty is promoted as one example of "Learning by Example – Improving Public Sector Environmental Performance" Programme.	Ongoing	Ongoing	SG (Greener Scotland Division)	On schedule	Green	SG is working with its own departments and with external organisations to promote learning by example on the environment. The focus is on six elements - energy, water, waste, sustainable procurement, biodiversity and travel. Specific actions to promote the Biodiversity Duty has included the policy teams within SG departments writing policies on what they might deliver on the Duty for example, they have a sustainable action procurement and zero waste management plans. It is not clear how much of the policies are being taken forward. Sustainable development may also form an additional thread in the policies in the future. Update provided verbally by Judith Young, Greener Scotland Directorate 1st April 2009.

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4	Facilitate LBAP Partnerships' involvement with the Scottish Biodiversity Forum and its working groups in order to better integrate local and national biodiversity processes.	4.2c	Public Bodies environmental policies, procedures and targets are monitored annually through Environmental Performance and Public Bodies Programme (EPPB)	Ongoing	Ongoing	SG (Greener Scotland Division)	Superseded	Green	EPPB is no longer in operation - it was a process that was put in place by the previous Government. Some environmental monitoring is still carried out on an ad hoc basis when the Greener Scotland Directorate has sight of relevant info and they sometimes comment on this. But there is no structured programme. EPPB has been superseded by Learning by Example - which is the focus of attention in action 4.2b. SG is likely to have a new tool/system called EMART to gather data on performance across the wider public sector although it is not certain if it will gather biodiversity data. EMART is currently used by NHS to gather data on a range of information.
4		4.3a	Ensure that the role of Scottish Local Biodiversity Action Plan Project Officer (SLBAPPO) is carried forward through thought the work programme of the Biodiversity Implementation Team.	Ongoing	Ongoing	SNH	On schedule	Green	The role of Scottish Local Biodiversity Action Plan Project Officer is being fulfilled by Zeshan Akhter in the Biodiversity Implementation Team with the additional contribution of the BIT members and SNH as appropriate.

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5	Increase the quality & quantity of biodiversity information available to decision makers.	5.1a	Develop biological information management services where these currently don't exist but where a need is identified.	Dec-10	2010/11	SNH	Superseded	Green	This action was superseded by a petition lodged with Scottish Government ".to urge the Scottish Government to establish integrated local and national structures for collecting, analysing and sharing biological data to inform decision-making processes to benefit biodiversity." The Biodiversity Science Group (BSG) was asked by the Environment Minister to consider the issues associated with Petition PE1229, and make observations and recommendations for future action to be provided to the Petitions Committee. A sub-group of BSG met with the petitioners, National Biodiversity Network (NBN) and SNH staff, and other interested parties in a forum meeting on 22 January 2010. The group have considered the information provided in advance, on the day, and in a number of subsequent submissions in collating its report. This report made recommendations on work should happen together with an analysis of what issues were considered to arrive at these recommendations. The Minister's direction on which of these recommendations should be taken forward is currently awaited as at November 2010. SNH has launched a new Scotland's Nature mapping tool on its website. SNH has also worked with Stirling Council, LLTNPA, Clacks Council, Falkirk Council, Lothian Wildlife Information Centre, NBN and voluntary sector to establish current needs and propose sustainable model for future management and use of biological data in the Central area. A data management needs study for Glasgow & Clyde Valley was also completed in 2008.

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5	Increase the quality & quantity of biodiversity information available to decision makers.	5.1b	Support and further develop biological information management services where these do exist.	Dec-10	2010/11	SNH	Superseded	Green	This action was superseded by a petition lodged with Scottish Government to “urge the Scottish Government to establish integrated local and national structures for collecting, analysing and sharing biological data to inform decision-making processes to benefit biodiversity.” The Biodiversity Science Group (BSG) was asked by the Environment Minister to consider the issues associated with Petition PE1229, and make observations and recommendations for future action to be provided to the Petitions Committee. A sub-group of BSG met with the petitioners, National Biodiversity Network (NBN) and SNH staff, and other interested parties in a forum meeting on 22 January 2010. The group have considered the information provided in advance, on the day, and in a number of subsequent submissions in collating its report. This report made recommendations on work should happen together with an analysis of what issues were considered to arrive at these recommendations. The Minister’s direction on which of these recommendations should be taken forward is currently awaited as at November 2010.

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5		5.1c	Help existing biological information management services adapt to the changing context in which they work by assessing their business development opportunities and options.	Dec-10	2010/11	SNH	Superseded	Green	This action was superseded by a petition lodged with Scottish Government to "urge the Scottish Government to establish integrated local and national structures for collecting, analysing and sharing biological data to inform decision-making processes to benefit biodiversity." The Biodiversity Science Group (BSG) was asked by the Environment Minister to consider the issues associated with Petition PE1229, and make observations and recommendations for future action to be provided to the Petitions Committee. A sub-group of BSG met with the petitioners, National Biodiversity Network (NBN) and SNH staff, and other interested parties in a forum meeting on 22 January 2010. The group have considered the information provided in advance, on the day, and in a number of subsequent submissions in collating its report. This report made recommendations on work should happen together with an analysis of what issues were considered to arrive at these recommendations. The Minister's direction on which of these recommendations should be taken forward is currently awaited as at November 2010. In Glasgow and Clyde Valley, SNH is working with Kelvingrove LBRC to develop a business plan for service delivery to the eight local authorities in the area.
2	Raise awareness of, and influence policy related to, the health & wellbeing benefits of natural greenspaces.	2.1a	Review, collate and publish information on the links between natural greenspaces, biodiversity, and health and wellbeing, identifying the main organisations	Dec-08	2008/09	SNH	Completed	Green	This forms part of the delivery plan for the SNH Health and the Natural Heritage policy statement. http://www.snh.gov.uk/docs/A289431.pdf

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			whose activities make these links and determining their capacity to increase their delivery.						
2	Raise awareness of, and influence policy related to, the health & wellbeing benefits of natural greenspaces.	2.1b	Provide recommendations for strategic actions on promoting health and wellbeing benefits of natural greenspace by NHS Boards.	Sep-08	2008/09	SNH	Completed	Green	This forms part of the delivery plan for the SNH Health and the Natural Heritage policy statement. http://www.snh.gov.uk/docs/A289431.pdf
2	Raise awareness of, and influence policy related to, the health & wellbeing benefits of natural greenspaces.	2.1c	Develop and implement a communication plan to disseminate published information to key target audiences.	Dec-09	2009/10	BIT	On schedule	Green	This forms part of the delivery plan for the SNH Health and the natural heritage policy statement. http://www.snh.gov.uk/policy-and-guidance/policy-documents/document/?category_code=Policy&topic_id=1086

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2	Raise awareness of, and influence policy related to, the health & wellbeing benefits of natural greenspaces.	2.1d	Promote policies and action that link natural greenspaces and biodiversity to health and wellbeing to NHS Boards through meetings, consultations and other appropriate mechanisms.	Dec-10	2010/11	SG Health Department (tbc)	Superseded	Amber	SG's involvement is being secured through SNH's work on health and natural heritage which includes development of a project with NHS Health Scotland and FCS to develop NHS greenspace resources, including SGP on good practice which was held on 28 September 2010, Dundee entitled Developing NHS greenspace – health and wellbeing in hospital grounds . This was aimed at Health Board facility managers, healthcare professionals and greenspace practitioners. This focussed on good quality, accessible greenspace is good for our health and wellbeing. This event will examine current projects and new opportunities for land around hospitals and other healthcare facilities to deliver physical and mental health benefits to patients, staff and surrounding communities – for example through promoting physical activity, contact with nature and food production.
2	Expand existing programmes of work that link biodiversity and health.	2.2a	Expand the BTCV Green Gym programme to ensure that Green Gym provision is available to people in Scotland's least healthy areas.	Mar-09	2008/09	BTCV	On schedule	Green	The Green Gym programme has continued to be successful and work is continuing to expand into other areas.
2	Local Authorities Community learning and development strategies and action plans include targets and actions on biodiversity.	2.3a	Run a series of seminars to highlight opportunities for community learning about biodiversity.	Dec-10	2010/11	SNH - it is SDEN now, not SNH	On schedule	Green	Lead partner is now SDEN. SNH is a partner. Sue Atkinson at SNH is lead officer for the grant. The development of a seminar series is included in a grant to SDEN.

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2	Local Authorities Community learning and development strategies and action plans include targets and actions on biodiversity.	2.3b	Work in partnership with the Sustainable Development Education Network to include biodiversity in their work.	Dec-10	2010/11	SNH	On schedule	Green	Retain – being discussed as part of new 3-year grant to SDEN.
2	More people in urban Scotland can access places where they can learn about, and get involved in, biodiversity within 15 minutes walk from their homes.	2.4a	Develop criteria for urban 'wildspace' – where people can learn about and get involved in biodiversity.	Sep-08	2008/09	SNH	Superseded	Green	This will be linked to the review of SNH's places policy - to be commissioned in 2009.10 The Places Policy is currently out for consultation, which will end on 26th November 2010.
2	More people in urban Scotland can access places where they can learn about, and get involved in, biodiversity within 15 minutes walk from their homes.	2.4b	Identify and develop a GIS dataset of urban 'wildspace'.	Jun-09	2009/10	SNH	Superseded	Green	This will be linked to the review of SNH's places policy - currently underway (June 2010) The Places Policy is currently out for consultation which will end on 26th November 2010.
2	More people in urban Scotland can access places where they can learn about, and get	2.4c	Analyse and publish information on access to urban wildspace, and examine gaps in provision.	Dec-09	2009/10	SNH	Superseded	Green	This will be linked to the review of SNH's places policy - currently underway (June 2010). The Places Policy is currently out for consultation, which will end on 26th November 2010.

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	involved in, biodiversity within 15 minutes walk from their homes.								
2	More people in urban Scotland can access places where they can learn about, and get involved in, biodiversity within 15 minutes walk from their homes.	2.4d	Develop an approach to increasing access to urban wildspace.	Mar-10	2009/10	SNH	Superseded	Green	This will be linked to the review of SNH's places policy - currently underway (June 2010). The Places Policy is currently out for consultation which will end on 26th November 2010.
3	Promote green networks as part of national planning policy and disseminate advice on practical implementation from ongoing projects	3.1a	Ensure that SPP14 supports the development of Green Networks.	Dec-08	2008/09	SE Planning Directorate	Completed	Green	June 2010 - All SPPs are have been amalgamated into SPP1 and this does make reference to green networks
3	Promote green networks as part of national planning policy and disseminate advice on practical implementation from ongoing projects	3.1b	Ensure that NPF2 provides national spatial planning policy on this issue.	Dec-08	2008/09	SE Planning Directorate	Completed	Green	June 2010 - NPF2 makes specific reference to green networks especially the Clyde Valley Green Network and Central Scotland Green Network.

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3	Promote green networks as part of national planning policy and disseminate advice on practical implementation from ongoing projects	3.1c	Highlight green networks in relevant planning advice notes, including PAN 65.	Dec-10	2010/11	SE Planning Directorate	On schedule	Green	PAN 65 has been revised and does highlight green networks. Other planning advice notes are subject to ongoing changes in the planning system.
3	Promote green networks as part of national planning policy and disseminate advice on practical implementation from ongoing projects	3.1d	Develop technical guidance on the identification and management of multifunctional green networks from the findings of research.	Mar-08	2007/08	SNIFFER	Superseded	Green	Two studies have been completed "Urban networks for people and biodiversity – form and function" completed February 2008 and "Development of a methodology for predicting the impact of demographic change and urban development on biodiversity" completed September 08, Specific work to develop technical guidance as such as a follow-on to these has not significantly progressed. Though an initial meeting to share methods and to progress thinking in this area was held at a SNIFFER coordinated meeting in August attended by FR, SEPA, SNH, GS, GCVN, BTO. During 2010, this action has been superseded by work on the Central Scotland Green Network - which is a Scottish Government priority and one of the 12 national developments in the National Planning Framework 2.
3	Promote green networks as part of national planning policy and disseminate advice on practical implementation from ongoing projects	3.1e	Disseminate the lessons learnt associated with the development and implementation of the Glasgow and Clyde Valley Green Network – the role of habitat network modelling in guiding delivery.	August 2008/09	2008/09	Glasgow and Clyde Valley Green Network Partnership	Superseded	Green	Has been incorporated into actions Urban 3.1f and Urban 5.1c

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3	Promote green networks as part of national planning policy and disseminate advice on practical implementation from ongoing projects	3.1f	Roll out a series of events to highlight good practice for the design, delivery and management of green networks in Scotland drawing on international examples	Dec-08	2008/09	SNIFFER	Superseded	Green	This work depends on Urban 3.1d being completed and has therefore not yet been started.
4	Encourage biodiversity to be recognised by Scottish businesses as an asset to the national economy.	4.1a	Run an 8-week student placement with BEP to research & identify which mainstream and environmental award schemes biodiversity could be embedded within.	Mar-08	2007/08	BEP	Abandoned	Red	November 2010 - the People and Communication Group, through its delivery plan for 2010-2013 is taking several business-related actions forward. For example, a business & biodiversity breakfast was held in September 2010 which was attended by the Environment and Energy Ministers and a range of businesses based in central Scotland. The lead organisation for this action, Business Environment Partnership, lost its funding for the Project Officer post, which would have been responsible for taking this action forward. Therefore, the project has closed down and this action is not able to be progressed at this time.
4	Encourage biodiversity to be recognised by Scottish businesses as an asset to the national economy.	4.1b	Run a contract to contact and work with the award providers identified at action 4.1a (above) to incorporate biodiversity within awards for business such as Corporate Social Responsibility & Health and Wellbeing.	Dec-10	2010/11	BEP (tbc)	Abandoned	Red	November 2010 - the People and Communication Group, through its delivery plan for 2010-2013 is taking several business-related actions forward. For example, a business & biodiversity breakfast was held in September 2010 which was attended by the Environment and Energy Ministers and a range of businesses based in central Scotland. The lead organisation for this action, Business Environment Partnership, lost its funding for the Project Officer post which would have been responsible for taking this action forward. Therefore the project has closed down and this action is not able to be progressed at this time.

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress
4	Encourage biodiversity to be recognised by Scottish businesses as an asset to the national economy.	4.1c	Scottish Enterprise and Highlands & Islands Enterprise to promote biodiversity conservation within the business community. Awareness raising and support with conservation activity will be promoted, in particular within the Networks' "Growing Business" and "Global Connections" themes.	December 2008 Ongoing	Ongoing	Scottish Enterprise/ Highlands and Islands Enterprise	abandoned	Red	November 2010 - the People and Communication Group, through its delivery plan for 2010-2013 is taking several business-related actions forward. For example, a business & biodiversity breakfast was held in September 2010 which was attended by the Environment and Energy Ministers and a range of businesses based in central Scotland. Guidance for businesses is being developed by Scottish Enterprise and a communications plan for reaching businesses is being developed by the PCG.
4	Encourage biodiversity to be recognised by Scottish businesses as an asset to the national economy.	4.1d	Run a research project to develop and produce guidance for Scottish Enterprise and Highlands & Islands Enterprise websites on relating business and biodiversity; highlight successful case studies and information about existing award schemes and other relevant materials.	Mar-08	2007/08	SNH	Abandoned	Red	November 2010 - the People and Communication Group, through its delivery plan for 2010-2013 is taking several business-related actions forward. For example, a business & biodiversity breakfast was held in September 2010 which was attended by the Environment and Energy Ministers and a range of businesses based in central Scotland. Further discussion within SNH required to ascertain if action can be retained in implementation plan.

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress
4	Engage businesses on how to contribute to biodiversity conservation.	4.2a	Provide practical support that enables businesses to engage with biodiversity conservation and management of biodiversity at a local and national level.	Ongoing	Ongoing	BEP	Abandoned	Red	November 2010 - the People and Communication Group, through its delivery plan for 2010-2013 is taking several business-related actions forward. For example, a business & biodiversity breakfast was held in September 2010 which was attended by the Environment and Energy Ministers and a range of businesses based in central Scotland. The lead organisation for this action - the Business Environment Partnership - was unsuccessful with its funding bid to keep in place a project officer which would have worked on raising awareness of biodiversity with business. Therefore the project has closed down and this action is not able to be progressed at this time.
4	Engage businesses on how to contribute to biodiversity conservation.	4.2b	Run a contract to draft and distribute materials that demonstrate the economic benefits of biodiversity to businesses.	Mar-09	2008/09	SNH	Abandoned	Red	November 2010 - the People and Communication Group, through its delivery plan for 2010-2013 is taking several business-related actions forward. For example, a business & biodiversity breakfast was held in September 2010 which was attended by the Environment and Energy Ministers and a range of businesses based in central Scotland. Further discussion within SNH required to ascertain if action can be retained in implementation plan.
5	Planning, regeneration and development professionals understand the role, needs and scope for biodiversity in urban areas.	5.1a	Review natural heritage skills for planning authorities and produce an action plan based on the recommendations of this study to deliver CPD on biodiversity.	Dec-08	2008/09	SNH	Completed	Green	SNH has carried out a review on natural heritage planning skills. So the first part of the action is complete. Developing CPD on biodiversity is an ongoing issue. June 2010 - SNH has drafted a note to all SNH Area Managers to ask Area Managers to arrange meetings with their Planning Authorities to provide an update on SNH's new approach to planning work and to discuss what SNH can do to help them with natural heritage awareness-raising and capacity-building.

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress
5	Planning, regeneration and development professionals understand the role, needs and scope for biodiversity in urban areas.	5.1b	Review, in partnership with relevant professional organisations and training agencies, the scope to include biodiversity in the CPD programmes of development and regeneration professionals.	Mar-10	2009/10	SNH	Superseded	Amber	There is scope for a short contract within current SNH research allocations. Further discussion required within SNH. June 2010 - SNH has drafted a note to all SNH Area Managers to ask Area Managers to arrange meetings with their Planning Authorities to provide an update on SNH's new approach to planning work and to discuss what SNH can do to help them with natural heritage awareness raising and capacity building. November 2010 - this action has been superseded by the National Planning Reform. SNH is working to produce training and guidance for planners and development professionals
5	Planning, regeneration and development professionals understand the role, needs and scope for biodiversity in urban areas.	5.1c	Develop and deliver tailored training to local authority planning departments on the identification, analysis and management of urban green networks, including integrated habitat networks.	Dec-10	2010/11	SNH	On schedule	Green	Research into guidance materials on ecological networks underway. Preliminary meeting held with partners. June 2010 - a Sharing Good Practice event is being held by SNH in 2010 on this issue.
5	Explore and put into place mechanisms through which Planning students have opportunities to learn about the role of planning in natural heritage protection.	5.2a	Review the opportunities & gaps for Planning students to learn about research & application of urban design and biodiversity, for example with respect to integrated habitat networks and	Apr-09	2009/10	BIT	Behind schedule	Amber	A lot of this analysis has already been carried out by SNH. BIT liaising with SNH to extract main findings and discuss outcomes. June 2010 - Ivan Clark to consider this further with SNH as lead partner. November 2010: this action will be retained in the new 2010-2013 implementation plan with a view to exploring if it can be delivered.

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress
			green infrastructure.						
2	Implement a common, coordinated approach to communications, through the use of an agreed communications toolkit, that increases people's awareness, understanding and enjoyment of biodiversity, and their involvement in looking after it.	2.1a	Prepare a statement showing how key messages utilised in biodiversity communications and in the BBC Breathing Places campaign are complementary, and how TV and other media coverage of Scottish biodiversity issues could be maximised between 2008 and 2010.	Jun-08	2008/09	SNH	Completed	Green	A statement was prepared and discussed by the People & Communication Group in late 2009.

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress
2	Implement a common, coordinated approach to communications, through the use of an agreed communications toolkit, that increases people's awareness, understanding and enjoyment of biodiversity, and their involvement in looking after it.	2.1b	Develop a plan for promoting the use of the biodiversity communications toolkit amongst organisations and people with a role in biodiversity communications.	Jun-08	2008/09	SNH	Completed	Green	A plan has been produced and is currently being implemented. The range of organisations to which the toolkit is being promoted includes SNH, SEARS, SBF members, environmental NGOs, land/water management NGOs, the formal education sector, local authorities, the business community and the media. Promotion is being carried out through organisational websites, email cascade campaigns, newsletters and inclusion in relevant publications and through networking and sharing good practice events. The toolkit was evaluated in late 2009 and promotional work will continue.
2	Implement a common, coordinated approach to communications, through the use of an agreed communications toolkit, that increases people's awareness, understanding and enjoyment of biodiversity, and their involvement in looking after it.	2.1c	Encourage all Scottish Biodiversity Forum member organisations that are actively involved in biodiversity communications to set out their proposals for utilising the toolkit in their future communications and for co-ordinating communications activity where this is appropriate.	Sep-08	2008/09	SG	Completed	Green	This is effectively done through SG's support of the communication plan described at action ICE 2.1b. Further work will be carried out by SNH in 2011 to revise the toolkit and to promote its use by partner organisations.

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress
2	Implement a common, coordinated approach to communications, through the use of an agreed communications toolkit, that increases people's awareness, understanding and enjoyment of biodiversity, and their involvement in looking after it.	2.1d	Hold annual stakeholder workshops to agree priorities, messages and timing of future communications activity, to share good practice in biodiversity communications, and to review the use and effectiveness of the biodiversity communications toolkit.	September 2008 onwards	Annual	SNH	Completed	Green	This may be explored as one of the cross cutting themes that the People and Communication Group leads on as part of its work. Further work will be carried out by SNH in 2011 to revise the toolkit and to promote its use by partner organisations.
2	Implement a common, coordinated approach to communications, through the use of an agreed communications toolkit, that increases people's awareness, understanding and enjoyment of biodiversity, and their involvement in looking after it.	2.1e	Scottish Government to make full use of the biodiversity communications toolkit in its communications on sustainable development and environmental issues.	September 2008 onwards	Ongoing	SG	On schedule	Green	SG advised that SNH promotion of the toolkit fulfils this action's requirements. Further work will be carried out by SNH in 2011 to revise the toolkit and to promote its use by partner organisations.

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress
2	Implement a common, coordinated approach to communications, through the use of an agreed communications toolkit, that increases people's awareness, understanding and enjoyment of biodiversity, and their involvement in looking after it.	2.1f	Prepare a report setting out baseline information against key indicators of biodiversity awareness, enjoyment, involvement, behaviours and actions. Establish a national survey to monitor these indicators and prepare annual reports.	September 2008 onwards	Annual	SNH	Completed	Green	The first set of indicators and findings against each has been published.
2	Implement a common, coordinated approach to communications, through the use of an agreed communications toolkit, that increases people's awareness, understanding and enjoyment of biodiversity, and their involvement in looking after it.	2.1g	Establish a Programme Planning Group and develop a forward programme of live presentations, exhibitions, festivals and other events to promote awareness of Scottish biodiversity in the planned Gateway centre at the Royal Botanic Garden Edinburgh.	Dec-08	2008/09	RBGE	Completed	Green	The John Hope Gateway is due to open next summer (2009). A Gateway Programme Planning Group with representatives from RBGE, SNH, SEPA, the Macaulay, Rowett, Scottish Crops Research Institute, Moredun, Edinburgh University and Scottish Government. It has met twice and a basis of a plan for the next two years has been established. Biodiversity related themes such as Darwin and evolution, climate change and phenology, trees, etc are represented on the programme. There will also be themes which focus on particular regions of Scotland, e.g. Orkney Spring 2010, and celebrate events such as Biodiversity Day/Week and the 200th anniversary of Charles Darwin. The Biodiversity Action Volunteer Coordinator post is something RBGE very much supported and would be very keen to have based within the John Hope Gateway. It would seem the ideal location for someone to be placed. However, it is not an RBGE initiative. May 2010 - The Gateway Programme Group have met at

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress
									regular intervals in the past 2 years to coordinate the programme of exhibitions and public events in the Gateway. The group includes representatives of ten different Scottish organizations including SNH, SEPA, Macaulay Land Use Institute and Forestry Commission and is chaired by Richard Birnie of MLRI. A recent success was the Spring Biodiversity Programme funded by the Scottish Government's Science Engagement Grant and involving over 40 events during a 3-month period, organized in partnership with 29 different organizations.
2	Implement a common, coordinated approach to communications, through the use of an agreed communications toolkit, that increases people's awareness, understanding and enjoyment of biodiversity, and their involvement in looking after it.	2.1h	Review the Biodiversity Scotland and Biodiversity Stories websites (taking account of the biodiversity communications toolkit, the needs of the Scottish Biodiversity Forum, LBAP network and other key audiences, and the availability of other websites) and make recommendations for possible improvements.	Dec-08	2008/09	BIT	Behind schedule	Amber	Key material from the Biodiversity Scotland website has been transferred to the SNH website on a more secure website which allows easier management of content. The requirements for a new Biodiversity Scotland website will be agreed in Q4 of 2010/11 and the new website developed in Q1 of 2011/12.

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress
			Implement agreed actions.						
2	Improve the accessibility of information about local biodiversity as a way of helping people find out about, enjoy and understand biodiversity in their local areas.	2.2a	Prepare a report on the long-term development of the Breathing Places website and database to ensure that it provides comprehensive information on places to visit, events and opportunities to get involved in biodiversity action in Scotland.	Jun-08	2008/09	SNH	Completed	Green	Website still ongoing and events finder will be incorporated into wider BBC site. November 2010: the website was developed by the BBC but the number of events the system listed in Scotland were low although there was more information on places for visits such as parks.

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress
2	Improve the accessibility of information about local biodiversity as a way of helping people find out about, enjoy and understand biodiversity in their local areas.	2.2b	Commission an audit of the availability and accessibility of information about local biodiversity held by local authorities, national agencies, NGOs and other bodies, and recommend possible improvements. Consider the implications of the results of the audit for policy, funding and delivery coordination.	Sep-09	2009/10	SG	Superseded	Amber	No audit was commissioned. However, SNH, NGOs, local authorities and others are increasingly making more information available through their websites.
2	Increase the quality and quantity of opportunities for people to get involved in looking after their local environment throughout Scotland, particularly on biodiversity issues.	2.3a	Produce annual reports on the role of the Forum for Environmental Volunteering Associations in coordinating activity aimed at getting more people involved in volunteering.	Annual	Annual	Forum for Environmental Volunteering Associations - to be taken out	Abandoned	Red	FEVA does not have the resources to produce an annual report but the Project Officer employed by BTCV on behalf of FEVA may be able to. Discussions ongoing. FEVA does not wish to be lead but a contributing partner when appropriate. Alternative lead partner to be agreed.

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress
2	Increase the quality and quantity of opportunities for people to get involved in looking after their local environment throughout Scotland, particularly on biodiversity issues.	2.3b	Implement agreed proposals for supporting volunteer managers, including guidance and training, to increase the contribution of volunteering to local and national biodiversity action plan targets.	Mar-10	2008/09	SG	Completed	Green	The SG is funding a 2 year Volunteer Manager Development Project over 2008-09 and 2009-10 to expand and develop the capacity of environmental volunteering managers. It is hosted by BTCV and steered by FEVA. The project is progressing well, through a combination training, events, networking and mentoring.
2	Increase the quality and quantity of opportunities for people to get involved in looking after their local environment throughout Scotland, particularly on biodiversity issues.	2.3c	Develop proposals for utilising the planned Gateway centre at the Royal Botanic Garden Edinburgh in coordinating and supporting volunteering activity across the biodiversity sector, possibly through a Biodiversity Volunteer Action Coordinator post.	Dec-09	2009/10	RBGE	Completed	Green	The John Hope Gateway was opened in late 2009. A Gateway Programme Planning Group, with representatives from RBGE, SNH, SEPA, the Macaulay, Rowett, Scottish Crops Research Institute, Moredun, Edinburgh University and Scottish Government, was established. A programme has been developed and this includes various biodiversity-related themes such as Darwin and evolution, climate change and phenology, and trees. There are also themes which focus on particular regions of Scotland, e.g. Orkney Spring 2010, and significant events such as Biodiversity Day/Week and the 200th anniversary of Charles Darwin.
2	Increase the quality and quantity of opportunities for people to get involved in looking after their local	2.3d	Develop guidance and support for businesses to become more involved in environmental volunteering, linking to the	Dec-09	2009/10	Business and Environment Partnership	Abandoned	Red	The Business Environment Partnership, the lead partner for this action, has run into funding difficulties and was unable to retain the project officer post which would have taken this action forward. As a result, this action was place on hold but subsequently, discussions have taken place with Scottish Enterprise and are still ongoing to find a way forward.

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress
	environment throughout Scotland, particularly on biodiversity issues.		Breathing Places campaign where appropriate.						
2	Increase the quality and quantity of opportunities for people to get involved in looking after their local environment throughout Scotland, particularly on biodiversity issues.	2.3e	Report on the best ways of encouraging more people to become involved and trained in biological recording.	Dec-10	2010/11	SNH	Superseded	Amber	This action was superseded by a petition lodged with Scottish Government to "urge the Scottish Government to establish integrated local and national structures for collecting, analysing and sharing biological data to inform decision-making processes to benefit biodiversity." The Biodiversity Science Group (BSG) was asked by the Environment Minister to consider the issues associated with Petition PE1229, and make observations and recommendations for future action to be provided to the Petitions Committee. A sub-group of BSG met with the petitioners, National Biodiversity Network (NBN) and SNH staff, and other interested parties in a forum meeting on 22 January 2010. The group have considered the information provided in advance, on the day, and in a number of subsequent submissions in collating its report. This report made recommendations on work should happen together with an analysis of what issues were considered to arrive at these recommendations. The Minister's direction on which of these recommendations should be taken forward is currently awaited as at November 2010.
2	Promote the benefits of environmental volunteering and encourage people from all backgrounds to	2.4a	Develop proposals for providing information on volunteering opportunities, utilising the Breathing Places	Jun-08	2008/09	SNH	Superseded	Green	This work has been superseded by the work of various organisations (SNH, VDS, BTCV, CSV, National Trust For Scotland, Scottish Wildlife Trust, etc) which promote volunteering opportunities.

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress
	get involved.		database and the Volunteer Scotland database.						
2	Promote the benefits of environmental volunteering and encourage people from all backgrounds to get involved.	2.4b	Ensure that biodiversity communications inform people about the benefits of environmental volunteering and on where to get information about volunteering opportunities (see ICE 5.4a).	Sep-08	2008/09	SNH	Superseded	Green	This work has been superseded by the work of various organisations (SNH, VDS, BTCV, CSV, National Trust For Scotland, Scottish Wildlife Trust, etc) which promote volunteering opportunities. Communications in support of International Year of Biodiversity have included the theme of "getting involved" as one of six actions that people can do to help biodiversity in Scotland.
2	Promote the benefits of environmental volunteering and encourage people from all backgrounds to get involved.	2.4c	Pilot an equalities impact assessment of the impacts of involvement in volunteering on personal development, health and well-being, and environmental behaviour.	Sep-08	2008/09	SNH	Abandoned	Red	Funding bid was unsuccessful

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress
2	Promote the benefits of environmental volunteering and encourage people from all backgrounds to get involved.	2.4d	Review the motivations for, and barriers to, involvement in volunteering and examine how people develop their involvement in volunteering over time in order to identify the scope for enhancing environmental volunteering.	Dec-08	2008/09	SNH	Completed	Green	Research completed.
2	Promote the benefits of environmental volunteering and encourage people from all backgrounds to get involved.	2.4e	Report on the implementation of the volunteering strategy, particularly in relation to dismantling the barriers to volunteering and closing the opportunity gap and the actions being taken by the public and voluntary sectors.	Annual	Annual	SG	Superseded	Green	Scottish Government produced a paper outlining approaches to encouraging environmental volunteering and identifying the main organisations it thought would be best placed to take this forward - Volunteer Development Scotland together with BTCV and FEVA. Scottish Government will part fund an extension to a Project Officer's post from March 2011 for three years.

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress
2	Promote the benefits of environmental volunteering and encourage people from all backgrounds to get involved.	2.4f	Develop and promote guidance on equalities impact assessment for environmental volunteering projects and relevant funding schemes.	Mar-09	2008/09	SG	Completed	Green	The SG has published guidance on the Public Sector Equality duty on its website at http://www.scotland.gov.uk/Topics/People/Equality/18507/EQIAtool/EQIA2 It is worth noting that the duty to conduct EQIA applies to public sector organisations rather than voluntary organisations. The February 2008 'Working with Difference' event - part of the Volunteer Manager Development Programme - helped volunteer managers from across Scotland to look at how their work can embrace diversity and be as accessible as possible to equality groups. The programme is now offering free diversity/accessibility training to environmental volunteer managers.
5	Develop effective resources and approaches for learning about biodiversity in support of A Curriculum for Excellence.	5.1a	Assess the need for new approaches to biodiversity learning and teaching under A Curriculum for Excellence at a Common Agenda workshop.	May-08	2008/09	SNH	Superseded	Amber	This action was superseded by the Scottish Government setting up a time-limited outdoor learning strategic advisory group. This has now produced a report and the Government has issued guidance on outdoor learning's contribution to implementing the Curriculum for Excellence.
5	Develop effective resources and approaches for learning about biodiversity in support of A Curriculum for Excellence.	5.1b	Report on the implementation of recommendations from the evaluation of the uptake of the EcoSchools Biodiversity module.	Dec-09	2009/10	Eco Schools	On schedule	Green	Better promotion of the biodiversity module: as a part of outdoor learning promotions, on SNH website, and on TeachingSpace website, and in CPD supported by SNH or Eco Schools. A link to the TeachingSpace website will be provided for the Eco Schools website, so that teacher's can access support for taking pupils outside the school gates. The case studies prepared for the report will be put on the Eco Schools website.

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress
5	Develop effective resources and approaches for learning about biodiversity in support of A Curriculum for Excellence.	5.5c	Identify the need for and produce any new materials to support teachers in teaching about biodiversity and sustainable development education, and ensure that these are widely available.	Dec-10	2010/11	Learning & Teaching Scotland	Completed	Green	Good progress has been made. Learning & Teaching Scotland have developed new websites on sustainable development and on outdoor learning. Eco Schools has produced a unit on biodiversity for their schools programme. A new publication, 'A time of opportunity: The Current Status of SDE in Scottish schools' was published in the summer of 2008 and is available on the LTS website. SNH has produced an online activity pack for teachers and children on biodiversity in Scotland.
5	Develop effective resources and approaches for learning about biodiversity in support of A Curriculum for Excellence.	5.1d	Evaluate current ways of supporting schools in delivering biodiversity-focussed learning, through classroom resources and outdoor learning opportunities, and develop new approaches where appropriate. Any new approaches to be compatible with A Curriculum for Excellence and build on the results of the Outdoor Connections project.	Dec-10	2010/11	Learning & Teaching Scotland	Completed	Green	This action was superseded by the Scottish Government setting up a time-limited outdoor learning strategic advisory group. This group has now produced a report and the Government has issued guidance on outdoor learning's contribution to implementing the Curriculum for Excellence. Learning & Teaching Scotland has developed a new outdoor learning website and this makes good links to biodiversity-focussed learning.

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress
5	Support the provision of school grounds that are high in biodiversity and that provide opportunities for learning about biodiversity.	5.2a	Provide guidance to school estate managers on ensuring that biodiversity issues are adequately covered in the development of new and refurbished schools buildings in a sustainable manner, thus fulfilling the biodiversity duty set out in the Nature Conservation (Scotland) Act 2004.	Dec-08	2008/09	SNH	Completed	Green	SNH has published a report on the development and promotion of resources to help school estate managers include provision for biodiversity in the development of the school estate. This is now being promoted through case studies and a sharing good practice event in 2010.
5	Support the provision of school grounds that are high in biodiversity and that provide opportunities for learning about biodiversity.	5.2b	Encourage school estate managers to implement the guidance, provided under 3.2a, and promote the value and benefits offered by enhanced biodiversity in schools.	Dec-09	2009/10	SG (Schools Directorate)	Completed	Green	This action is dependant on action ICE 5.2a which states, "Provide guidance to school estate managers on ensuring that biodiversity issues are adequately covered in the development of new and refurbished schools buildings in a sustainable manner, thus fulfilling the biodiversity duty set out in the Nature Conservation (Scotland) Act 2004." A SNH Sharing Good Practice event is being planned for late 2010. Awareness raising of the need to engage school estate managers and the SGP event will also be undertaken at the Scottish Biodiversity Forum conference in August 2010 in order to raise awareness amongst the biodiversity fraternity of the existence of the guidance and of the need to mainstream biodiversity learning in schools.

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress
5	Provide easily accessible information about places that schools can go to and use for first hand learning about biodiversity by further developing and promoting the Teaching Space website.	5.3a	Produce a long-term development plan for the Teaching Space website, including guidelines for local authorities and other bodies on the types of sites that should be added to the website.	Jun-08	2008/09	SNH	Superseded	Green	A new outdoor learning website has been launched by Learning Teaching Scotland and the Teaching space website has been incorporated into this.
5	Provide easily accessible information about places that schools can go to and use for first hand learning about biodiversity by further developing and promoting the Teaching Space website.	5.3b	Ensure that all local authorities, schools and other providers of outdoor learning are aware of the Teaching Space website and actively use it in making decisions about taking learning outdoors.	Dec-08	2008/09	SNH	Superseded	Green	A new outdoor learning website has been launched by Learning Teaching Scotland and the Teaching space website has been incorporated into this. The website is widely promoted across the schools sector.

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress
5	Provide easily accessible information about places that schools can go to and use for first hand learning about biodiversity by further developing and promoting the Teaching Space website.	5.3c	Identify sites close to schools in Scotland, particularly in urban areas, that offer opportunities for learning about biodiversity outdoors and supply information on these to SNH for inclusion on the Teaching Space website (following the guidelines produced under 3.3a).	Dec-10	2010/11	LBAP network	On schedule	Green	The new outdoor learning website developed by Learning & Teaching Scotland and which incorporates the teaching space website includes information about hundreds of sites.
5	Equip teachers to provide teaching and learning about biodiversity through initial teacher education and Continuing Professional Development.	5.4a	Evaluate the effectiveness of the "Biodiversity at the Chalk face" events as a way of ensuring teachers in training are aware of the value of teaching and learning about biodiversity both within the classroom and outdoors, and consider the implications of this with Initial Teacher Education institutions.	Mar-09	2008/09	SNH	Completed	Green	Susan Webster is presently in the middle of this evaluation. The two events ran very successfully at the end of October and the partnership that organise the events will meet at the end of November to discuss the future of BATCF. The Partnership is generally agreed that there has to be a 'modernisation' of the event in the light of new curriculum changes and a greater emphasis on outdoor education. Susan has also contacted all of the colleges who attend to engage in some discussion regarding the relevance of the event - some consider it to be outstanding and use it as the biodiversity element of their course, others consider it to be something a bit special for the students which augments what they already do....which varies from college to college/course to course. Again, this has been influenced by the new outdoor learning group, as it is likely that their event will focus on teachers in service and so our emphasis - with our partners- is likely to continue to be ITE's. May 2010 - Review

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress
									carried out and events modified/developed further
5	Equip teachers to provide teaching and learning about biodiversity through initial teacher education and Continuing Professional Development.	5.4b	Develop proposals for improving the skills of teachers in teaching about biodiversity and in learning outdoors through Continuing Professional Development, ensuring that these proposals have been fully tested and evaluated.	Mar-10	2009/10	Learning & Teaching Scotland	Superseded	Green	This action has been taken forward by SNH through a "teaching in nature" project which seeks to develop the skills and confidence of teachers in teaching outdoors. This project is strongly linked to CPD and those involved will be encouraged to promote what they have learned to other teachers. The project is due for completion in late 2010/11.
5	Review progress and develop a long-term vision for communicating about biodiversity and getting more	5.5a	Carry out a review of progress in implementing actions over the period 2005-2010 and their effectiveness in meeting the	Mar-10	2009/10	ICE	On schedule	Green	The success of the implementation plan is under ongoing review. It will be formally assessed at the end of the current implementation plan period.

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress
	people involved in biodiversity issues.		objectives of the Scottish Biodiversity Strategy.						
5	Review progress and develop a long-term vision for communicating about biodiversity and getting more people involved in biodiversity issues.	5.5b	Develop a long-term vision and proposals for ensuring that responsibility for and stewardship of biodiversity is embedded in Scottish culture and in the actions of people and organisations.	Sep-10	2010/11	ICE	Superseded	Green	This has now been superseded by the work of the new People & Communications Group and its delivery plan.

Annex 3b

Marine and Coastal Ecosystems Group

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
1	An "ecologically coherent network" of marine protected areas around Scottish waters is in the process of being established, meeting existing obligations under Natura 2000, OSPAR and WSSD, with mechanisms in place or in development to ensure that these sites can be managed to protect the biodiversity interest for which they were selected. Consideration is given as to whether any further sites are required to meet the objectives of the Scottish Biodiversity Strategy.	1.1a	An analysis undertaken of Natura 2000 sites within Scotland against the OSPAR commitment, to establish to what extent they represent "an ecologically coherent network of marine protected areas", and options developed for completing the network, should additional measures be necessary.	Summer 2008		Marine Scotland	Completed	Green	Completed and being used to inform the number and selection of MPAs as proposed under the Marine (Scotland) Bill.	Remove from 2010 actions list

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
1	An "ecologically coherent network" of marine protected areas around Scottish waters is in the process of being established, meeting existing obligations under Natura 2000, OSPAR and WSSD, with mechanisms in place or in development to ensure that these sites can be managed to protect the biodiversity interest for which they were selected. Consideration is given as to whether any further sites are required to meet the objectives of the Scottish Biodiversity Strategy.	1.1b	Dependent upon outcome of 1.1a, evidence-based criteria developed for completing an ecologically coherent network of marine protected areas within Scottish waters, meeting OSPAR criteria.	Winter 2008-09		Marine Scotland	Completed	Green	Completed but still ongoing as being developed and agreed at UK level to include onshore and off shore areas.	Remove from 2010 actions list.

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
1	An "ecologically coherent network" of marine protected areas around Scottish waters is in the process of being established, meeting existing obligations under Natura 2000, OSPAR and WSSD, with mechanisms in place or in development to ensure that these sites can be managed to protect the biodiversity interest for which they were selected. Consideration is given as to whether any further sites are required to meet the objectives of the Scottish Biodiversity Strategy.	1.1c	Based on these criteria a range of sites identified which are likely to be strong contenders for selection through this process, and an assessment undertaken of impacts on the biodiversity for which those sites are special, to inform management and/or legislative requirements.	Summer 2009		Marine Scotland	Superseded	Green	Superseded by marine bill process and incorporation of MSFD. More realistic time frame is 2012 - carry forward to next plan as a check or re-word as an ecosystem-based approach action? Should be happening as part of the M(S)B anyway so remove?	Remove from 2010 actions list. Re-visit wording for post 2010 plan

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
1	An "ecologically coherent network" of marine protected areas around Scottish waters is in the process of being established, meeting existing obligations under Natura 2000, OSPAR and WSSD, with mechanisms in place or in development to ensure that these sites can be managed to protect the biodiversity interest for which they were selected. Consideration is given as to whether any further sites are required to meet the objectives of the Scottish Biodiversity Strategy.	1.1d	Following completion of the analysis in 1.1a and 1.1b, a wider debate instigated on whether any further site protection mechanism might be needed, beyond OSPAR, to meet the objectives of the Scottish Biodiversity Strategy.	Summer 2009		M&CEG	Completed	Green	Completed as part of the marine bills process (M&CEG representation on AGMACS SSTF etc)	Remove from 2010 actions list

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
1	An "ecologically coherent network" of marine protected areas around Scottish waters is in the process of being established, meeting existing obligations under Natura 2000, OSPAR and WSSD, with mechanisms in place or in development to ensure that these sites can be managed to protect the biodiversity interest for which they were selected. Consideration is given as to whether any further sites are required to meet the objectives of the Scottish Biodiversity Strategy.	1.1e	Further consideration and exploration of Scotland's statutory options for marine nature conservation completed as part of the consultation process for developing a Scottish Marine Bill.	TBC		Marine Scotland	Completed	Green	Completed - also includes MSFD	Remove from 2010 actions list

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
1	An "ecologically coherent network" of marine protected areas around Scottish waters is in the process of being established, meeting existing obligations under Natura 2000, OSPAR and WSSD, with mechanisms in place or in development to ensure that these sites can be managed to protect the biodiversity interest for which they were selected. Consideration is given as to whether any further sites are required to meet the objectives of the Scottish Biodiversity Strategy.	1.1f	Biodiversity benefits of an "ecologically coherent network of marine protected areas" meeting OSPAR criteria promoted to all relevant partners; as part of this process, potential social and economic benefits identified and promoted.	Autumn 2009		M&CEG	Behind schedule	Amber	Now part of the Marine (Scotland) Bill process and will not be complete until 2012.	Suggest re-write to include MSFD and have as a check rather than an action for the next plan?

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
1	An "ecologically coherent network" of marine protected areas around Scottish waters is in the process of being established, meeting existing obligations under Natura 2000, OSPAR and WSSD, with mechanisms in place or in development to ensure that these sites can be managed to protect the biodiversity interest for which they were selected. Consideration is given as to whether any further sites are required to meet the objectives of the Scottish Biodiversity Strategy.	1.1g	A review of benefits of marine protected areas additional to the ecologically coherent network, in the context of any Marine Strategy Directive requirement for achieving "good environmental status", included in 2011-2013 Marine & Coastal Ecosystem Plan.	Autumn 2010		Marine Scotland	Superseded	Green	Superseded by marine bill process and incorporation of MSFD.	Carry forward to next plan as a check?

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
1	Action taken to assist 6 - 10 marine species and habitats*, selected by defined criteria, where it is possible to make a significant difference within the lifetime of the plan and where funding can be identified. (* For avoidance of doubt, 6 - 10 would be the total number of priorities identified; how many, if any, habitats are included would depend on the outcome of the assessment procedure in 1.2b)	1.2a	Criteria for prioritising species and habitats for conservation action proposed by SNH, discussed more widely, and agreed upon by M&CEG.	Spring 2008		SNH	Completed	Green	Criteria developed and consultation underway. Will be completed by end 2010.	

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
1	Action taken to assist 6 - 10 marine species and habitats*, selected by defined criteria, where it is possible to make a significant difference within the lifetime of the plan and where funding can be identified. (* For avoidance of doubt, 6 - 10 would be the total number of priorities identified; how many, if any, habitats are included would depend on the outcome of the assessment procedure in 1.2b)	1.2b	Each species and habitat on the Scottish Biodiversity List assessed against these criteria (as part of the analysis in action 1.3a), and a short-list of 6-10 species and habitats* proposed for action.	Summer 2008		SNH	Completed	Green	Species assessed against criteria and consultation underway. Will be completed by end 2010.	

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
1	Action taken to assist 6 - 10 marine species and habitats*, selected by defined criteria, where it is possible to make a significant difference within the lifetime of the plan and where funding can be identified. (* For avoidance of doubt, 6 - 10 would be the total number of priorities identified; how many, if any, habitats are included would depend on the outcome of the assessment procedure in 1.2b)	1.2c	Lead partners agreed for each of proposed species and habitats*, with a commitment to take forward action within identified budgets.	Autumn 2008		SNH/MS /M&CEG	Completed	Green	Will be completed by end of 2010.	

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
1	Action taken to assist 6 - 10 marine species and habitats*, selected by defined criteria, where it is possible to make a significant difference within the lifetime of the plan and where funding can be identified. (* For avoidance of doubt, 6 - 10 would be the total number of priorities identified; how many, if any, habitats are included would depend on the outcome of the assessment procedure in 1.2b)	1.2d	Plans for delivery drawn up by identified lead partners, in consultation with MS, SNH and M&CEG, including the identification of budgets for the agreed actions.	Winter 2008		M&CEG	Behind schedule	Amber	Will be incorporated in to Ecosystem Group planning process	

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
1	Action taken to assist 6 - 10 marine species and habitats*, selected by defined criteria, where it is possible to make a significant difference within the lifetime of the plan and where funding can be identified. (* For avoidance of doubt, 6 - 10 would be the total number of priorities identified; how many, if any, habitats are included would depend on the outcome of the assessment procedure in 1.2b)	1.2e	Report on progress of all above action plans completed and published.	Summer 2010		M&CEG	On-schedule	Green	Will be completed by end Dec-10	

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
1	An updated Scottish Biodiversity List is available to all officers of public bodies whose activities impact upon marine biodiversity. This updated list is harmonised with the revised UK Biodiversity Action Plan (BAP) List, identifies gaps in marine coverage, and includes supporting information on coastal and marine habitats and species.	1.3a	Scottish Biodiversity List revised to incorporate changes to marine species included on the new UK BAP list and the reclassification of marine habitats in that list.	Winter 2008		MS	Completed	Green	Will be completed by end Dec-10	

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
1	An updated Scottish Biodiversity List is available to all officers of public bodies whose activities impact upon marine biodiversity. This updated list is harmonised with the revised UK Biodiversity Action Plan (BAP) List, identifies gaps in marine coverage, and includes supporting information on coastal and marine habitats and species.	1.3b	Existing information sources on the status and current protection of all coastal and marine species and habitats on the revised Scottish Biodiversity List identified and reviewed, including an assessment of the main threats impacting on each feature.	Summer 2009		SNH	On-schedule	Green	Modified action with guidance produced for prioritised marine features rather than all SBL marine species and habitats. Delivered as part of a MarLIN contract Mar-2010 (SNH & MS) (SMRU are doing marine mammals). Coastal UKBAP features review completed by BIT.	

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
1	An updated Scottish Biodiversity List is available to all officers of public bodies whose activities impact upon marine biodiversity. This updated list is harmonised with the revised UK Biodiversity Action Plan (BAP) List, identifies gaps in marine coverage, and includes supporting information on coastal and marine habitats and species.	1.3c	One-page summary of conservation priorities, legislative protection and management requirements prepared for each of these species and habitats (highlighting any for which the current assessment is provisional), linking species with habitats to allow an ecosystem approach to biodiversity action.	Autumn 2009		M&CEG	On-schedule	Green	Will be completed by end Dec-10	

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
1	An updated Scottish Biodiversity List is available to all officers of public bodies whose activities impact upon marine biodiversity. This updated list is harmonised with the revised UK Biodiversity Action Plan (BAP) List, identifies gaps in marine coverage, and includes supporting information on coastal and marine habitats and species.	1.3d	These summaries, and information on the distribution of marine habitats and species made available on appropriate web pages (e.g. SBF, NBN) as part of action 2.4d, and availability of this information made known to target audiences; where existing information is perceived to be inadequate for management purposes, this information fed into the marine data assessment in target 5.3b.	Winter 2009		BIT	On-schedule	Green	Will be completed by end Dec-10. MS have offered to host (originally to be hosted by Biodiversity Scotland with links to DEFRA's marine data layer project) Discuss & liaise?	

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
1	An updated Scottish Biodiversity List is available to all officers of public bodies whose activities impact upon marine biodiversity. This updated list is harmonised with the revised UK Biodiversity Action Plan (BAP) List, identifies gaps in marine coverage, and includes supporting information on coastal and marine habitats and species.	1.3e	Following completion of this work, a review undertaken of any gaps in marine species and habitats on the Scottish Biodiversity List, including an assessment of criteria used for selecting the list; proposals made to SBF for any required updates to the list to ensure it is up-to-date and fit for purpose.	Spring 2010		SNH	Superseded	Green	The SBL has been update to reflect changes to the UKBAP list, however a full review of the SBL list is not planned in the near future.	Remove from 2010 actions list Include marine and coastal species within a full review of the SBL when appropriate.

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
2	Working with key Scottish industry for a, a targeted range of materials is developed to assist marine and coastal industries to understand the requirements and benefits of sound management of marine biodiversity.	2.1a	A list of key industries situated in Scotland's coastal zone and marine area collated, together with an overview of existing assessments of these industries' impacts on marine biodiversity. If this analysis shows up major gaps in information, then opportunities sought to address these gaps. As part of this exercise, key fora and other opportunities identified for engaging most effectively with these industries.	Spring 2009		M&CEG	Superseded	Green	This is part of the Marine Bill Process & MSFD implementation - ICZM. A Marine Scotland Lead - Suggest wait until bill progressed but keep as a note to ID gaps (if required) for the next plan	Remove from 2010 actions list
2	Working with key Scottish industry fora, a targeted range of materials is developed to assist marine and coastal industries to understand the requirements and benefits of sound management of marine biodiversity.	2.1b	From the analysis in 2.1a, prioritise one or more industry fora with whom engagement could lead to most immediate benefits for marine biodiversity. Work with these fora to identify what biodiversity information and guidance the relevant industries require to assist them in	Spring 2010		M&CEG	Superseded	Green	Superseded - This is part of the Marine Bill Process & MSFD implementation - work with MS & ID gaps & issues (if required) for the next plan	Remove from 2010 actions list

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
			integrating marine biodiversity considerations into their management and operations, then engage with these industries and other industry bodies (including CBI Scotland, the enterprise agencies and trade associations) to develop and disseminate these materials.							
2	Working with key Scottish industry fora, a targeted range of materials is developed to assist marine and coastal industries to understand the requirements and benefits of sound management of marine biodiversity.	2.1c	Information from 2.1b made available on the web as part of action 2.4d, and compiled into a training pack, highly targeted at marine industries; disseminate pack at Local Coastal Partnership and other appropriate industry events.	Summer 2010		M&CEG	Superseded	Green	This is part of the Marine Bill Process & MSFD implementation - work with MS & ID gaps & issues informing ICZM (if required) for the next plan. Info can be hosted on the MS website.	Keep in current plan and bring forward to next plan.

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
2	Working with key Scottish industry fora, a targeted range of materials is developed to assist marine and coastal industries to understand the requirements and benefits of sound management of marine biodiversity.	2.1d	As part of engagement in 2.1b, seek opportunities to encourage and assist marine and coastal industries to record biodiversity information gathered in their work.	Spring 2010		M&CEG member bodies	Not Started	Amber	On hold waiting for Priority species list. Suggest re-look at this and look at work currently being done (SWT/MCS & HWDT - successes that can be built on?) MCS Jelly fish, Marine mammals, basking sharks) MarLIN/NBN roles?	Keep in current plan and bring forward to next plan.
2	New strategies and reviews of existing strategies, relating to the marine environment, are critically assessed to ensure that they meet the objectives of the Scottish Biodiversity Strategy.	2.2a	SG Marine Directorate (Now Marine Scotland) works with M&CEG and industry groups to ensure that new strategies, and reviews of existing strategies, relating to the marine environment, are consistent with, and contribute to, the objectives of the Scottish Biodiversity Strategy, within the wider context of 'clean, safe, healthy, productive and biologically diverse oceans and seas'.	Ongoing		Marine Scotland	Completed	Green	This is part of the Marine Bill Process & MSFD implementation	Remove from 2010 actions list

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
2	New strategies and reviews of existing strategies, relating to the marine environment, are critically assessed to ensure that they meet the objectives of the Scottish Biodiversity Strategy.	2.2b	Advice provided to the Scottish Government on how best to integrate biodiversity considerations into the forthcoming Scottish Marine Bill.	Ongoing		M&CEG	Completed	Green	This is part of the Marine Bill Process & MSFD implementation	Remove from 2010 actions list
2	Pilot project undertaken which carries out a gap analysis of coastal and marine biodiversity delivery at the local level; based on this analysis, the potential role of Local Coastal Partnerships (LCPs) and LBAP Partnerships/Officers in addressing these gaps is assessed.	2.3a	Gap analysis undertaken of coastal and marine biodiversity delivery in one or more Local Coastal Partnership region(s) through partnership working with the LCP, LBAPs and constituent Local Authorities.	Summer 2008		SCF	Completed	Green	Marine and Coastal analysis carried out in North East Scotland.	

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
2	Pilot project undertaken which carries out a gap analysis of coastal and marine biodiversity delivery at the local level; based on this analysis, the potential role of Local Coastal Partnerships (LCPs) and LBAP Partnerships/Officers in addressing these gaps is assessed.	2.3b	Based on this analysis, the most effective mechanisms) proposed to deliver sound management of coastal and marine biodiversity.	Spring 2009		SCF	Superseded	Green	Superseded by Marine Plan which is currently in development.	

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
2	Pilot project undertaken which carries out a gap analysis of coastal and marine biodiversity delivery at the local level; based on this analysis, the potential role of Local Coastal Partnerships (LCPs) and LBAP Partnerships/Officers in addressing these gaps is assessed.	2.3c	Conclusions of this work fed into advice to Scottish Government in 2.2b.	Spring 2009		M&CEG	Completed	Green	Meetings held with stakeholders by Marine Scotland prior to the drafting of the Marine Plan. The draft Marine Plan will be completed for consultation in March 2011.	

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
2	Pilot project undertaken which carries out a gap analysis of coastal and marine biodiversity delivery at the local level; based on this analysis, the potential role of Local Coastal Partnerships (LCPs) and LBAP Partnerships/Officers in addressing these gaps is assessed.	2.3d	Building on this work, letter sent to Local Authority Chief Executives emphasising the role of local authorities, public bodies and local partnerships in achieving action for marine and coastal biodiversity in Scotland.	Summer 2009		M&CEG	Completed	Green	Rosanna Cunningham wrote to LA Chief Execs reminding them about their Biodiversity Duty (2009)	

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
2	Accessible materials produced to assist Scottish coastal and marine biodiversity regulators and practitioners in delivering the Scottish Biodiversity Strategy objectives in the marine environment, including guidance on engagement with stakeholders at the local level.	2.4a	The Marine LBAP Guidance Manual for England (2007), prepared by the Marine Conservation Society with support from DEFRA's and English Nature, assessed, and amended if necessary, to make applicable to Scotland.	Autumn 2008		M&CEG	On-schedule	Green	Will be completed by end of 2010.	

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
2	Accessible materials produced to assist Scottish coastal and marine biodiversity regulators and practitioners in delivering the Scottish Biodiversity Strategy objectives in the marine environment, including guidance on engagement with stakeholders at the local level.	2.4b	Scottish coastal and marine biodiversity regulators and deliverers, including Local Biodiversity Action Plans, canvassed at appropriate fora to identify support materials required to assist in the delivery of local coastal and marine biodiversity (including consideration of any guidance on integrating biodiversity in local Strategic Environmental Assessments).	Autumn 2008		M&CEG	Completed	Green	Completed. Captured requirements from marine working group members and LBAP network to feed into guidance on marine priority features. SNH developing generic biodiversity guidance for SEA.	

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
2	Accessible materials produced to assist Scottish coastal and marine biodiversity regulators and practitioners in delivering the Scottish Biodiversity Strategy objectives in the marine environment, including guidance on engagement with stakeholders at the local level.	2.4c	Any guidance requirements identified in 2.4b, are developed and published via the SBF website as part of action 2.1b (including a menu suite of objectives and criteria for local SEA assessment if this is shown to be required).	Spring 2010		M&CEG	On-schedule	Green	This will be addressed by the proposed Marine Plan.	

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
2	Accessible materials produced to assist Scottish coastal and marine biodiversity regulators and practitioners in delivering the Scottish Biodiversity Strategy objectives in the marine environment, including guidance on engagement with stakeholders at the local level.	2.4d	Materials produced to meet these needs (including outputs from actions 1.3c, 1.3d, 2.1a, 2.4b, 3.2b and 4.1b), and presented on the SBF or other appropriate website, with particular emphasis on an easily accessible portal for this information (ensuring that this is integrated with any Scottish marine data centres developed through the Marine Data and Information Partnership, as recommended by AGMACS)	Summer 2009		M&CEG (SNH & MS)	On-schedule	Green	Information on Marine Priority Features will be published on the SBS website. The anticipated timing will be the end of December 2010.	Keep in current plan and bring forward to next plan as required
3	A set of Marine Ecosystem Objectives (MEOs) is proposed for Scotland, integrating requirements of EU directives, within wider objective-setting for the sustainable use of Scottish seas.	3.1a	Approach to be adopted for MEOs scoped, and an initial set of objectives proposed for wider consultation.	Autumn 2008		Marine Scotland /SNH	Completed	Green	Completed	Remove from 2010 actions list

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
3	A set of Marine Ecosystem Objectives (MEOs) is proposed for Scotland, integrating requirements of EU directives, within wider objective-setting for the sustainable use of Scottish seas.	3.1b	Based on these proposals, consultation undertaken on a system of Scottish MEOs, as a contribution to the development of the Scottish Marine Bill.	Winter 2008		Marine Scotland	Completed	Green	This is part of the Marine Bill Process & MSFD implementation	Remove from 2010 actions list
3	A set of Marine Ecosystem Objectives (MEOs) is proposed for Scotland, integrating requirements of EU directives, within wider objective-setting for the sustainable use of Scottish seas.	3.1c	Following consultation, advice offered to Ministers on these MEOs and their implementation at the Scottish level, in cooperation with lead partners and stakeholders.	Summer 2009		Marine Scotland	Completed	Green	Also includes UK HLOs and MSFD objectives	Remove from 2010 actions list

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
3	A set of Marine Ecosystem Objectives (MEOs) is proposed for Scotland, integrating requirements of EU directives, within wider objective-setting for the sustainable use of Scottish seas.	3.1d	Measures taken to ensure that MEOs are reflected in the development of proposals for Marine Spatial Planning in Scottish waters, including in any proposals on MSP in the Scottish and UK Marine Bills.	TBC		Marine Scotland	On-schedule	Green	Also includes UK HLOs and MSFD objectives & Marine Economic & Social Objectives have been developed)	Keep on current and roll forward into next plan. Re-word as necessary.
3	A set of Marine Ecosystem Objectives (MEOs) is proposed for Scotland, integrating requirements of EU directives, within wider objective-setting for the sustainable use of Scottish seas.	3.1e	Actions included in 2011-2013 Marine & Coastal Ecosystem Plan to address any blockages identified to achieving MEOs with a biodiversity component.	Autumn 2010		Marine Scotland	Superseded	Green	This is part of the Marine Bill Process & MSFD implementation - work with MS & ID gaps & issues (if required) for the next plan	Keep on current and roll forward into next plan. Re-word as necessary.

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
3	Case promoted to ensure that climate change mitigation measures are taken forward in ways that respect marine and coastal biodiversity.	3.2a	The role of marine and coastal biodiversity championed in wider discussions on climate change policy (including highlighting the services offered by coastal and marine ecosystems in reducing climate change impacts).	Ongoing		Marine Scotland /SNH/SEPA	On-schedule	Green	Ecosystem Based approach to planning, marine bills, Climate change bills & Flooding Bills.	Keep on current and roll forward into next plan. Re-word to make SMART.
3	Case promoted to ensure that climate change mitigation measures are taken forward in ways that respect marine and coastal biodiversity.	3.2b	To assist in this championing role, M&CEG will work with relevant experts to clarify understanding of the biodiversity implications of marine renewables; it applies this understanding in any advice it offers.	Summer 2009		SG Ecological Advisors	On-schedule	Green	Planning processes identified through M(S)B & renewables policies? Meeting held between MCEG and Marine Scotland to discuss the preparation of a Marine Plan.	Keep on current and roll forward into next plan. Re-word to make SMART.

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
4	All officeholders of public bodies have access to the guidance and information they need in taking forward their biodiversity duty in the marine environment, as part of their responsibilities for ensuring the wider set of Marine Ecosystem Objectives in Scottish waters.	4.1a	A SNIFFER scoping study in 2008 will "identify existing biodiversity guidance for, and produced by, public bodies" and "identify gaps in existing guidance for public bodies with respect to delivery of the biodiversity duty". Following completion of this study, assessment undertaken of gaps in guidance which are particularly critical to the marine environment.	Summer 2009		M&CEG	Completed	Green	Final report delivered June 2009.	

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
4	All officeholders of public bodies have access to the guidance and information they need in taking forward their biodiversity duty in the marine environment, as part of their responsibilities for ensuring the wider set of Marine Ecosystem Objectives in Scottish waters.	4.1b	Materials produced to fill identified gaps in existing guidance for public bodies with respect to delivery of the biodiversity duty in the marine environment and biodiversity elements of the Scottish MEOs (action 3.1a), drawing on the review of priority species and habitats in action 1.3a.	Summer 2010		M&CEG/MS/SNH	On-schedule	Green	Part of the marine Bill process and information for the Scottish Priority Species list	Keep on current and roll forward into next plan.

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
4	All officeholders of public bodies have access to the guidance and information they need in taking forward their biodiversity duty in the marine environment, as part of their responsibilities for ensuring the wider set of Marine Ecosystem Objectives in Scottish waters.	4.1c	The SNIFFER study will also “provide costed options for an internet-based tool that would allow public bodies (and others) to access this information and guidance”. Using this information, work to establish a simplified access portal for this information and guidance (linked to the outputs from action 1.3c and 2.4d) using the SBF website and any internet-based tool developed as an outcome of the SNIFFER study.	Autumn 2009, then ongoing		M&CEG/MS	On-schedule	Green	SNH has let a contract to develop Biodiversity Duty guidance to be hosted initially on Biodiversity Scotland website.	Keep on current and roll forward into next plan.

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
4	All officeholders of public bodies have access to the guidance and information they need in taking forward their biodiversity duty in the marine environment, as part of their responsibilities for ensuring the wider set of Marine Ecosystem Objectives in Scottish waters.	4.1d	Guidance published on the biodiversity duty in the marine & coastal environment and biodiversity requirements of the MEOs reviewed annually, in the light of any new information, to ensure this remains relevant and up-to-date.	Autumn 2010, then ongoing		M&CEG	Behind schedule	Amber	Suggested that this be hosted on the Marine Scotland website as well as linked in the SBF website	Keep on current and roll forward into next plan.

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
5	Coastal and marine monitoring in Scotland is coordinated between all agencies operating in the marine environment, and a pertinent environmental indicator suite has been developed for application in these environments. This work should be fully coordinated with work of the UK Marine Assessment and Reporting Group (MARG) and any Scottish marine data centre developed from the Marine Bill.	5.1a	Depending on the outcome of the Marine Bill consultation, existing coastal and marine monitoring activities in Scotland reviewed against Scottish Biodiversity Strategy objectives	end of 2012		Marine Scotland Science	Superseded	Green	Part of the Marine Bill process and implementation of the MSFD	Review for next plan

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
5	Coastal and marine monitoring in Scotland is coordinated between all agencies operating in the marine environment, and a pertinent environmental indicator suite has been developed for application in these environments. This work should be fully coordinated with work of the UK Marine Assessment and Reporting Group (MARG) and any Scottish marine data centre developed from the Marine Bill.	5.1b	Depending on the outcome of the Marine Bill consultation, in concert with development of proposals for Marine Ecosystem Objectives (action 3.1a), relevant ecosystem indicators identified to monitor delivery of biodiversity-relevant MEOs, integrated with other Scottish biodiversity indicators	end of 2012		Marine Scotland Science	On-schedule	Green	This is likely to be addressed by the Marine Planning process.	Keep on current and roll forward into next plan.

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
5	Coastal and marine monitoring in Scotland is coordinated between all agencies operating in the marine environment, and a pertinent environmental indicator suite has been developed for application in these environments. This work should be fully coordinated with work of the UK Marine Assessment and Reporting Group (MARG) and any Scottish marine data centre developed from the Marine Bill.	5.1c	Gaps identified in current monitoring needed to assess delivery of MEOs and Scottish Biodiversity Strategy in marine environment	end of 2012		Marine Scotland Science	On-schedule	Green	Likely to be superseded as part of the marine bill process and implementation of the MSFD	Keep on current and roll forward into next plan.

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
5	Coastal and marine monitoring in Scotland is coordinated between all agencies operating in the marine environment, and a pertinent environmental indicator suite has been developed for application in these environments. This work should be fully coordinated with work of the UK Marine Assessment and Reporting Group (MARG) and any Scottish marine data centre developed from the Marine Bill.	5.1d	Cost-effective means identified to fill these monitoring gaps, with respect to international, national and regional drivers, responsibility assigned for monitoring to fill these gaps, and monitoring underway.	end of 2012		TBC, depends on Marine Bill legislation.	On-schedule	Green	Likely to be superseded as part of the marine bill process and implementation of the MSFD & OSPAR - this action can be updated for the next plan to inform LOCAL biodiversity needs - discuss?	Keep on current and roll forward into next plan.

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
5	Coastal and marine monitoring in Scotland is coordinated between all agencies operating in the marine environment, and a pertinent environmental indicator suite has been developed for application in these environments. This work should be fully coordinated with work of the UK Marine Assessment and Reporting Group (MARG) and any Scottish marine data centre developed from the Marine Bill.	5.1e	Outcomes of this monitoring reported annually (or as advised otherwise in developing the indicators) via links within the SBF, MDIP, Mermaid and other websites, and through the 3-yearly report on biodiversity outcomes to the Scottish Parliament.	TBC, depends on Marine Bill legislation.		TBC, depends on Marine Bill legislation.	On-schedule	Green	Likely to be superseded as part of the Marine Bill process and implementation of the MSFD - review for next plan	Keep on current plan and review for next plan.

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
5	The information, support and guidance needed to assist local Scottish biodiversity partnerships and other marine stakeholders is easily accessible through a targeted website.	5.2a	Website maintained to remain up-to-date and to supply critical Scottish coastal and marine biodiversity information and guidance as it becomes available	Ongoing from summer 2009		BIT/MS	Behind schedule	Amber	MS have offered to host (originally to be hosted by Biodiversity Scotland with links to DEFRA's marine data layer project) Discuss & liaise?	Keep on current and roll forward into next plan.
5	A full review on the "State of Scotland's Seas", is completed and published; this includes identification of key information gaps.	5.3a	The initial state of Scotland's seas assessed in terms of the vision of the Scottish Government, i.e. "clean, healthy, safe, productive and biologically diverse marine and coastal environments, managed to meet the long-term needs of nature and people". Where data is inadequate to make this assessment with reasonable scientific certainty, these data gaps are highlighted.	Autumn 2010		Marine Scotland	On-schedule	Green	Initial report published, full report Scotland's Seas II (SS II) on schedule for 2010 and UK Charting Progress Report published. This information likely to be used as baseline information for the implementing the MSFD	

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
5	A full review on the "State of Scotland's Seas", is completed and published; this includes identification of key information gaps.	5.3b	MBRCG considers data gaps highlighted in this report and seeks to identify cost-effective mechanisms to address these gaps.	Autumn 2010		Marine Scotland Science/ Biodiversity Science Group?? ?	Superseded	Green	Superseded by CAMERAS review. Remove this action from plan.	

Annex 3c Farmland and Lowland Ecosystems Group

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
2	Increase rural land managers' awareness of good habitat and species management practices.	2.2a	Disseminate the outputs from the 'Local Partnerships in Scottish Agriculture' seminars (held in 2007) to advisors and project staff working with rural land managers. Disseminate more widely to land managers through the Biodiversity Scotland website and frequently used media e.g. Scottish Farmer.	Dec-09	2009/10	BIT	Behind schedule	Amber	BIT plans to incorporate the main findings into new Biodiversity Scotland website in 2011	Old action carried forward
2	Increase rural land managers' awareness of good habitat and species management practices.	2.2b	Incorporate 9 new case studies of rural partnerships delivering good habitat management onto the Biodiversity Scotland website (3 in each year of the plan). Publicise these widely to advisors and project staff working with rural land managers and to land managers (through frequently used media e.g. Scottish Farmer).	Dec-09	2009/10	BIT	Behind schedule	Amber	SNH plans to add new case studies to the Biodiversity Communications Toolkit in 2011.	Old action carried forward

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
2	Increase rural land managers' awareness of good habitat and species management practices.	2.2c	Promote the further integration of biodiversity into the business planning of agricultural units e.g. through land use discussion groups and other demonstration farms where public funding is being used to explore business improvements.	Dec-08	2008/09	SG	Completed	Green	Biodiversity elements have been incorporated into business planning of 2 monitor farms. However, only limited integration of biodiversity objectives has been achieved to date.	
2	Increase awareness of biodiversity in the rural land use sector.	2.3a	Use the ICE biodiversity communications toolkit to develop a co-ordinated approach to communications about biodiversity in the rural sector among partner organisations involved in the Scottish Biodiversity Forum.	Dec-10	2010/11	RLUWG	Completed	Green	Biodiversity Communications Toolkit promoted to the SEARS group of organisations and staff involved in delivering the SRDP.	Old action carried forward
3	Promote the biodiversity benefits of landscape-scale integrated land management.	3.2c	Use landscape evaluation modelling tools to identify habitat networks and optimal areas for habitat restoration and creation in each region.	Dec-10	2010/11	SNH	On-schedule	Green	Forest Research is carrying out modelling exercise in Central Scotland. Local Authorities are developing ecological networks in other lowland parts of Scotland. Sharing Good Practice event hosted by SNH on 02/11/10. This is a major	Old action carried forward

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
									part of the CSGN.	
3	Promote the biodiversity benefits of landscape-scale integrated land management.	3.2d	Assess the fragmentation status of habitats on designated sites and provide recommendations for action.	Dec-09	2009/10	SNH	Behind schedule	Amber	Forest Research is carrying out modelling for designated sites network. Due for completion by end of March 2010. BIT has commissioned research into UKBAP habitat mapping at an ecosystem scale.	Old action carried forward

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
3	Promote the biodiversity benefits of landscape-scale integrated land management.	3.2e	Working Group to identify potential demonstration landscape units or sub catchment areas, secure participation from land managers, and formulate projects that will enhance habitat connectivity and develop ecological networks, delivering biodiversity benefits through collaborative action, to help support the regional RPAC decision-making process.	Dec-10	2010/11	RLUWG	Behind schedule	Amber	There are existing examples - GCV GN projects, Edinburgh & Lothian Forest Habitat Network. Starting in 2011/12, SNH will seek to establish a number of pilot projects to demonstrate the application of the concepts of ecosystem health and ecosystem services, including at least one project in the lowlands.	Old action carried forward
4	Ensure that actions taken to mitigate climate change do not adversely affect biodiversity.	4.1a	Compile existing knowledge on the potential impacts of biofuels and biomass production on biodiversity in order to develop practical guidance on the spatial planning, growing and harvesting of biofuel and biomass crops. Develop and disseminate on partner websites.	Dec-10	2010/11	SG, FCS, SNH	Completed	Green	See "Bioenergy and the Natural Heritage" on SNH website	Old action carried forward

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
4	Ensure that Rural Development Contracts deliver their intended biodiversity benefits.	4.2a	Review the performance of Tiers 2 & 3 of Rural Development Contracts (RDCs) in terms of the benefits being delivered for biodiversity. This review should include (but not be restricted to) an examination of the Tier 2 & 3 options; the impact of RDCs on freshwater, riparian and wetland biodiversity; the additional benefits delivered for biodiversity from collaborative working; and the effectiveness of RDCs in delivering landscape scale biodiversity conservation.	Dec-10	2010/11	SG	On-schedule	Green	SG in the process of letting contract to evaluate the biodiversity benefits of SRDP	Old action carried forward

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
1	Improve the management of urban grasslands to sustain and enhance biodiversity	1.1a	Commission a study to collate and review existing research on management and cutting regimes and case studies from areas where "alternative" management regimes have been implemented. In particular, the study should look at how "communication" with local residents and other stakeholders was managed, whether technical issues arose (for example, with mowing machinery) whether the management regime was sustained, and what the impacts were of the changed management (on biodiversity, resource implications and perceptions).	Mar-09	2008/09	Greenspace Scotland	Superseded	Amber	Current guidance and best practice will be captured by SNH Biodiversity Duty Guidance project and disseminated on new Biodiversity Scotland website in 2011. Guidance on grassland management to use report commissioned by Plantlife on lowland grassland management. A specific guidance document for Scotland might duplicate existing knowledge.	Action transferred from People and Communications Group
1	Improve the management of urban grasslands to sustain and enhance biodiversity	1.1b	Hold a stakeholder consultation event to discuss the findings of the study on the management and cutting regimes of grasslands.	May-09	2009/10	Greenspace Scotland	Not Started	Amber	Carry forward into Urban Sub- Group work plan	Old action carried forward

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
1	Improve the management of urban grasslands to sustain and enhance biodiversity	1.1c	Engage key stakeholders in the preparation of an action plan based on the outcomes of the study.	Dec-09	2009/10	Greenspace Scotland	Not Started	Amber	Carry forward into Urban Sub- Group work plan	Old action carried forward
1	Improve the management of urban grasslands to sustain and enhance biodiversity	1.1d	Implement the action plan in partnership with the participating organisations.	Dec-10	2010/11	Greenspace Scotland	Not Started	Amber	Grassland management is part of a demonstration project being run beside Hogganfield Loch, Glasgow. This will be used to steer best practice for other sites.	Old action carried forward
1	Improve the management of urban waterways and wetlands for people and nature.	1.2a	Develop a partnership to establish a programme focussed on the management of urban waterways and wetlands for people and nature.	Sep-08	2008/09	Clyde Valley Green Networks	Completed	Green	Some discussion between SNH and SEPA. Possible links to project in Glasgow and Clyde Valley and SEPA's Habitat Enhancement Initiative. SEPA has been promoting its "Restoration Fund". 03/02/10	
1	Improve the management of urban waterways and wetlands for people and nature.	1.2b	Develop a partnership and secure funding to deliver the programme.	Mar-09	2008/09	Clyde Valley Green Networks	Completed	Green	Some discussion between SNH and SEPA. Possible links to project in Glasgow and Clyde Valley and SEPA's Habitat Enhancement	

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
									Initiative.	
1	Improve the management of urban waterways and wetlands for people and nature.	1.2c	Review and evaluate work carried out as part of the programme.	Dec-10	2010/11	Clyde Valley Green Networks	On-schedule	Green	Some discussion between SNH and SEPA. Possible links to project in Glasgow and Clyde Valley and SEPAs Habitat Enhancement Initiative.	

Annex 3d Freshwater and Wetland Ecosystems Group

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
1	Halt the loss of species and the loss and fragmentation of habitats in freshwater, riparian and wetland ecosystems.	1.1a	Complete an inventory of wetlands to provide a clear baseline to judge the extent of loss and fragmentation.	Dec-10	2010/11	SEPA	Superseded	Green	Deferred. New Action	SEPA to develop a Scottish Wetland Inventory (spatial database) in cooperation with stakeholders that can be used for i. planning casework, ii. Regulatory casework; iii. Wetland restoration planning and review of Scotland wetland BAP targets, iv. Feeds into 'natural features' survey of Natural flood management plans
1	Halt the loss of species and the loss and fragmentation of habitats in freshwater, riparian and wetland ecosystems.	1.1b	Provide planners and landscape architects (through their professional bodies) with clear guidance and examples of good practice in the protection, restoration and development of freshwater, riparian and wetland habitat networks by holding CPD seminars or producing a toolkit / handbook / website.	Dec-10	2010/11	SNH	Superseded	Amber	Deferred. New Action	Using outputs from GCV exemplar SUDS project produce best practice guidance on SUDS design and disseminate to LBAPs, planners, developers/construction industry (via sharing good practice event?)

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
1	Through partnership working, identify and implement practical measures to maintain and enhance priority lochs to conserve aquatic BAP species.	1.2a	Undertake catchment management measures to address pressures including diffuse pollution in at least 6 loch catchments across Scotland.	Dec-10	2010/11	SEPA	On-schedule	Green	Ongoing	Develop and implement Lochs Environmental Improvement Action Plans (EIAP) for 32 lochs across 7 LBAP areas
1	Reduce the impact of invasive non-native species on freshwater and wetland habitats.	1.4a	Raise public awareness of the issue of invasive non-native species by providing clear, targeted advice. (e.g. building on Plantlife's work providing information on pond plants for gardeners).	Dec-10	2010/11	Scottish Working Group on Invasive Non Natives	Completed	Green	Launched 'Plantwise' campaign in Feb 2010	Develop biosecurity plans, rapid response protocols, awareness raising and training for RAFTS member trusts under their Biosecurity Planning Project. [Three biosecurity plans will be produced during 2009 with a further 11 in 2010 and the final six in 2011 - list of species at www.invasivespeciesScotland.org.uk]
1	Reduce the impact of invasive non-native species on freshwater and wetland habitats.	1.4b	Provide land managers with clear advice on the management of invasive non-native species in freshwater and wetland habitats by ensuring that advisors have the relevant information, training and promotional material through the delivery of a Sharing Good Practice Event.	Dec-09	2009/10	SNH	Completed	Green	SGP event Nov-08. CIRIA handbook "Invasive species management for infrastructure managers and the construction industry" published in 2008.	Develop biosecurity plans, rapid response protocols, awareness raising and training for RAFTS member trusts under their Biosecurity Planning Project. [Three biosecurity plans will be produced during 2009 with a further 11 in 2010 and the final six in 2011 - list of species at www.invasivespeciesScotland.org.uk]

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
1	Reduce the impact of invasive non-native species on freshwater and wetland habitats.	1.4c	Ensure that information on invasive non-native species is co-ordinated and consistent by developing a single (web-based?) information gateway.	Dec-10	2010/11	Scottish Working Group on Invasive Non Natives	Completed	Green	Information collated on GB Non-Native Species Website	
3	Promote the biodiversity benefits of landscape-scale integrated land management.	3.2a	Establish a Working Group to explore the biodiversity benefits of integrated land management, catchment management and sustainable flood management. Working Group to set objectives, a work programme and seek funding.	Dec-08	2008/09	RLUWG	Completed	Green		Undertake Clyde pilot project to develop a model to deliver ecological networks and biodiversity benefits through RBMP process
5	Minimise the impact of diffuse pollution on freshwater and wetland habitats.	5.2a	Provide a web-based focal point to promote good land management practices to reduce the impact of diffuse pollution.	Dec-09	2009/10	SEPA	Completed	Green	SEPA Agricultural Best Management Practices published during 2009	

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
5	Provide a consistent and co-ordinated approach to the communication of biodiversity advice and guidance to rural land managers.	5.3a	Implement the recommendations from the SNH research into the current provision of advice and advice needs (to be undertaken in 2007/08). Ensure that any gaps identified in the 2007 research are incorporated into the advice framework being developed by the Scottish Government with resources identified to ensure delivery.	Dec-10	2010/11	SNH/SG	On-schedule	Green	Referred to ACG as a cross-cutting action - This will be addressed by the ongoing habitat management for species project. To be published on new Biodiversity Scotland Website.	

Annex 3e Woodland Ecosystems Group

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
1	Meet the Scottish Executive's 2010 target of achieving favourable conservation status for woodland and associated open habitats in designated sites.	1.3a	Develop and publish a costed programme for bringing woodland habitats in designated sites into favourable condition.	Dec-08	2008/09	FCS	Completed	Green		Increase the rate at which designated woodland features and other native woodlands are brought into management towards favourable condition
1	Meet the Scottish Executive's 2010 target of achieving favourable conservation status for woodland and associated open habitats in designated sites.	1.3b	Implement the programme to help bring woodland habitats in designated sites into favourable condition, through SRDP measures and management of national forest estate and national nature reserves.	Dec-10	2010/11	FCS	On-schedule	green		Each year bring at least 3000ha of designated woodland features and 3,000ha of other native woodlands into management towards favourable condition.
3	Develop a national habitat network for Scotland as identified in the National Planning Framework (NPF2)	3.3a	Work with national and local stakeholders to collate all relevant spatial biodiversity datasets and create regional	Dec-09	2009/10	Forest Research	Completed	Green	Completed for woodlands. Other habitats still to be completed.	

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress	New Action
			digital habitat opportunity maps.							
5	Produce enhanced best practice guidance for biodiversity in forestry.	5.5a	Produce biodiversity guidelines linked to the Forestry Standard.	Dec-09	2009/10	FCS	Completed	Green	Publish the new UK Forestry Standard and Forests and Biodiversity Guidelines	
5	Produce enhanced best practice guidance for biodiversity in forestry.	5.5b	Publish and promote a decision support tool for management to accommodate rare, priority and protected species and habitats.	Dec-09	2009/10	FCS	Completed	Green		

Annex 3f Upland Ecosystems Group

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress
2	Raise awareness among current and future upland recreational users of upland biodiversity and minimal impact resource use.	2.1a	Identify and audit courses currently offered in Scotland to outdoor instructors and leaders in order to assess the biodiversity-related component.	Dec-08	2008/09	Mountaineering Council of Scotland	Abandoned	Red	Abandoned as Lead Partner funding reduced
2	Raise awareness among current and future upland recreational users of upland biodiversity and minimal impact resource use.	2.1b	Assess existing resource, identify gaps and encourage others to develop appropriate biodiversity-related training resources relevant to recreational use of the uplands.	Dec-10	2010/11	Mountaineering Council of Scotland	Abandoned	Red	Abandoned as Lead Partner funding reduced
3	Develop good practice underpinning the sustainable management of the uplands.	3.1a	Identify the 5 key biodiversity challenges for managing the uplands sustainably whilst accommodating different management objectives.	Dec-08	2008/09	Moorland Forum	Completed	Green	The Upland Ecosystem Group Plan identifies the 5 key biodiversity challenges for the uplands
3	Develop good practice underpinning the sustainable management of the uplands.	3.1b	Identify good practice and deliver a diverse series of events for land managers at most appropriate time of year to discuss and demonstrate the land use practices needed to deliver benefits to biodiversity.	Jun-10	2010/11	Moorland Forum	Completed	Green	This action has been achieved by Forum members, although perhaps not in a coordinated way. Mainly DCS, SAC and other Sharing Good Practice events.

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress
3	Develop good practice underpinning the sustainable management of the uplands.	3.1c	Establish demonstration site(S) for the upland management issue identified by the working group.	Dec-10	2010/11	Moorland Forum	On-schedule	Green	The 'Upland Solutions Project' is looking at areas around Muirkirk and the Upper Findhorn. It is due to report in early 2011.
3	Develop good practice underpinning the sustainable management of the uplands.	3.1d	Develop a representative series of case studies demonstrating good practice and delivery of 2010 biodiversity targets, making these available on-line and through other media.	Dec-10	2010/11	Moorland Forum	Superseded	Amber	SNH will seek to establish a number of pilot projects to demonstrate the application of the concepts of ecosystem health and ecosystem services. Case studies will be disseminated via the Biodiversity Scotland website.
5	Ensure that biodiversity is sufficiently covered in educational and training courses available to current and future upland land managers.	5.1a	Identify key academic and vocational courses undertaken by those directly involved in management of upland habitats in Scotland. Engage with those delivering courses undertaken by upland land managers in order to review, assess and promote biodiversity content.	Dec-08	2008/09	Moorland Forum	Abandoned	Red	Abandoned because a significant proportion of the relevant institutions are outwith Scotland

Objective No.	Target	Action No.	Action	End date	End Date (FY)	Lead Partner	Progress	Traffic light status	Comments on progress
5	Ensure that biodiversity is sufficiently covered in educational and training courses available to current and future upland land managers.	5.1b	Engage with those delivering courses undertaken by upland land managers in order to review, assess and promote biodiversity content.	Dec-09	2009/10	Moorland Forum	Abandoned	Red	Abandoned because a significant proportion of the relevant institutions are outwith Scotland.
5	Ensure that biodiversity is sufficiently covered in educational and training courses available to current and future upland land managers.	5.1c	Assess accessibility to existing resource materials. Identify gaps, produce new materials and develop a programme to make these readily available to all.	Dec-10	2010/11	Moorland Forum	On-schedule	Green	This will be addressed by the ongoing habitat management for species project. To be published on new Biodiversity Scotland Website in early 2011.