

Fifth National Report to the United Nations Convention on Biological Diversity: United Kingdom

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Overseas Territories

British Virgin Islands

Cayman Islands

Gibraltar

St Helena, Ascension and Tristan da Cunha

St Helena

Ascension

Tristan da Cunha

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Isle of Man

Jersey

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EXECUTIVE SUMMARY

Introduction

The UK Fifth National Report to the Convention on Biological Diversity (CBD) has been prepared by the Joint Nature Conservation Committee (JNCC). The report follows the structure proposed in the guidance issued by the CBD secretariat. The report draws mainly on the following sources of information:

Published Reports and Assessments

- The UK Biodiversity Indicators
- The *UK National Ecosystem Assessment* (UK NEA)
- European Habitats Directive Article 17 reporting
- *Charting Progress 2. The state of the UK seas.*

Policy statements and written submissions

- The *UK Biodiversity Framework* and its published reports
- Written contributions from the UK Government, the devolved administrations and the Governments of Overseas Territories (OTs) and Crown Dependencies (CDs), including the country biodiversity strategies.

This executive summary provides an overview of the response to each question, with information being summarised separately in respect of mainland UK and the OTs and CDs to which the CBD has been extended.

Q1: Why is biodiversity important for your country?

United Kingdom

The natural world, its biodiversity and constituent ecosystems, are critically important to our well-being and economic prosperity, to produce our food, regulate water supplies and climate, purify air, sustain pollination and break-down waste products. For example, UK wetlands supply water quality benefits of value up to £1.5 billion per year. The natural environment matters to people in the UK as shown by their active involvement in caring for it: at least nine million hours of voluntary work is carried out for biodiversity bodies each year, and 28 per cent of the population is prepared to act on environmental concerns. Access to good quality green space contributes to positive mental health, childhood development and physical health.

The islands of the mainland UK lie in the transition zone between the north-eastern, cold-water seas and the south-western, temperate-waters of Western Europe. Consequently the UK has a diverse mix of Atlantic, Arctic, Arctic-alpine and Boreal elements. There are important assemblages of mosses, liverworts and lichens, especially in the west, and the UK's estuaries are a crucial link in the migratory chain for waders and wildfowl. Thirteen species of seabird that breed in the UK are present here in internationally important numbers. Our seas are also important for their variety of benthic habitats and high overall biodiversity. About 13 per cent of the world's blanket bog is in the UK.

UK Overseas Territories and Crown Dependencies

The UK OTs and CDs, most of which are relatively small islands widely varying in climatic situations, have distinct ecosystems, with many endemic species of plants and animals (i.e. species found nowhere else in the world). Some biodiversity is recognised for its intrinsic value, and used as a state or cultural symbol. Fisheries, ecotourism and leisure use are often key economic activities reliant on the conservation and sustainable use of biodiversity.

Q2: What major changes have taken place in the status and trends of biodiversity in your country?

United Kingdom

Of the nine UK biodiversity indicators which directly measure the status and trends of biodiversity, and which include 20 measures, 12 (60%) are improving or show no overall change, and seven (35%) are deteriorating in the short term, as shown in the table below. In the long term (at least ten years) fewer measures can be assessed. Six of these are improving or show no overall change, whereas nine show deterioration. The data available to make an assessment are improving.

UK indicators of biodiversity status: summary of results.

	<i>Long-term</i> Number of measures	<i>Short-term</i> Number of measures
Improving	5	7
Little or no overall change	1	5
Deteriorating	9	7
Insufficient data	5	1

In the short term there are positive trends for species of European importance; woodland birds; bottom-dwelling marine fish; plant and animal genetic resources; and condition of nationally important protected sites.

In the short term there are negative trends for nationally listed priority species; farmland, water and sea birds; plant species richness in woodland, grassland and field boundaries; and European listed priority habitats

Overall, the evidence on the status and trends of biodiversity in the UK shows some long-term declines, but there have been improvements recently for some species and habitats. The assessment is based on the best available, scientifically robust data.

UK Overseas Territories and Crown Dependencies

There have been improvements in the conservation status of some habitats and species through increased conservation management and protection measures in many UK OTs and CDs. However, there are also widespread reports of habitat loss/deterioration and concomitant decline in biodiversity from anthropogenic pressures and invasive species. The Cayman Islands and St Helena predict some extinction of currently critically endangered species by 2020.

Q3: What are the main threats to biodiversity?

United Kingdom

The *UK National Ecosystem Assessment* ranked the longer-term importance of, and future trends in, the impacts of five major direct drivers on wild species diversity as follows:

1. Habitat change (land use/condition) – very high impact since 1940s and increasing;
2. Pollution and nutrient enrichment – very high impact since 1940s and decreasing;
3. Overexploitation – very high impact since 1940s and increasing;
4. Invasive species – high impact since 1940s and increasing; and
5. Climate change – moderate impact since 1940s and increasing rapidly.

More detailed, habitat-specific assessments highlight the following broad pressures on terrestrial habitats of European importance in the UK (see Table 3.1 for a more detailed list):

- Afforestation and forest management;
- Air and water pollution, including eutrophication (nutrient enrichment);
- Climate change;
- Fire;
- Interference in natural hydraulic conditions (e.g. water abstraction and modification of flowing waters);
- Invasive non-native species and pathogens;
- Over- and under-grazing;
- Recreational damage (e.g. trampling);
- Renewable energy use, mainly wind turbines and associated infrastructure;
- Unmanaged succession (e.g. scrub invasion and spread of bracken and gorse).

In the marine environment the main pressures identified are: fishing; climate change and acidification; hazardous substances; and eutrophication.

The UK biodiversity indicators track five pressures, in the short-term they show:

- High, but reducing loads of air pollution on land (indicator B5a);
- Decreasing levels of hazardous substances in the marine environment (indicator B5b);
- Reducing impacts of marine fisheries on size of fish in the North Sea (indicator D1);
- Increasing pressure from invasive non-native species (indicator B6);
- Increasing biological effects of climate change (indicator B4).

UK Overseas Territories and Crown Dependencies

In the UK OTs and CDs the main pressures are reported as:

- *Invasive non-native species – including mammals, fish and plants.*
- *Development.* Increased or insensitive development has led to habitat loss, degradation and/or fragmentation.
- *Exploitation of natural resources.* Illegal sea fishing and increased pressures on agricultural land
- *Climate change.* Changes to precipitation, temperature, sea level, coral bleaching and storminess could impact on both the terrestrial and marine environments in the UK OTs and CDs.

Q4: What are the impacts of the changes in biodiversity for ecosystem services and the socio-economic and cultural implications of these impacts?

United Kingdom

Of the range of ecosystem services delivered in the UK by eight broad habitat types, about 30 per cent have been assessed as declining since 1990. Reductions in ecosystem

services are associated with declines in habitat extent or condition and changes in biodiversity, though the exact relationships are not well understood.

Ecosystem services reported by the *UK National Ecosystem Assessment* to be declining and/or degraded include provisioning of some wild-caught fish and supply of clean water; regulating of hazards (such as flooding, erosion and fire), noise, soil quality and pollination; and some supporting services such as nutrient cycling.

Ecosystem services known to be being maintained or increased include some marine fisheries in the last ten years, and improved supplies of salmon for angling, as water quality improves in Scottish rivers. Increases in the extent of woodland have improved the supply of a number of important services such as local air quality and carbon sequestration for climate regulation.

It is estimated that the ecosystem services generated by Sites of Special Scientific Interest (SSSIs) in England and Wales in 2011 were worth £956 million per year, and that if all SSSIs were in favourable condition this value would increase by a further £769 million per year. This suggests there are substantial net benefits to society of protecting our best nature conservation sites and improving their condition. Other research shows that green infrastructure (GI) (the living network of green spaces, water and other environmental features), is, like other infrastructure, important to the healthy economic functioning of cities.

UK Overseas Territories and Crown Dependencies

Habitat change and large-scale impacts on ecosystem services are exacerbated in isolated, smaller areas such as the UK OTs and CDs, where there is less potential to recover. Changes to the islands' coasts – through development or habitat loss (e.g. loss of beaches, mangroves and coastal 'squeeze' from agriculture) – could render areas more susceptible to accelerated erosion and less resilient to extreme weather events.

All of the UK OTs and CDs have a significant economic dependence on tourism and/or fishing. A decline in biodiversity may have significant effects on revenue derived from appreciation or other use of biodiversity including ecotourism, for example where unusual habitats, rare birds, invertebrates, fishes or coral can no longer be found, or where flagship species decline. If numbers and diversity of fish decline, local communities will be undermined. Cultural loss from biodiversity extinction (locally or globally) would be particularly hard-felt, since local communities typically want to preserve the present cultural landscape and natural backdrop.

Q5: What are the biodiversity targets set by your country?

United Kingdom

Priority actions towards the five over-arching goals of the *Strategic Plan for Biodiversity 2011-2020* are identified in the *UK Biodiversity Framework*, which includes 60 milestones over 23 areas of activity.

In England and Scotland, new strategies have been published since 2010. In England, the Department for Environment, Food and Rural Affairs (Defra) published *Biodiversity 2020: A strategy for England's wildlife and ecosystem services* in August 2011, which draws on the *Strategic Plan for Biodiversity 2011-2020*, adapted for an England context. It sets out England's vision, 2020 mission and four high-level outcomes to halt biodiversity loss. Outcome 1 covers habitats and ecosystems on land (including freshwater environments); Outcome 2 includes marine habitats, ecosystems and fisheries; Outcome 3 deals with species; and Outcome 4 is about engaging people.

In Scotland, the *2020 Challenge for Scotland's Biodiversity*, published by The Scottish Government in 2013, identifies seven strategic outcomes covering ecosystem health; sustainable growth and use of natural capital; human health and quality of life; protected areas and wildlife; sustainable land and water management; good status of coasts and seas; and indicators.

The biodiversity strategies in Northern Ireland and Wales pre-date the *Strategic Plan for Biodiversity 2011-2020*. The current *Northern Ireland Biodiversity Strategy*, authored by the Northern Ireland Biodiversity Group, was published in 2002. Its goal is for Northern Ireland to have the highest quality environment in the UK, with conservation of biological diversity fully integrated into policy making, in order to support the health of Northern Ireland's citizens, its wildlife and its economy.

The *Environment Strategy for Wales (2006–2026)*, published by the Welsh Government in 2006, contains outcomes for biodiversity covering halting and recovering the loss of biodiversity, ensuring the wider environment is more favourable to biodiversity, achieving favourable condition for important sites for species and habitats, and good status for Welsh seas. The Wales Biodiversity Strategy Board is developing a biodiversity strategy for Wales to reflect the global and European targets for biodiversity and the current priorities for biodiversity in Wales, which will also encompass a refreshed Biodiversity Framework for Wales. This will further mainstream biodiversity across government policies and strategies and will encompass a reviewed monitoring and reporting regime

The UK vision for the marine environment is for 'clean, healthy, safe, productive and biologically diverse oceans and seas'. The UK high-level marine objectives were published by Defra in April 2009, and these set out the desired outcomes for the UK marine area to achieve this vision, following a sustainable use approach. The Aichi Biodiversity Targets are taken into account in offshore waters through the drivers and targets of other legislative policies including the European Marine Strategy Framework Directive (MSFD) and the Marine and Coastal Access Act 2009 (relating to English and Welsh inshore, and UK offshore waters).

UK Overseas Territories and Crown Dependencies

Some UK OTs and CDs are in the process of developing a Biodiversity Strategy and/or National Biodiversity Action Plan (e.g. Jersey, Ascension, St Helena, Isle of Man). These strategies/plans will set formal targets for biodiversity conservation, habitat preservation and invasive species eradication. The UK OTs and CDs also have a large number of policies and strategies aiming to conserve wildlife and habitats.

Q6: How has your national biodiversity strategy and action plan been updated to incorporate these targets and to serve as an effective instrument to mainstream biodiversity?

United Kingdom

The UK Biodiversity Framework sets out activities at a UK level that are intended to implement the Strategic Plan for Biodiversity 2011-2020, and includes 60 milestones over 23 areas of activity. Many of these are important steps towards mainstreaming biodiversity, such as integrating biodiversity values across sectors, reforming incentives, and understanding the impacts of pressures such as pollution; there is a focus on developing and sharing knowledge.

All the four countries of the UK have incorporated lists of priority habitats and species into their legislation, and conferred a 'biodiversity duty' on statutory bodies to have regard for conserving biodiversity. This is an important measure to bring about mainstreaming.

In England, the Natural Environment White Paper (NEWP) published June 2011, set out the Government's approach to the natural environment, including key new policy initiatives. Its vision for the natural environment puts emphasis of conservation action towards a more integrated landscape-scale approach, and embedding the value of the natural environment in decision-making.

Biodiversity 2020: A strategy for England's wildlife and ecosystem services was a key action from the NEWP and was one of the first national strategies to be produced in response to the Strategic Plan for Biodiversity 2011-2020. England's Biodiversity 2020 vision is that 'by 2050 our land and seas will be rich in wildlife, our biodiversity will be valued, conserved, restored, managed sustainably and be more resilient and able to adapt to change, providing essential services and delivering benefits for everyone'.

England's 2020 mission is '*to halt overall biodiversity loss, support healthy well-functioning ecosystems and establish coherent ecological networks, with more and better places for nature for the benefit of wildlife and people*'.

A new Northern Ireland Biodiversity Strategy is being developed and is anticipated to be available in 2014.

Scotland's *2020 Challenge for Scotland's Biodiversity* aims to:

- protect and restore biodiversity on land and in our seas, and to support healthier ecosystems.
- connect people with the natural world, for their health and well-being and to involve them more in decisions about their environment.
- maximise the benefits for Scotland of a diverse natural environment and the services it provides, contributing to sustainable economic growth.

Key aspects of this include:

- A move to an ecosystem approach for delivering biodiversity conservation and ecosystem services.
- Mainstreaming biodiversity by ensuring key decision makers understand the multiple benefits, including ecosystem services, people's health and well-being, that well-functioning ecosystems deliver.
- A focus on the drivers of biodiversity loss, primarily: invasive non-native species, habitat fragmentation, diffuse pollution, and climate change.

The Welsh Government is currently preparing proposals to establish a legal framework to embed a process of integrated natural resource management into existing delivery mechanisms. The Environment Bill White Paper was published for consultation in October 2013, focussing on establishing a more effective and integrated approach to managing natural resources, including biodiversity, which will help to bring about significant improvements to our natural environment.

The Wales Biodiversity Strategy Board is also developing a refreshed biodiversity strategy for Wales which will further mainstream biodiversity across government policies and strategies, and will encompass a reviewed monitoring and reporting regime.

UK Overseas Territories and Crown Dependencies

The focus in the UK OTs and CDs has mainly been on target setting and implementation rather than updating strategies and plans. However, even outside of any formal biodiversity

strategies, the UK OTs and CDs reported many activities, at a variety of scales, that are ongoing to protect their biodiversity (e.g. Gibraltar's revision of the Nature Protection Act 1991 coupled with its management plan programme; the development of Biodiversity Action Plans on Jersey; lionfish eradication in the British Virgin Islands; a management plan for the Marine Turtles of Ascension Island).

Q7: What actions has your country taken to implement the Convention since the fourth report and what have been the outcomes of these actions?

Priority actions are set out in the *UK Biodiversity Framework* and country strategies as presented in response to Questions 5 and 6. The outcomes are being assessed using UK and country-level indicators. However, since new strategies were adopted in England in 2011 and Scotland in 2013, and are not yet published for Wales and Northern Ireland, there has been limited scope to assess those outcomes. Indicators are still under development and partial, indicator-based, UK assessments were published in 2012 and 2013 (see Appendix 5). A further update of UK indicators is due later in 2014. The recent trends in indicators are reported where relevant in different sections of this report and a summary of progress is presented in Section 10.

United Kingdom

Actions to deliver biodiversity outcomes mainly take place at the level of the individual country. There are many examples in this report, including:

- Continued designation of protected areas, especially at sea.
- Continued work to improve the management and condition of all designated sites.
- Integrated, landscape-scale approaches to improving the natural environment, such as Nature Improvement Areas (NIAs) and river-basin management plans.
- Development of country policies and strategies for issues such as forestry, water, invasive species, pollinators, and fisheries.
- Agri-environment programmes to support environmental improvements on farmed land.
- Initiatives to promote enjoyment of nature and the outdoors.
- Research to develop knowledge and evidence-based guidance, such as ecosystem assessment and payment for ecosystem services.
- Development of a UK Marine Strategy.

UK Overseas Territories and Crown Dependencies

The reports from the UK OTs and CDs in Appendix 4 show a significant amount of activity being carried out aimed at conserving biodiversity. The number of species being recorded and monitored is increasing, and the techniques for undertaking this are generally improving. Awareness of the importance of biodiversity, and the ecosystem services it provides, is increasing; an important outcome when many areas are under pressure for development.

Q8: How effectively has biodiversity been mainstreamed into relevant sectoral and cross-sectoral strategies, plans and programmes?

United Kingdom

Three UK biodiversity indicator measures track outcomes of cross-sectoral programmes that include biodiversity among their objectives. These include agri-environment schemes (B1a), sustainable woodland management (B1b), and sustainable marine fisheries (B2). All of these measures are showing positive trends. A number of other indicators are being developed.

Examples of mainstreaming biodiversity in sectoral programmes include:

- Spatial planning legislation and policies in all the four countries of the UK include safeguards for biodiversity and ecosystems, as well as requirements for Environmental Impact Assessments (EIAs) of some developments.
- Legislation in each of the countries which places a 'statutory duty' on all public bodies to have regard to biodiversity conservation.
- Pilot projects in England and work in Scotland to test approaches to biodiversity offsetting.
- Commitments to, and reporting against, 'green government' objectives.
- All four UK countries have actions in place to raise people's awareness and knowledge of biodiversity.

UK Overseas Territories and Crown Dependencies

Generally, there is a political will in the UK OTs and CDs to conserve biodiversity, with local legislation and initiatives expressly including considerations for wildlife and habitat conservation. However, there is still some further work needed to ensure considerations for biodiversity are routinely addressed in all departmental policies.

At the local level, stakeholder involvement in conservation strategies is generally good, has noticeably increased in recent years, and extends beyond planning into active implementation. Focussed mainstreaming activity has taken place in the British Virgin Islands, and the Ascension Island Government is working towards ISO 14001 accreditation, which sets out the criteria for an effective environmental management system across all of its developments. In addition, four further UK OTs and CDs have expressed an interest in taking part in the UK Government's Environmental Mainstreaming Initiative.

Q9. How fully has your national biodiversity strategy and action plan been implemented?

United Kingdom

All of the strategies, at the level of either country or UK, are at an early stage or still under development, therefore most areas of implementation are also at an early stage.

Of the 60 milestones in the *UK Biodiversity Framework*, 11 have been completed, 37 have made good progress and are on track, work on 11 has been started, and work on one is not yet due to start (see also Section 6.1). Work is ongoing to further develop the set of indicators for the *UK Biodiversity Framework* to cover all goals within the *Strategic Plan for Biodiversity 2011-2020*.

In England, the *Biodiversity 2020 Indicators* are updated annually and track progress towards the outcomes of the *Biodiversity 2020* strategy. A number of major initiatives are underway as reported in Sections 7 and 8.

In Scotland, A Route Map to 2020, to be published in the autumn of 2014, will highlight significant tasks and targets contributing to the *2020 Challenge*.

In Wales, the *Environment Strategy for Wales* contains the current biodiversity outcomes sought for Wales by 2026. Reporting on the *Environment Strategy* was focussed on three key areas:

- How the *Environment Strategy* is being taken forward in other strategies, plans and programmes, including the biodiversity duty (Welsh Government 2011).
- Progress against the indicators which support the outcomes via the *State of the Environment Report* (StatsWales 2012a,b).
- Progress against the actions from the action plan (Welsh Government 2011).

UK Overseas Territories and Crown Dependencies

Some of the UK OTs and CDs are in the process of creating their National Biodiversity Strategies and Action Plans (NBSAPs), for example Ascension Island and the Isle of Man. However they have all been involved in ongoing biodiversity conservation, implementing legislation and meeting relevant objectives under their Environmental Charters and under other Multilateral Environmental Agreements related to the CBD.

Q10: What progress has been made by your country towards the implementation of the Strategic Plan for Biodiversity 2011-2020 and its Aichi Biodiversity Targets?

United Kingdom

This section covers action within the four countries of the UK towards the five Goals of the *Strategic Plan for Biodiversity 2012-2020*. The three targets with an end-date of 2015 are covered in more detail.

The implementation of UK and country strategies is at an early stage, and at this point progress is primarily assessed in regard to actions in progress rather than the eventual outcomes. Our assessment is that substantial progress is being made under Strategic Goals B and E, and progress is being made in most areas under Strategic Goals A, C and D. However we recognise that all of the Strategic Goals, and the more specific Aichi Targets, are very ambitious and will require a further concerted effort by Government, the voluntary sectors and all relevant sectors of the economy and society to achieve them.

Strategic Goal A: *Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society* (Targets 1, 2, 3 and 4).

Progress has been made in most areas. Awareness of the values of biodiversity is generally good and there are many initiatives to raise it. Innovative financial mechanisms and opportunities for mainstreaming are being initiated and supported at home and overseas. A number of positive incentives operate in the UK and benefit large areas of land, as well as improving the sustainability of our fisheries. Achievement of Goal A requires new and innovative approaches, some of which are still being developed and tested, to fully reflect the values of biodiversity and ecosystems in decision-making.

Strategic Goal B: *Reduce the direct pressures on biodiversity and promote sustainable use* (Targets 5, 6, 7, 8, 9 and 10).

Overall, progress towards Goal B has been substantial. There is evidence that some pressures are being reduced (e.g. air and marine pollution) and there is some recovery (e.g. acidification on land), but other pressures remain at damaging levels (e.g. nitrogen deposition, seabed disturbance), and some pressures are increasing (e.g. climate change, non-native species). Progress is being made on mainstreaming biodiversity objectives in

sustainable agriculture, forestry and fisheries. Further research and development of associated indicators will enhance our ability to measure and report progress.

Target 10: (By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning). Some habitats are particularly vulnerable to climate change; on land the risks are clearest for montane habitats (due to increased temperature), wetlands (due to changes in water availability), and coastal habitats (due to sea-level rise). At sea, ocean acidification is considered to pose a major long-term threat to deep-sea corals and other calcifying organisms.

Climate change is expected to have increased impacts on vulnerable terrestrial and marine species and habitats. A complex interaction of factors is occurring, such that the impacts of climate change, though likely to continue to intensify, are far from fully understood. Guidance has been published on adaptation to reduce the impacts of climate change on vulnerable habitats, and measures are being implemented to reduce pressures on protected sites and to enhance ecological connectivity.

Strategic Goal C: *To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity (Targets 11, 12 and 13).*

Progress has been made towards Goal C in most areas. The extent of protected areas continues to increase, and more sites are in recovering condition due to effective management. The overall status of assessed terrestrial and freshwater species has been in decline since comparable data became available in the 1970s, although for some species groups the decline has been halted or reversed in recent years. There is evidence that where effort has been targeted, species status has improved. Trends in the marine environment are mixed. Actions are in place to address many previously observed declines. Good progress is being made with conserving the genetic resources of plants and domesticated animals.

Strategic Goal D: *Enhance the benefits to all from biodiversity and ecosystems (Targets 14, 15 and 16).*

Overall, progress has been made towards Goal D in most areas. The UK has made a good start toward the goal, and actions are underway to lay the foundations to achieve this goal. The UK has initiated actions towards safeguarding and restoring ecosystems as required by Targets 14 and 15. Many of our ecosystem services have declined in the long term, with the result that their ability to maintain important services is also sub-optimal. Tools to support a more integrated ecosystems approach are being developed and tested. Actions are in place to improve and restore habitats, but it is too early to assess their overall outcomes. The UK is investing in evidence in this area through development of indicators, research, pilot projects, and knowledge exchange.

The UK is on track to meet Target 16 (*By 2015, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation*).

Strategic Goal E: *Enhance implementation through planning, knowledge management and capacity building (Targets 17, 18, 19 and 20).*

Substantial progress has been made. We have a strong evidence base on policy implementation, public expenditure on biodiversity, and investments in knowledge generation and access to data. Further work is ongoing to develop indicators in this area. UK scientists and scientific institutions continue to be very active in the collection,

interpretation and dissemination of biodiversity-relevant knowledge and the development of tools for evaluating ecosystems and policies. Despite a recent dip following the global financial crisis in 2008, public spending on biodiversity in the UK has increased by 76% since 2000, and spending on international biodiversity has increased year-on-year since 2009. Innovative approaches are being developed and tested to mobilise new financial resources.

The UK is on track to meet Target 17 (*By 2015 each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.*)

UK Overseas Territories and Crown Dependencies

A considerable amount of activity has been undertaken towards the five goals. The details of activities and progress are recorded within the individual UK OT and CD reports in Appendix 4. Most of the UK OTs and CDs reported in more detail on the status of their protected areas (terrestrial and marine), and some provided information about species threatened with extinction.

Q11: What has been the contribution of actions to implement the Convention towards the achievement of the relevant 2015 targets of the Millennium Development Goals in your country?

United Kingdom

The UK's contributions to meeting the Millennium Development Goals are led by the Department for International Development and are intended to contribute towards achievement of the relevant Goals in countries other than the UK itself.

The UK Government contributes funding for projects under the Darwin Initiative, which assists countries that are rich in biodiversity but poor in financial resources, and Darwin Plus, which helps the UK Overseas Territories to meet their objectives under the three major biodiversity conventions. The UK's International Climate Fund (ICF) has been launched to help the world's poorest adapt to climate change and to promote cleaner, greener growth.

The UK is one of the major sources of global foreign investment, and transnational corporations based here have a significant potential global role in transferring environmental best practice and promoting the value of ecosystems and biodiversity.

The UK is a significant importer of biomass, such as food for human or animal consumption, and forest or bioenergy products. Ongoing research offers an opportunity to monitor the pressures which UK consumption may cause in the countries of source, and can provide the evidence for the formulation of policies to avoid or mitigate potential impacts on the overseas ecosystems which provide the UK with essential biomass.

UK Overseas Territories and Crown Dependencies

Actions taken in the UK OTs and CDs, including numerous conservation initiatives and work towards formal biodiversity strategies, are consistent with the relevant Millennium Development Goals (namely goals 7.A & 7.B).

Q12: What lessons have been learned from the implementation of the Convention in your country?

United Kingdom

Lessons have been learnt in the following areas:

- The importance of partnership working;
- Our approach must go beyond protected sites and species;
- The importance of mainstreaming biodiversity;
- Development of indicators and policy evaluation;
- Working across political boundaries;
- Focus on the three core parts of the mission for the *Strategic Plan for Biodiversity 2011-2020*.

UK Overseas Territories and Crown Dependencies

The situation with regard to each of the OTs and CDs varies. Identified lessons learned from the implementation of the CBD include: the need for further research and funding in order to better understand some of the observed declines in biodiversity; the challenges posed by conflict between the aims of the Convention and economic drivers (e.g. fisheries); and the need to ensure that adequate resources and skills are available to enable implementation. It is also considered beneficial to have the external driver of the CBD to push forward environmental gains.

Part I: An update on biodiversity status, trends, and threats and implications for human well-being

Q1: Why is biodiversity important for your country?

1.1 UK Biodiversity Indicators

Two UK biodiversity indicators (A1 and A2) provide evidence of the importance of the natural environment to people living in the UK.

Indicator A1 (awareness, understanding and support for biodiversity) is currently under development, but it is intended that this indicator will be used to address the general public's connection and concern for biodiversity – i.e. the proportion of people who feel connected to the biodiversity within their environment or are concerned about biodiversity loss. Public understanding and opinion on the value of biodiversity have strong implications for the acceptance and adoption of conservation measures.

Indicator A2 (taking action for nature) covers the amount of time people spend volunteering to assist in conservation, which gives some indication of society's interest in and commitment to biodiversity. In 2012, the index was calculated using data from 13 organisations covering nearly 9 million hours of volunteers' time. Between 2000 and 2012 the amount of time contributed by volunteers has increased by 27 per cent. In the past five years to 2012 it has decreased by 6 per cent, but this slight decline may reflect the fact that a number of organised projects of public engagement ended during this time, rather than a real decrease in interest or commitment.

Further information about indicators A1 and A2 is provided in Appendix 5.

1.2 Other evidence: value of biodiversity

The natural world, its biodiversity and its constituent ecosystems are critically important to our well-being and economic prosperity. We depend on them to produce our food, regulate water supplies and climate, purify air, sustain pollination and break-down waste products (UK NEA 2011a). Examples of how ecosystems contribute to prosperity include water quality benefits of UK wetlands of value up to £1.5 billion per year, and coastal wetlands which provide flood protection of value up to £1.5 billion per year (UK NEA 2011b).

Public engagement and attitude form one source of evidence of the value of biodiversity, and affect the acceptance and adoption of conservation measures. Research into public engagement in England (Christmas *et al* 2013), in which over 1,000 residents were interviewed, showed that just under half were unaware and/or unconcerned about loss of biodiversity, whereas 28 per cent were not only concerned, but had also taken action on their concern. In Scotland in 2009, 79 per cent of people surveyed were interested in biodiversity, and 76 per cent were concerned about biodiversity loss (Progressive Partnership Ltd 2009).

Access to good quality green space contributes to positive mental health, childhood development and physical health. Ecosystems benefit the mental and physical health of individuals through nature-based activity, social engagement and exercise. This can be a catalyst for adoption of healthier lifestyles. In addition, ecosystems can protect health by absorbing pollutants and slowing the spread of some diseases (UK NEA 2011a).

Semi-natural habitats are the principal reservoirs of biodiversity in the UK and contribute to delivery of a number of ecosystem services (UK NEA 2011a), summarised in Figure 1.1 below.

Service group	Final Ecosystem Service	Mountains, moors, heaths	Semi-natural grasslands	Enclosed farmland	Woodlands	Freshwaters, wetlands & floodplains	Urban	Coastal margins	Marine
Provisioning	Crops		L	H		L	M	L	
	Livestock/Aquaculture	M	M	H	L	L	M	M	H
	Fish					M	M	M	H
	Trees, standing vegetation, peat	M	M	M	H	M	M	M	
	Water supply	H		M	M	H	M	L	
Provisioning/Cultural	Wild species diversity	H	H	M	H	H	M	H	H
Cultural	Environmental settings: Local places	M	M	M	H	H	H	H	M
	Environmental settings: Landscapes/seascapes	H	H	M	M	H	M	H	H
Regulating	Climate	H	M	H	H	L	H	M	H
	Hazard (e.g. flood, fire, pollution incidents)	H	M	H	M	H	M	H	M
	Disease and pests	L	L	H	M	M	M	L	M
	Pollination	M	H	H	L		M	M	
	Noise	L	L	L	M	M	H	M	
	Detoxification & purification:								
	Water quality	H	H	H	M	H	M	H	M
	Soil quality	H	H	H	H	M	M	M	
Air quality	M	M	M	H	L	H	L	H	

Figure 1.1 Relative importance of Broad Habitats in delivering ecosystem services and overall direction of change in service flow since 1990. (**Key:** Importance of Broad Habitat for delivering the ecosystem service: H = High; M = Medium; L = Low.) This is a highly simplified version of Figure 5 from the *UK National Ecosystem Assessment: Synthesis of the key findings* (UK NEA 2011a), which should be consulted for detail.

The marine biodiversity found in UK waters provides a range of ecosystem services and benefits of value to UK society (Figure 1.2). These benefits include food (fish, shellfish), reduction of climate stress (carbon and other biogas regulation), coastal protection, tourism, cultural heritage, and many more (UK NEA 2011a). In particular, the industry built around fishing is an important socio-economic activity in coastal regions. This is especially so in remote coastal communities in Scotland, Wales and south-west England where it provides employment through fishing, aquaculture farms, fish processing, and associated industries such as boat building and maintenance, gear supply, markets and transportation (UK NEA 2011b). In 2012, UK vessels landed 627,000 tonnes of sea fish (including shellfish) into the UK and abroad, with a value of £770 million.



Figure 1.2 Examples of the goods, services and benefits from marine habitats provided to human well-being (reproduced from UK NEA 2011b).

1.3 Other evidence: diverse mix of species and habitats

The UK has a diverse mix of Atlantic, Arctic, Arctic-alpine and Boreal elements, as well as some more continental elements in the east. Many are on the edge of their global range. There are important assemblages of mosses, liverworts & lichens, especially in the west. The UK's peatlands are of global significance (see Case Study D), and the UK has around 20% of European lowland heathland (English Nature 2002).

Extensive estuarine habitats in the UK, combined with relatively mild winters, mean that the UK hosts internationally important numbers of migratory wildfowl and waders which either winter here or pass through on migration before returning to their Arctic and Boreal breeding grounds. UK estuaries thus provide a vital link in the chain of important wetlands along the East Atlantic Flyway in which the UK is located geographically at a point where several migration routes from different parts of the Arctic converge.

The UK is home to an internationally important community of breeding seabirds, supporting over 7 million individuals across 25 species. Thirteen species of seabird that breed in the UK are present here in internationally important numbers. These include 80% of the world population of Manx shearwaters, over 50% of the world's Northern gannets, and 60% of the world population of great skuas. Outwith the breeding season UK seas support internationally important aggregations of seabirds, divers, grebes and seaduck.

Northern Ireland is particularly important in a European context for blanket bog, lowland raised bog, rush pasture and freshwater habitats.

Scottish assemblages of birds of Boreal-Arctic peatland, and of the montane plateaux and corries, have no counterparts elsewhere.

Wales has a distinct and special contribution to make to biodiversity conservation – there are a few comparably sized areas that have the diversity of habitats, species and geology in Europe. For example, 75 per cent of the Welsh coastal waters are of European importance and Wales has 40 per cent of the “rhos” pasture (purple moor grass and rush pasture) resource in the UK.

The seas of the UK extend to some 867,400km², which is more than three and a half times the land area. They encompass the transition zone between north-eastern, cold-water communities and south-western, temperate-water communities found along Western Europe. For this reason our waters are particularly important at a national and at a European scale for their exceptional variety of benthic habitats and high overall biodiversity (UKMMAS 2010). Marine species and habitats in the UK are also valued by society, and economic valuation studies reveal that the UK population places substantial value (of the order of billions of pounds sterling) on the ongoing existence and conservation of UK marine biodiversity (Cefas 2012).

Case Study A: Promoting the benefits of biodiversity to all

Engagement by the public with the natural environment is essential if its value to our quality of life is to be appreciated and conserved for future generations. Examples of education, awareness, and participation are given below:

Participation

Increasing the number of visits to the outdoors is a National Indicator within Scotland's [National Performance Framework](#) (The Scottish Government 2011a), which has an objective of 'improving Scotland's natural and built environment and the sustainable use and enjoyment of it'. Such visits encourage a stronger outdoor culture and help instil greater personal commitment to biodiversity. SNH's '[Simple Pleasures Easily Found](#)' campaign is aimed at encouraging people to explore and enjoy their local green space and path networks. In 2013, the [Year of Natural Scotland](#) aimed to inspire both residents and visitors to celebrate Scotland's nature, its outstanding natural beauty, landscapes, wildlife and biodiversity. It was an opportunity to promote responsible enjoyment of Scotland's built and natural heritage and conservation, and to encourage young people to enjoy Scotland's outdoors. These activities promote income generation to ensure the long-term sustainability of Scotland's natural assets. Within England, the National Trust has been promoting outdoor activities through [50 things to do before you're 11½](#). Environmental volunteering is another important means of increasing physical activity and engagement with nature – as measured through the UK [volunteer time spent in conservation indicator](#).

Increased participation in voluntary biological recording is being encouraged through 'citizen science' initiatives such as the National Biodiversity Network (NBN) Gateway <https://data.nbn.org.uk>; NBN Trust <http://www.nbn.org.uk/>; National Federation of Biological Recorders <http://www.nfbr.org.uk/>; Association of Local Record Centres <http://www.alerc.org.uk/>; Biological Records Centre <http://www.brc.ac.uk/>; and Citizen Science information: <http://www.ukeof.org.uk/our-work/citizen-science>.

Education

The role of outdoor learning is firmly established in the new [Scottish Curriculum for Excellence](#), and is part of Education Scotland's school inspection programme. There are also good examples of school grounds that encourage physical activity and contact with nature. More needs to be done, particularly in central Scotland, to ensure that all schools either have such resources or can obtain them locally. School building, refurbishment programmes and estate management plans need to make better provision for green space and contact with nature, building on the work of [Grounds for Learning](#), [Eco-Schools](#), and the [Forest Schools Programme](#).

The [National Curriculum in England](#) has been revised, and a new programme of study for all primary and secondary pupils will be introduced from September 2014. The National Curriculum for geography (for secondary pupils) aims to ensure that '*all pupils understand*

how human and physical processes interact to influence, and change landscapes, environments and the climate; and how human activity relies on effective functioning of natural systems'. In recent years, myths about red-tape and bureaucracy had become a barrier to learning outside of the classroom. Recognising that encouraging learning in the natural environment is an important way of raising awareness of biodiversity amongst school children, the Health and Safety Executive have issued revised guidance on school visits outside of the classroom.

Health

The contribution that nature and landscapes can make to health and quality of life is increasingly recognised by the medical profession and policy makers more generally. The Scottish Ministerial Task Force on Health Inequalities (2008) recommended that Government, NHS boards and other public sector organisations should take steps to encourage the use and enjoyment of green space by all, as a means of improving health. Equally, the Scottish Government's strategy on health and the environment, *Good Places, Better Health* (2008), recognises that the physical environment has a significant impact on the health of Scotland's people and that action is required to create positive physical environments that nurture better health and well-being for everyone. It focussed on children's health, setting a vision in which *'children play, explore and relax outdoors in streets, parks, green places and open spaces and have contact with nature in their everyday lives'*.

Place-making

The provision of good quality green space, parks and paths, and associated green networks, is an important component of place making and regeneration. This is supported by national planning policy and practice. Most ambitiously, the [Scottish National Planning Framework 2](#) (2009) proposed the development of a Central Scotland Green Network, with the aim of creating *'an environment to support healthy lifestyles and good physical and mental wellbeing'*. More generally, strategic approaches such as open space audits and core path plans are valuable tools for local authorities, especially when complemented by investment programmes targeted at increasing the opportunities for public enjoyment and the biodiversity value of the green space created.

In the [Natural Environment White Paper](#), published in July 2011, the Government pledged to introduce a new Green Space designation that would give local people in England the opportunity to protect green spaces that have significant importance to their local community. The [National Planning Policy Framework](#), published in March 2012, provides for the local green space designation.

Q2: What major changes have taken place in the status and trends of biodiversity in your country?

2.1 UK Biodiversity Indicators

Nine UK biodiversity indicators track the changes in status of species and habitats within the UK. Not all species and habitats are covered, but the indicators include habitats and species of European importance, priority species, birds, butterflies, plants, bats, and plant and animal genetic resources – the results of the indicators are summarised here, with more detail provided in Appendix 5.

The indicators give a mixed picture.

Indicator C3 (status of European habitats), shows that for the habitats included in the European Habitats Directive Article 17 report, there was a decline in the number of habitats in favourable or improving condition, from 53 per cent in 2007 to 34 per cent in 2013. However, some of this decrease is due to new evidence of the impact of airborne pollution, and should not be attributed to a real decrease in condition. The conservation status of 25 per cent of the habitats was declining in 2013, an improvement from 30 per cent in 2007. The status of 35 habitats improved or remained favourable (e.g. machair, calcareous fens), while the status of 39 habitats remained unfavourable (e.g. coastal lagoons) or declined (e.g. blanket bogs). There is insufficient information to make a longer-term assessment for this indicator.

Indicator C4b illustrates that there has been an increase in the number of European protected species in favourable conservation status, from 26 per cent in 2007 to 39 per cent in 2013. However, despite this improvement, less than half of the species were in favourable or improving status in 2013. In terms of the larger group of priority species recognised at the country level for which annual data are available (indicator C4a), there has been both a long- and a short-term decline; between 2005 and 2010, the status of priority species declined by 7 per cent, with 41 per cent of species showing an increase in abundance, and 59 per cent a decline.

Indicators C5–C8 show changes in status of more common species, by taxonomic group and/or habitat. Different groups of species show different trends.

Populations of breeding farmland birds, water and wetland birds, and seabirds have shown recent declines, whereas woodland birds have increased (indicator C5). Between 2006 and 2011, populations of woodland birds rose by 7 per cent, whilst populations of breeding farmland birds declined by almost 10 per cent, and water and wetland birds by 13 per cent. Between 2007 and 2012 the populations of seabirds declined by 9 per cent.

There has been little or no overall significant change in populations of butterflies (indicator C6) in the short-term (2007–2012); the same is true for the long-term trend of butterfly species of the wider countryside, although butterflies with specialist habitat requirements show a decline in the long term of 83 per cent.

Plant species richness (indicator C7) has improved in both the long- (1990–2007) and the short-term (1998–2007) for arable and horticultural land, but has declined in the long- and the short-term for woodland and grassland and boundary habitats. However, there have been no new data collected since 2007.

Bat populations (indicator C8) are considered to be a good indicator of the broad state of wildlife and landscape quality because they make use of a wide range of habitats across the

landscape and are sensitive to a broad range of pressures. Bats have historically undergone severe declines, with data from colony counts of pipistrelle bats showing a historical decline of 59 per cent from 1977 to 1999. Overall, in the long term (1999–2012), bat populations have shown an increase of 18 per cent; however, more recently (2007–2012) there has been little or no overall change.

Indicator C9 illustrates changes in animal and plant genetic resources for food and agriculture, which are an important component of our biological diversity. Indicator C9a measures effective population size of native sheep and cattle breeds – a low effective population size signifies a greater likelihood of inbreeding and risk of loss of genetic diversity in these animals. The mean effective population size for cattle breeds most at risk of loss of genetic diversity rose by 32 per cent between 2001 and 2007. There was no significant change for sheep. In addition, there has been no reported extinction in the UK of any breed of sheep or cattle since 2001.

Indicator C9b measures the number of accessions to collections of plant genetic resources, and the cumulative Enrichment Index, which is an assessment of the genetic diversity held in gene banks. There was a rapid rise in the Enrichment Index between 2000 and 2009, as a result of concerted efforts to develop the Millennium Seed Bank at Royal Botanic Gardens Kew; a 19 per cent increase in the Enrichment Index between 2007 and 2012 is observed.

Other indicators which show status and trends in habitats and species in the UK are C1c (condition of A/SSSIs) (see Section 7), and D1 (fish size classes in the North Sea) (see Section 4).

Of the nine UK biodiversity indicators which directly measure the status and trends of biodiversity, covering 20 measures, Table 2.1 shows that 12 of the measures (60%) are improving or show no overall change, and seven of the measures (35%) are deteriorating in the short term. In the long term (at least ten years) fewer measures can be assessed. Six of these are improving or show no overall change, whereas nine show deterioration. The data available to make an assessment are improving.

Table 2.1 UK indicators of biodiversity status: summary of results.

	Long-term (at least ten years) Number of measures	Short-term (usually latest five years) Number of measures
Improving	5	7
Little or no overall change	1	5
Deteriorating	9	7
Insufficient data or not assessed	5	1

(**Note:** data are from the following measures C1c, C3, C4a, C4b, C5a, C5b, C5c, C5d, C5e, C6a, C6b, C7a, C7b, C7c, C8a, C8b, C9ai, C9aii, C9b, D1.)

The indicators focus on the status of the most easily measured biodiversity. A more wide-ranging review of the status and trends of UK biodiversity was undertaken for the *UK National Ecosystem Assessment* and forms Chapter 4 of the NEA technical report (UK NEA 2011b).

2.2 Other evidence: terrestrial, freshwater and coastal

2.2.1 Northern Ireland

Many key elements of Northern Ireland's biodiversity continue to decline. For example, many of Northern Ireland's priority habitats are declining, as shown in Table 2.2 – grassland

habitats have declined most. However, priority woodland habitats have significantly increased in area.

Table 2.2 Status of Northern Ireland priority habitats (2000–2012) from *From Evidence to Opportunity: A Second Assessment of the State of Northern Ireland’s Environment* (NIEA 2013).

Status	Number of priority habitats
Decline	18 (36%)
Increase	5 (10%)
Stable / No clear trend	15 (30%)
Unknown	13 (24%)

A number of priority species are also declining, for example breeding waders such as curlew.

Biological recording and monitoring in Northern Ireland lags behind the rest of the UK and there are considerable gaps in our knowledge of species distribution and abundance.

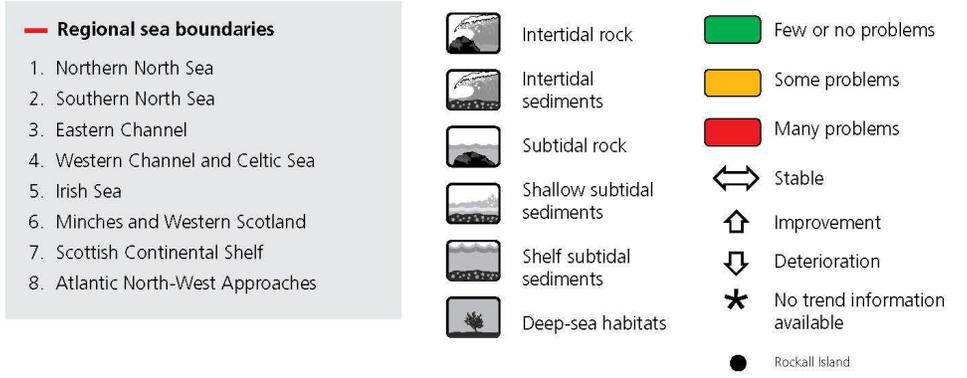
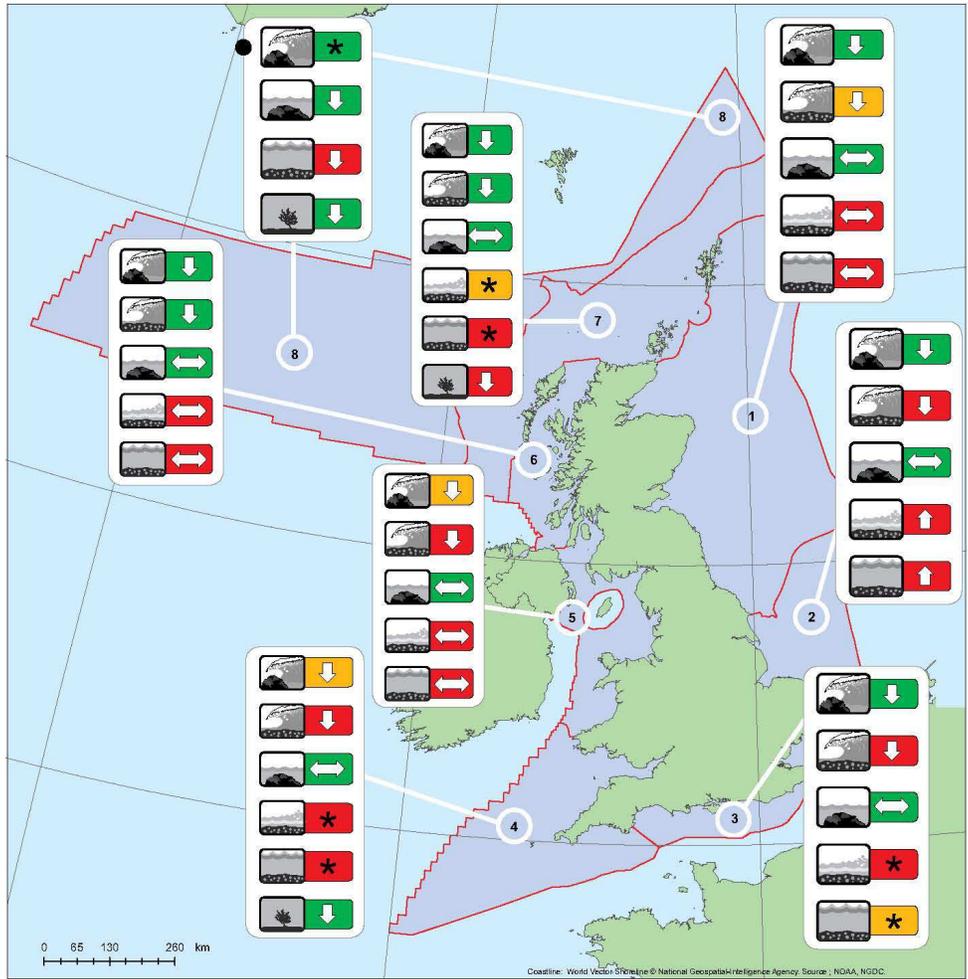
2.2.2 Scotland

Scotland’s 2010 assessment (Mackey & Mudge 2010) showed that biodiversity loss had been slowed where targeted action had 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 demonstrated that biodiversity loss had not yet been halted and would require renewed and sustained effort over a longer period.

Research now suggests that the vegetation of the north-west Scottish Highlands has undergone marked biotic homogenization over the last 50 years, manifested through a loss of various aspects of diversity at the local, community and landscape scales. These changes are thought to be driven by climate warming and acidification, although over-grazing may also be important (Britton *et al* 2009; Ross *et al* 2012; Flagmeier *et al* in press).

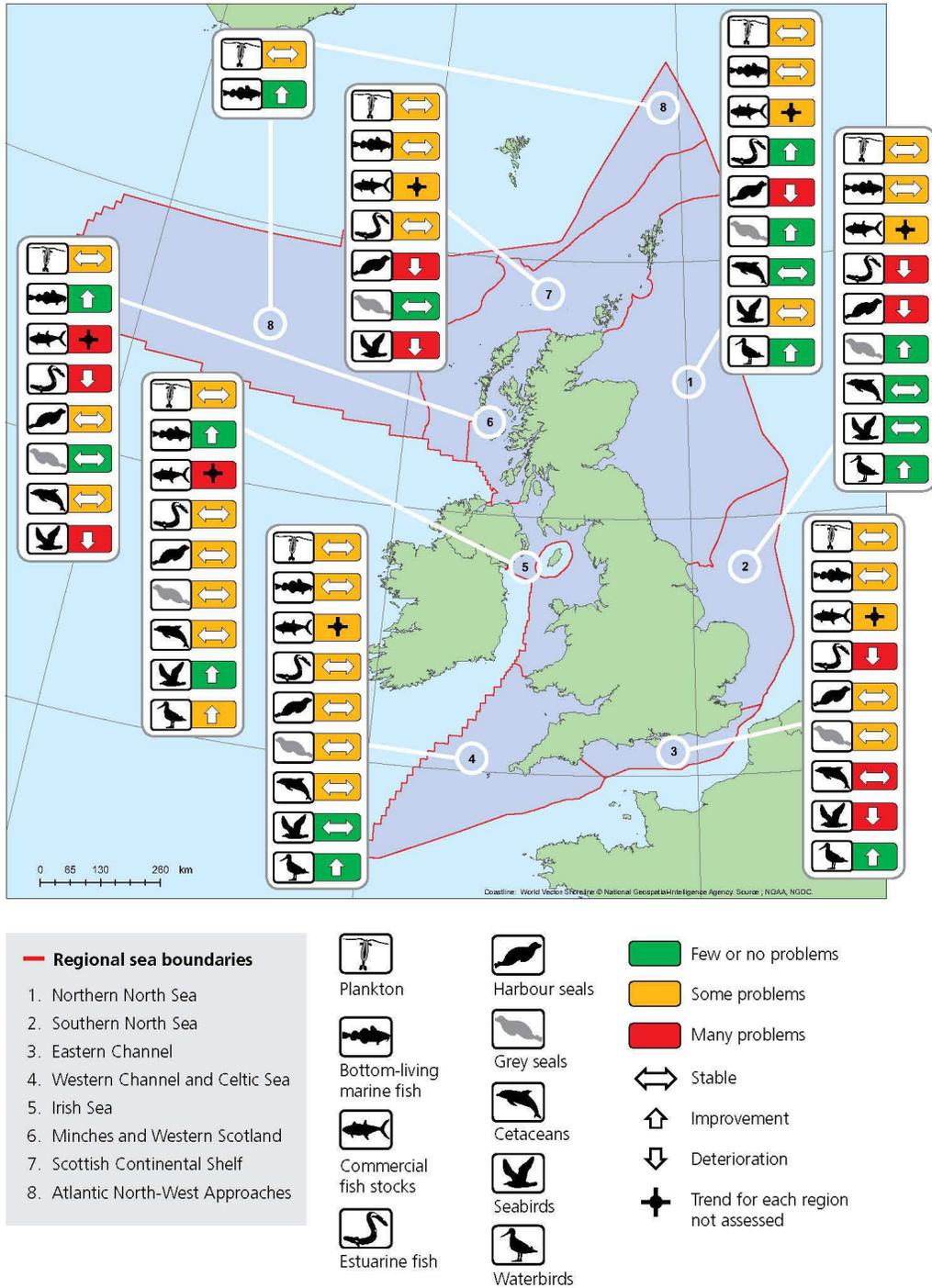
2.3 Other evidence: UK marine

Charting Progress 2 (UKMMAS 2010) shows changes in the status of marine habitats and species, summarised in Figures 2.1 and 2.2. Against a historical decline, the diversity and overall abundance of bottom-dwelling fish have improved appreciably in most regions because of better fishing management practices, but many stocks are still being fished unsustainably. Many estuaries have become cleaner which has led to an increase in both the diversity and numbers of fish. Many species of waterbird that spend the winter along the UK’s coast, such as golden plover and black-tailed godwit, are also increasing in abundance in most regions. Numbers of breeding seabirds have declined since 2005 by 9% on average across species. Numbers of harbour seals are also declining in some regions, while grey seals have experienced a long-term population increase. The reasons for the difference in population trajectories of the two seal species are unknown.



4

Figure 2.1 Healthy and biologically diverse seas – habitats.



5

Figure 2.2 Healthy and biologically diverse seas – species.

For more detailed information from *Charting Progress 2* on the status and trends of UK marine habitats and species, see the *Healthy and Biologically Diverse Seas Feeder Report* (<http://chartingprogress.defra.gov.uk/healthy-and-biologically-diverse-seas-feeder-report>) and associated summaries, which cover benthic habitats, microbes, plankton, fish, seals, turtles, cetaceans and marine birds.

Two species groups were not fully assessed in *Charting Progress 2*:

Microbes

Microbes account for almost all of the ocean's primary productivity and so provide essential supporting services, as well as being one of the most important and extraordinarily diverse forms of life on our planet. In the marine environment they exist in complex, inter-dependent food webs with the rest of the oceanic biosphere. Despite our reliance on microbes for the health and sustainability of our marine life and indeed our planet, we still lack a fundamental understanding of the complex roles they play in UK waters. Therefore, there is insufficient evidence to assign a current or future health status for this dynamic group (UKMMAS 2010).

Marine Turtles

The UK is committed to the conservation of marine turtles. Of the four species occasionally reported here, the leatherback turtle *Dermochelys coriacea* is the most common and is regarded as a true member of the British fauna. UK waters represent a small peripheral part of its summer foraging habitat, with on average 33 records per year. While globally this species is considered to be vulnerable in the IUCN Red List and of least concern in the NW Atlantic population from which turtles in UK waters are derived, current information is insufficient to be able to assign a conservation status within UK waters or interpret any trends (UKMMAS 2010).

Q3: What are the main threats to biodiversity?

3.1 UK Biodiversity Indicators

Five UK biodiversity indicators demonstrate changes to various pressures on biodiversity, including climate change, pollution, habitat fragmentation, invasive species, and marine fisheries, over the long- and short-term. The trends in the indicators are summarised here, with more detail provided in Appendix 5.

Climate change

The Spring Index (B4) highlights the biological response to climate change through the impact of temperature change on the timing of biological events such as flowering or migration in the spring. The Spring Index for the UK has high year-to-year variability, but the indicator shows that since 1999 biological events in the spring have occurred significantly earlier than in the period 1891 to 1947 – by up to 7.5 days in advance. Whilst this provides clear evidence of biological impacts from climate change, the extent and nature of any associated impacts on biodiversity are not precisely known.

Pollution

Pressures from both air pollution (indicator B5a) and marine pollution (indicator B5b) are decreasing. In the terrestrial environment, acid deposition critical load exceedance has declined in the long term, from 73 per cent of the area of sensitive habitats in 1996, to 49 per cent in 2010. There has also been a decrease in the short term since 2005. Nitrogen deposition critical load exceedance has also decreased, although to a lesser extent, from 75 per cent in 1996 to 68 per cent in 2010. However, air pollution remains the most widespread pressure on protected habitats. In the marine environment, levels of six of the most hazardous substances have decreased over the period 1990 to 2001, in some cases by more than 75 per cent. Levels of all of the six substances measured have also decreased in the short term, between 2006 and 2011.

An indicator of water quality (B7) based on good ecological status, is currently under development. Interim data suggest that in 2009, 37 per cent of surface water bodies were at high or good ecological status, with estuaries and coastal waters, and lakes both at 43 per cent.

Invasive species

Indicator B6 outlines the changes in the extent of 49 widely established invasive non-native species in freshwater, marine and terrestrial environments, from 1960 to 2008. The indicator demonstrates that there is increasing pressure from invasive marine, terrestrial and freshwater invasive species in the long term (between 1990 and 2008), and from terrestrial and marine species in the short term (between 2000 and 2008), although there has been little or no overall change in the extent of invasive species in the freshwater environment in the short term.

Habitat fragmentation

Indicator C2 is a measure of connectivity – the size and distribution of patches of habitat, and the relative ease with which typical species can move through the landscape between the patches. For neutral grassland habitats, a continuing increase in the degree of connectivity (and hence a decrease in fragmentation) can be observed between 1990 and 2007, although the change between 1998 and 2007 is not statistically significant. Further analysis is required to explain the changes in connectivity, and until this has been undertaken, the indicator for both habitats is considered to have insufficient data for a definitive assessment of change to be made.

3.2 Other evidence: Article 17 report

Every six years the UK reports to the European Union (under Article 17 of the European Habitats Directive) on the implementation of the Directive, including the conservation status of all species and habitats protected under the Directive. Table 3.1 summarises evidence from the 2013 report, to show which pressures have the greatest impact on terrestrial habitats of European importance.

Table 3.1 Major pressures affecting UK terrestrial habitats. (The table covers most semi-natural habitat types within the terrestrial part of the UK, and is derived from information collected for the UK 2013 European Habitats Directive Reporting (go to <http://jncc.defra.gov.uk/page-6563> for the source data). It shows pressures reported as having High or Medium impact on the highest number of habitats. Where there is an X in a cell, this indicates that the pressure has High or Medium impact on more than half of these types of habitat, suggesting that it is particularly important for this type.)

	Coastal habitats	Freshwater habitats	Heathland habitats ¹	Lowland grassland habitats	Lowland wetland habitats	Upland habitats ¹	Woodland habitats
Livestock grazing, including both over- and under-grazing	X		X	X	X	X	
Air pollution/air-borne pollutants ²			X	X	X	X	X
Human-induced changes in hydraulic conditions ³	X	X			X		
Pollution to surface waters, including point sources and diffuse pollution		X			X		
Invasive non-native species		X					X
Excessive browsing/grazing/trampling by wild deer			X			X	X
Succession, mainly resulting in scrub/tree invasion			X		X		
Changes in abiotic conditions related to climate change, mainly due to sea-level rise	X						
Recreational activities, mainly resulting in trampling and erosion damage	X						
Afforestation			X				
Fire and fire suppression, including over- and under-burning			X				
Nutrient enrichment from agricultural activities			Widespread pressure				
Problematic native species ⁴			X				
Renewable abiotic energy use, mainly wind turbines and associated infrastructure			X				
Pollution to groundwater, including point sources and diffuse pollution					X		
Disease/pathogens, mainly introduced diseases of trees							X
Forest and plantation management, including replanting and forestry operations							X

Notes:

- 1 Heathland habitats include lowland and sub-montane, but not montane heaths; upland habitats include montane, but not other upland heaths.
- 2 For example, acid rain and nitrogen deposition.
- 3 For example, land reclamation, dredging, canalisation, modification of flooding/rivers/tidal currents, water abstraction, embankments/coastal protection works.
- 4 Mainly bracken and gorse invasion.

3.3 Other evidence: UK NEA and Climate Change Report cards

The *UK National Ecosystem Assessment* (2011b) ranked the longer-term importance of, and future trends in, the impacts of five major direct drivers on wild species diversity as follows:

1. Habitat change (land use/condition) – very high impact since 1940s and increasing;
2. Pollution and nutrient enrichment – very high impact since 1940s and decreasing;
3. Overexploitation – very high impact since 1940s and increasing;
4. Invasive species – high impact since 1940s and increasing; and,
5. Climate change – moderate impact since 1940s and increasing rapidly in the UK.

A more detailed review was undertaken for the importance of drivers for different taxonomic groups (see Table 4.5 from UK NEA 2011b).

The Living with Environmental Change (LWEC) partnership produced a *Terrestrial Biodiversity Climate Change Impacts Report Card* (Morecroft & Speakman 2013). Evidence from the *UK NEA* and the report card shows how climate change is already affecting the UK's terrestrial biodiversity. Impacts include changes in: species ranges; species distributions; the timing of some lifecycle events (e.g. flowering, eggs hatching); and community compositions. For example, climate change appears to have affected river biodiversity – populations of trout and salmon have declined by up to 60% in some UK catchments, and this has been attributed to a rise in river temperatures which has occurred over the last 30 years (UK NEA 2011a).

Climate change may also lead to an increased risk from non-native species, pests and diseases; and an increased frequency of extreme weather events such as droughts and floods; it may also interact with and exacerbate the impact of other pressures on biodiversity such as land-use change and pollution (Morecroft & Speakman 2013).

It is anticipated that there will be regional differences in the impact on climate change on biodiversity. However, some habitats are recognised as being particularly vulnerable to climate change, such as montane habitats (from increased temperatures), wetlands (from changes in water availability), and coastal habitats (from sea-level rise) (Morecroft & Speakman 2013).

3.4 Other evidence: UK countries

3.4.1 Northern Ireland

The key driving forces are land-use change, particularly agriculture and rural development; urbanisation; nutrient enrichment in freshwater habitats; invasive species; plant and animal pathogens; and fisheries practices.

3.4.2 Scotland

Threats identified across the five main ecosystem settings include (Mackey & Mudge 2010):

- Coastal and marine: over-grazing, invasive species, and land management on land; sewage, manufacturing effluent, agricultural run-off, and fisheries management at sea.
- Lowland and farmland ecosystems: over-grazing, invasive species, and land management.
- Freshwater and wetland ecosystems: agricultural run-off, sewage, urban development, forestry, mining and quarrying, invasive species, and lack of remedial management.
- Woodland ecosystems: over-grazing, invasive species, and land management.
- Upland ecosystems: over-grazing, inappropriate burning, and invasive species.

A major challenge ahead will be climate change.

Threats to Scotland's important assemblages of mosses, liverworts & lichens include:

- Burning is the biggest threat to rare oceanic liverwort-heath.
- The invasive alien shrub *Rhododendron ponticum* is one of the biggest threats to internationally important communities of oceanic woodlands (<http://tinyurl.com/rhododendron-impact>).
- Climate change impacts on snowbed communities (Scottish Natural Heritage 2011).
- Both under- and over-grazing threaten woodland.

3.5 Other evidence: UK marine

In the UK marine environment the footprint of human activity extends to all areas as we seek to make use of the wealth of marine resources. The level of human activity is least in the more remote areas to the north and west of Scotland, and greatest close to the large centres of human population around the North Sea and Irish Sea. Coastal areas are under particular pressure from a combination of human activities, inputs of contaminants and nutrients, and climate change.

Charting Progress 2 (UKMMAS 2010) identified a number of UK-wide pressures on the marine environment including:

Fishing pressure

Fishing remains a widespread activity that continues to cause problems, with some assessed stocks fished unsustainably and some seabed habitats damaged. However, we benefit from this source of protein and there are some signs of improvements in recent years in both the status of bottom-living fish communities and a number of assessed fish stocks. During the past ten years, fishing mortality has declined significantly in 67 per cent of assessed fish stocks in UK waters. However, sub-tidal seabed sediment habitats in most areas are continuing to have many problems as a result of bottom trawling activity. There has been both loss of habitat and associated species, including fish, which are likely to be important to a functioning ecosystem. See also indicator D1 in Section 4 and Appendix 5.

Climate change and acidification

Climate change due to increasing atmospheric levels of greenhouse gases has raised sea temperatures in all regions. The clearest response to the rising temperature has been a northward shift in the distribution of plankton, certain fish species and rocky shore animals. This is particularly apparent in the North Sea which has experienced the biggest temperature change. There is good evidence to show that the increasing atmospheric concentration of carbon dioxide (CO₂) is contributing to the acidification of the oceans. Model assessments indicate that UK waters are acidifying, but further evidence to confirm the rate of change is needed. There is more detail in the Marine Climate Change Impacts Partnership (MCCIP)'s *2013 Annual Report Card* which provides updates on how climate change is affecting our seas.

Hazardous substances

Inputs of measured hazardous substances included in monitoring programmes have fallen in most areas but there are still some problems. Elevated concentrations tend to be localised to some industrial estuaries and coastal areas.

Eutrophication

Nutrients from agriculture and waste water can have an impact on the marine ecosystem. Marine eutrophication problems were identified in some small estuaries and harbours.

Q4: What are the impacts of the changes in biodiversity for ecosystem services and the socio-economic and cultural implications of these impacts?

4.1 UK Biodiversity Indicators

UK biodiversity indicators D1 and D2 are intended to help assess biodiversity and ecosystem services in the marine (D1) and terrestrial (D2) environments. The results of D1 are summarised here, with more detail available in Appendix 5.

Indicator D1 is a measure of fish sizes in the Northern North Sea. This measure responds to fishing impacts, because when fish communities are more heavily fished, the proportion of large fish is expected to fall. The indicator demonstrates that the proportion of large fish in the North Sea rose from a low of 2.1 per cent in 2001 to 10 per cent in 2011, showing a steady increase, although the value in 2011 is less than the value in 1983 of 23 per cent. The indicator suggests that although sustainability of UK fishing declined in the 1980s and 1990s, in the last ten years it has started to improve, contributing to a range of ecosystem services.

Indicator D2 (biodiversity and ecosystem services (terrestrial)), is under development, but no data are yet available.

4.2 Other evidence

Recent scientific literature highlights evidence that loss of biodiversity reduces the functioning of ecosystems, and emerging evidence suggests direct links between biodiversity and specific ecosystem services (Cardinale *et al* 2012).

4.2.1 UK

The *UK National Ecosystem Assessment* shows how delivery of ecosystems has changed in the period since 1990. Of the range of services provided in the UK by eight broad aquatic and terrestrial habitat types and their constituent biodiversity, about 30 per cent have been assessed as declining. These include provisioning of wild-caught fish in freshwaters and coastal margins, supply of clean water, and regulating of hazards (such as flooding, erosion and fire), noise, soil quality and pollination. Many others are in a reduced or degraded state, including marine fisheries, wild species diversity, and some of the services provided by soils. Reductions in ecosystem services are associated with declines in habitat extent or condition and changes in biodiversity, although the exact relationship between biodiversity and the ecosystem services it underpins is still incompletely understood (UK NEA 2011a).

The extent of woodland in the UK has increased in recent years, improving a range of provisioning, cultural and especially regulating services, such as air quality and carbon sequestration for climate regulation (UK NEA 2011a).

A recent study (GHK Consulting Ltd 2011) has estimated that the ecosystem services generated by Sites of Special Scientific Interest (SSSIs) in England and Wales in 2011 were worth £956 million per year, and that if all SSSIs were in favourable condition this value would increase by a further £769 million per year. The estimated cost of providing the existing £956 million per year of benefits is £111 million per year, so it suggests there are substantial net benefits to society of protecting our best nature conservation sites and improving their condition.

Green infrastructure (GI) refers to the living network of green spaces, water and other environmental features in both urban and rural areas. A recent study (EFTEC 2013) of urban examples suggests that, like other infrastructure, GI is essential to the healthy economic functioning of cities. It makes a contribution to the resilience, and sustainability, of economic growth in a particular place, and potentially to national economic growth if it makes UK cities more attractive to global investors.

Natural habitats support a range of wild pollinators that can increase crop yield through provision of a resilient and complementary pollination service. A diversity of pollinators can provide an insurance service to reduce the expected costs of crop failure if outbreaks of pests and diseases affect commercial or managed pollinators (Vanbergen *et al* 2014). The *UK National Ecosystem Assessment* estimated the production value of insect pollination to be £430 million (in 2007) or about 8% of the total market value of crop production, although this estimate was based on a very small evidence base with several uncertainties. See Section 7.2 for more detailed figures from pollination strategies.

There are strong linkages and synergies between different components of the marine environment, which contribute to the provision of ecosystem services. This would be expected in such a large and interconnected habitat as the UK's estuarine, coastal, shelf and deep-sea waters. Any changes in marine biodiversity could, therefore, lead to impacts for marine ecosystem services (UK NEA 2011a). However, current scientific understanding and evidence does not allow us fully to understand these complex relationships or quantify the impacts of changes in biodiversity for ecosystem services.

Currently, it is understood that in the marine environment, the amount of service, and hence the benefit derived, will vary according to the marine habitat and/or the geographic location.

Consideration of three key marine communities – (a) pelagic microbial communities (including phytoplankton and zooplankton); (b) benthic bioturbators (organisms living in seabed sediments whose physical activities, such as feeding, burrowing and irrigation, disturb the sediment); and (c) fish – suggests that they contribute to important supporting services. These in turn support regulating services such as gas and climate regulation and flood protection, which benefit the global environment as well as the UK's, and their value is likely to exceed that of the more easily measurable provisioning services supplied by our seas (UK NEA 2011b).

4.2.2 Northern Ireland

Awareness of the importance of ecosystem services provided by the natural environment has seen a great increase in recent years. However, only limited activity is currently being undertaken to restore damaged ecosystems, for example the Sustainable Catchment Area Management Planning (SCAMP) projects undertaken by Northern Ireland Water (NI Water 2011).

4.2.3 Scotland

The *UK National Ecosystem Assessment* (UK NEA 2011a,b) highlighted some of the implications of changes in biodiversity and ecosystems for ecosystem services and related socio-economic and cultural benefits:

- The functioning of nutrient cycling in Scottish habitats has been largely altered by pollution from nitrogen deposition and the application of fertiliser to arable systems. The pollution is compounded by large loads of other pollutants from atmospheric deposition, which occurs due to Scotland's considerable rainfall. This has detrimentally affected Scottish soils and vegetation.

- There is a continuing loss of soil carbon in arable systems with consequences for soil quality for agriculture.
- A decline in insect pollinators may have implications for their pollination services to agricultural production which are estimated to be worth £43 million per year in Scotland.
- The delivery of provisioning services from Scottish terrestrial ecosystems has increased considerably, especially from agriculture. For example, since the 1940s barley production has increased ten-fold to 1.7 million tonnes in 2000, and wheat has increased six-fold to 800,000 tonnes during the same period. Livestock contributes nearly half of the value of Scottish agricultural production.
- Fish production from marine systems is important not only to Scotland's economy as a whole, but also for coastal communities. The catch of wet fish has declined, largely from overfishing. The shellfish fishery has, in contrast, grown significantly.
- A decrease in extent or quality of green space may be linked to a decline in the time young people spend outdoors with implications for health and well-being; however efforts are being made to improve green space.
- Improvements in water quality in rivers have led to the return of salmon to some Scottish rivers from which they had all but disappeared, with economic and cultural benefits related to salmon angling.
- The degradation of peatlands and peat soils has resulted in increasing greenhouse gas emissions and a decline in water quality due to increased loads of dissolved organic carbon in rivers.

Case Study B: Cambrian Mountains Initiative

The [Cambrian Mountains Initiative](#) is a wide-ranging sustainable development project that aims to help promote rural enterprise, enhance the environment and add value to agricultural and environmental products and services over an area of almost 197,000ha. The natural environment within the Cambrian Mountains is significant; 15 per cent of the land area is designated as internationally important for wildlife under the European Habitats Directive. However, climate change is predicted to cause major alterations to Wales' landscapes and biodiversity over the next century, and to put stresses on the delivery of ecosystem services. The Cambrian Mountains provide an excellent opportunity to work in close partnership with the farming community to lead the way in experimenting with and identifying new approaches to sustainable multi-purpose land management in the uplands. The Cambrian Mountains Initiative aims to pilot and demonstrate the major components that are a prerequisite for modern landscape management capable of rising to the challenges of today and of the future. The goal is to develop a blueprint that can be scaled-up for use across Wales. Ecosystems research carried out in the Cambrian Mountains to date include:

[Measuring holistic carbon footprints for lamb and beef farms](#): The footprint methodology developed (taking account of sequestration processes on 22 farm holdings) underpins the environmental management objectives of the producers' marketing their lamb under a Cambrian Mountains brand, and highlights the wider potential contribution of holdings to the emerging carbon market.

[Cambrian Mountains adaptive landscapes project](#): A spatial study which identifies opportunities for land-use change to provide optimal delivery of four ecosystem services: carbon storage, flood minimisation, agricultural production, and biodiversity resilience within three catchments. The study delivered an integrated vision of market and non-market driven land use in the catchments through the development of a highly visual, map-based negotiation tool (Polyscape) that could present 'trade off' scenarios between competing services.

Valuing the ecosystem services provided by the Cambrian Mountains: This study calculated a monetary value for a range of the ecosystem services currently provided within the Cambrian Mountains. The report also looked at examples of potential mechanisms for realising this value, including the development of schemes for payment for a range of ecosystem services: the sequestration of soil carbon, the improvement of water quality and supply, and the mitigation of flood risk.

[Landscape and Ecosystems Futures and Perceptions in the Cambrian Mountains](#): a study investigating attitudes towards the delivery of functioning markets in ecosystem services in the Cambrian Mountains that explored the views of stakeholders both within and outside of the geographic area of the Cambrians. A picture emerged of an attitudinal mismatch between service producers and consumers, with a considerable degree of pessimism within the producer community in terms of future trends and ability to influence them positively – juxtaposed with greater optimism and willingness to pay amongst consumers.

Restoration of blanket bog on the Berwyn Migneint SAC: Despite being extensively drained and ditched in the past, the Migneint is an important store of carbon, one of the largest of its kind in Wales, and has the potential to become a nationally important carbon sink. Approximately 170km of ditches on the peat moorland were blocked to increase the resilience of the carbon-rich moorland in the face of climate change, encourage a rich ecosystem, and allow a fully-functioning bog to develop. The re-wetting will allow *Sphagnum* to flourish, and thereby re-instate a more natural structure to the bog, including the development of bog pools. The aim is to restore a naturally functioning ecosystem so that all of its typical and uncommon species are able to sustain themselves.

Pumlumon Project: Climate change affects wildlife and people. If the countryside and environment are healthy, then plants and animals can adjust to this change. If the countryside is managed in the right way, it will help keep air clean, water safe, food plentiful, and homes secure from flooding. The Pumlumon Project, spanning more than 40,000ha of the northern Cambrians and one of the biggest projects of its kind in Europe, is about changing the way the uplands are managed to keep the natural environment healthy. These aims can only be achieved by creating new working partnerships between conservation, farming and forestry, and tourism which will also help bring money into the area.

These studies have demonstrated:

- There is considerable market potential for the range of ecosystem services that the Cambrian Mountains produce;
- A number of tools exist that can help deliver the degree of spatial integration and planning that is required if these services are to be delivered synergistically;
- There is considerable consumer enthusiasm both within and outside the Cambrians for Cambrian Mountains goods and services;
- That consumers and Government have a role to play in paying for these services;
- But that the current state of government producer support, uncertainty surrounding the CAP and the inclement weather of the last few years has left many producers in the Cambrians feeling disempowered with regards to positively influencing the sustainable future of the area in which they farm.

Part II: The national biodiversity strategy and action plan, its implementation, and the mainstreaming of biodiversity

Q5: What are the biodiversity targets set by your country?

As the relevant objectives all appear in the biodiversity strategies and frameworks of the UK countries, to avoid repetition only brief mention is made here of high-level outcomes. More comprehensive evidence and reports are in Section 6, which covers strategies and action plans.

5.1 UK level

Priorities towards the five over-arching goals of the *Strategic Plan for Biodiversity 2011-2020* (CBD 2010) are identified in the *UK Biodiversity Framework* (JNCC & Defra 2012), which includes in its implementation plan 60 milestones over 23 areas of activity.

5.2 Four countries of the UK

5.2.1 England

The Department for Environment, Food and Rural Affairs (Defra) published *Biodiversity 2020: A strategy for England's wildlife and ecosystem services* in August 2011 (Defra 2011a), which draws on the suite of international targets in the *Strategic Plan for Biodiversity 2011-2020* (CBD 2010), adapted for an England context. It sets out England's vision, 2020 mission, and four high-level outcomes to halt biodiversity loss. Outcome 1 covers habitats and ecosystems on land (including freshwater environments); Outcome 2 includes marine habitats, ecosystems and fisheries; Outcome 3 deals with species; and Outcome 4 is about engaging people.

5.2.2 Northern Ireland

The current *Northern Ireland Biodiversity Strategy*, authored by the Northern Ireland Biodiversity Group was published in 2002 (Northern Ireland Biodiversity Group 2002). Its goal is for Northern Ireland to have the highest quality environment in the UK, with conservation of biological diversity fully integrated into policy making, in order to support the health of Northern Ireland's citizens, its wildlife and its economy.

5.2.3 Scotland

The *2020 Challenge for Scotland's Biodiversity* (The Scottish Government 2013) identifies seven strategic outcomes covering ecosystem health, sustainable growth and use of natural capital, human health and quality of life, protected areas and wildlife, sustainable land and water management, good status of coasts and seas, and indicators.

5.2.4 Wales

The *Environment Strategy for Wales (2006–2026)* (Welsh Government 2006) contains outcomes for biodiversity which cover: halting and recovering the loss of biodiversity, ensuring the wider environment is more favourable to biodiversity, achieving favourable condition for important sites for species and habitats, and good status for Welsh seas.

5.3 UK marine

The UK vision for the marine environment is for 'clean, healthy, safe, productive and biologically diverse oceans and seas'. The UK high-level marine objectives were published in April 2009 and these set out the desired outcomes for the UK marine area to achieve this vision, following a sustainable use approach (Defra 2009). The high-level objectives demonstrate a joint vision for England, Northern Ireland, Scotland and Wales, and aim to guide the development of policies to achieve sustainable development in the marine area and, more widely, will help inform and educate the public, business and voluntary sectors.

The high-level marine objectives are:

- Achieving a sustainable marine economy;
- Ensuring a strong, healthy and just society;
- Living within environmental limits;
- Promoting good governance;
- Using sound science responsibly.

There is currently no single strategy for the UK offshore marine environment which details the biodiversity targets set by the UK. However, the Aichi Biodiversity Targets of the *Strategic Plan for Biodiversity 2011-2020* (CBD 2010) are taken into account in offshore waters through the drivers and targets of other legislative policies.

In particular the UK is currently working to achieve or maintain 'Good Environmental Status (GES)' in UK marine waters by 2020 as part of requirements under the European Marine Strategy Framework Directive (MSFD). This follows an ecosystem approach to the management of human activities, and integrates the concepts of environmental protection and sustainable use. The definition of GES is broken down into 11 high-level qualitative descriptors in Annex I of the Directive, which represent targets to achieve.

In addition, the UK has a commitment under the Marine and Coastal Access Act 2009 to develop a network of Marine Protected Areas (MPAs) for the conservation or improvement of the marine environment in the UK marine area, and to protect the range of features present in the UK marine area (relating to English and Welsh inshore, and UK offshore waters).

Q6: How has your national biodiversity strategy and action plan been updated to incorporate these targets and to serve as an effective instrument to mainstream biodiversity?

6.1 UK level

In 2007 a new strategic framework *Conserving Biodiversity – the UK approach* (Defra 2007a) was published which placed greater emphasis on country-level strategies and mainstreaming biodiversity in different sectors. The *UK Biodiversity Framework* (JNCC & Defra 2012) continues this trend and is mainly confined to work needed to develop and comply with the UK's international obligations, to efficient gathering and use of evidence, and to a few areas where UK co-ordination of policy or action is seen to bring clear benefits. The *Framework* sets out the activities required at a UK level to address the five Goals of the *Strategic Plan for Biodiversity 2011-2020* (CBD 2010); the framework's Implementation Plan (JNCC 2013a) includes 60 milestones over 23 areas of activity. Many of these are important steps towards mainstreaming biodiversity, such as integrating biodiversity values into other policy sectors, innovative financial mechanisms, and understanding the impacts of pollution; there is focus on developing and sharing knowledge.

With respect to mainstreaming, the *UK Framework* includes a number of specific deliverables relating to the development of policy support tools and support for international initiatives such as:

- The publication of *Accounting for the value of nature in the UK - a roadmap for the development of natural capital accounts within the UK Environmental Accounts* (ONS 2012).
- Ongoing research to incorporate biodiversity into the *2050 Pathways Calculator* (DECC 2013), a tool to determine the mix of low-carbon technologies that supply our energy up to 2050, so that UK greenhouse gas emissions are reduced by at least 80 per cent by 2050 relative to 1990 levels.
- Work to embed the impacts of air pollution on biodiversity into policy evaluations; for example to support the UK position on the European Clean Air Policy Package (European Commission 2013).
- Research to develop methods to measure the impacts on global biodiversity of consumption in the UK (West *et al* 2013; Defra 2013a).
- Funding and leading the Ecosystem Services for Poverty Alleviation (ESPA) research programme, by the Department for International Development (DFID) and the UK research councils.
- Provide, through the International Climate Fund (ICF), £3.87 billion to help the world's poorest adapt to climate change, and to promote cleaner, greener growth.
- Support of the implementation of 'Wealth Accounting and the Valuation of Ecosystem Services (WAVES)' by the UK Government to establish environmental accounts in six to ten countries, develop guidelines for ecosystem accounting, and promote environmental accounting.
- Publication of guidance for incorporating biodiversity and ecosystem service values into NBSAPs (UNEP-WCMC 2013).

Responsibility for policy development and practical implementation to help achieve the Aichi Biodiversity Targets is devolved to the country level within the UK. Partnership work with non-government organisations and other stakeholders is also mainly focussed at the level of the country biodiversity strategies.

6.2 Four countries of the UK

Each country has incorporated lists of species and habitats of conservation importance into their legislation, conferring a 'biodiversity duty' on statutory bodies to have regard to the purpose of conserving biodiversity. This is an important measure to bring about mainstreaming (see Section 8.3). The country lists incorporate relevant priority habitats and species previously identified by the UK BAP (HMSO 1994).

6.2.1 England

The *Natural Environment White Paper (NEWP)* (Defra 2011b) was published in June 2011. The *NEWP* outlined the Government's vision for the natural environment, shifting the emphasis from piecemeal conservation action towards a more integrated landscape-scale approach, and how we can better value the natural environment in decision-making.

The core focus of the *NEWP* was on the importance of taking account of the value of nature. The *NEWP* contained 92 commitments, of which two-thirds have now been taken forward, putting in place important foundations for the longer term. Examples of commitments delivered under the *NEWP* include:

- The Office of National Statistics (ONS) is undertaking world-leading work to incorporate natural capital into our national statistics alongside measures such as GDP.
- New Treasury guidance, supplementing the *Green Book*, has been produced to help government departments take account of the value of nature as part of policy appraisal (Dunn 2012).
- The National Planning Policy Framework and associated guidance specifically references the role of ecosystem services and includes safeguards for biodiversity and ecosystems.
- 48 new Local Nature Partnerships have been established around England to provide a local approach to managing the natural environment in an integrated way.
- Following a national competition, in 2012 £7.5 million funding was awarded to 12 new Nature Improvement Areas (NIAs), generating significant additional investment from other sources.
- The Natural Capital Committee and the Ecosystem Markets Task Force (2013).

The new national strategy, *Biodiversity 2020: A strategy for England's wildlife and ecosystem services* was a key action from the *NEWP*. This was one of the first national strategies to be produced in response to the *Strategic Plan for Biodiversity 2011-2020* (CBD 2010) agreed at Nagoya in 2010 and sets out challenging, generational ambitions.

Biodiversity 2020 (Defra 2011a) sets out England's vision, 2020 mission and a series of priority actions that will be needed to deliver our outcomes. These actions are grouped into four priority areas:

- A more integrated large-scale approach to conservation on land and sea (Broadly reflects goals C and D of the *Strategic Plan for Biodiversity 2011-2020* (CBD 2010))
- Putting people at the heart of policy (Broadly reflects goal A)
- Reducing environmental pressures (Broadly reflects goal B)
- Improving our knowledge (including monitoring and reporting) (Broadly reflects goal E)

England's vision is that '*by 2050 our land and seas will be rich in wildlife, our biodiversity will be valued, conserved, restored, managed sustainably and be more resilient and able to adapt to change, providing essential services and delivering benefits for everyone*'.

England's 2020 mission is 'to halt overall biodiversity loss, support healthy well-functioning ecosystems and establish coherent ecological networks, with more and better places for nature for the benefit of wildlife and people'. Four over-arching outcomes have been agreed, which draw on the Aichi Biodiversity Targets, adapted for an England context.

The *Biodiversity 2020* outcomes are as follows.

Outcome 1 – Habitats and ecosystems on land (including freshwater environments)

By 2020 we will have put in place measures so that biodiversity is maintained and enhanced, further degradation has been halted and where possible, restoration is underway, helping deliver more resilient and coherent ecological networks, healthy and well-functioning ecosystems, which deliver multiple benefits for wildlife and people, including:

- 1A. Better wildlife habitats with 90 per cent of priority habitats in favourable or recovering condition and at least 50 per cent of Sites of Special Scientific Interest (SSSIs) in favourable condition, while maintaining at least 95 per cent in favourable or recovering condition;
- 1B. More, bigger and less fragmented areas for wildlife, with no net loss of priority habitat and an increase in the overall extent of priority habitats by at least 200,000ha;
- 1C. By 2020, at least 17 per cent of land and inland water, especially areas of particular importance for biodiversity and ecosystem services, conserved through effective, integrated and joined up approaches to safeguard biodiversity and ecosystem services including through management of our existing systems of protected areas and the establishment of nature improvement areas;
- 1D. Restoring at least 15 per cent of degraded ecosystems as a contribution to climate change mitigation and adaptation.

Outcome 2 – Marine habitats, ecosystems and fisheries

By 2020 we will have put in place measures so that biodiversity is maintained, further degradation has been halted and where possible, restoration is underway, helping deliver good environmental status and our vision of clean, healthy, safe productive and biologically diverse oceans and seas. This will be underpinned by the following:

- 2A. By the end of 2016 in excess of 25 per cent of English waters will be contained in a well-managed Marine Protected Area network that helps deliver ecological coherence by conserving representative marine habitats;
- 2B. By 2020 we will be managing and harvesting fish sustainably;
- 2C. By 2022 we will have marine plans in place covering the whole of England's marine area, ensuring the sustainable development of our seas, integrating economic growth, social need and ecosystem management.

Outcome 3 – Species

By 2020, we will see an overall improvement in the status of our wildlife and will have prevented further human-induced extinctions of known threatened species.

Outcome 4 – People

By 2020, significantly more people will be engaged in biodiversity issues, aware of its value and taking positive action.

It is the responsibility of Government, its agencies and the wider biodiversity partnership to deliver the actions. Defra has produced a three-year rolling *Biodiversity 2020* Delivery Plan, so that progress on implementation of the priority actions can be monitored. The Delivery Plan is updated annually. A governance structure (Natural England 2013) is in place to oversee delivery of the *Biodiversity 2020* outcomes.

6.2.2 Northern Ireland

The current *Northern Ireland Biodiversity Strategy*, authored by the Northern Ireland Biodiversity Group (2002), sets out a goal for Northern Ireland to have the highest quality environment in the UK, with conservation of biological diversity fully integrated into policy making, in order to support the health of Northern Ireland's citizens, its wildlife and its economy.

The new Northern Ireland Biodiversity Strategy is being developed and is anticipated to be available in 2014.

6.2.3 Scotland

The 2020 Challenge

Our understanding of biodiversity has changed since the publication of the first biodiversity strategy for Scotland *It's in Your Hands* (Scottish Executive 2004). The *UK National Ecosystem Assessment* (UK NEA 2011a,b) provided the first objective analysis of the benefits of the environment for nature itself, society and economic prosperity.

The development and implementation of the Scottish strategy *2020 Challenge for Scotland's Biodiversity* (The Scottish Government 2013) takes account of this and focuses on some key areas of work including:

- A move to an ecosystem approach for delivering biodiversity conservation and ecosystem services.
- Mainstreaming biodiversity by ensuring key decision makers understand the multiple benefits, including ecosystem services, people's health and well-being, that well-functioning ecosystems deliver.
- A focus on the drivers of biodiversity loss, primarily: invasive non-native species, habitat fragmentation, diffuse pollution, and climate change.

The *2020 Challenge* is Scotland's response to the Aichi Biodiversity Targets and the European Union Biodiversity Strategy (2012). It identifies a need for a step-change in efforts to halt the loss of biodiversity and to restore essential services that a healthy environment provides. Investment in the natural assets of Scotland which contribute to sustainable economic growth as well as supporting well-being will be delivered through three key aims, to:

- Protect and restore biodiversity on land and in our seas and to support healthier ecosystems.
- Connect people with the natural world, for their health and well-being and to involve them more in decision making about their environment.
- Maximise the benefits for Scotland of a diverse natural environment and the services it provides, contributing to sustainable economic growth.

The *2020 Challenge* is outcome driven with a clear focus on delivering the European Commission Ecosystem Restoration target of 15 per cent. Seven strategic outcomes are identified:

- Outcome 1: Scotland's ecosystems are restored to good ecological health so that they provide robust ecosystem services and build on our natural capital.
- Outcome 2: Natural resources contribute to stronger sustainable economic growth in Scotland, and we increase our natural capital to pass on to the next generation.
- Outcome 3: Improved health and quality of life for the people of Scotland, through investment in the care of green space, nature and landscapes.

- Outcome 4: The special value and international importance of Scotland's nature and geodiversity is assured, wildlife is faring well and we have a highly effective network of protected places.
- Outcome 5: Nature is faring well and ecosystems are resilient as a result of sustainable land and water management.
- Outcome 6: Scotland's marine and coastal environments are clean, healthy, safe, productive and biologically diverse, meeting the long-term needs of people and nature.
- Outcome 7: A framework of indicators that we can use to track progress.

Each strategic outcome is linked to specific Aichi Biodiversity Targets and a series of key steps has been identified to ensure delivery of each outcome.

A new governance structure for the *2020 Challenge*, designed to achieve mainstreaming, has been adopted, with the Scottish Biodiversity Committee (SBC), chaired by the Scottish Minister for Environment, providing overall strategic direction. A Delivery and Monitoring Group, reporting directly to the SBC, has senior representation across government directorates, public agencies and NGOs, and will ensure key steps are delivered and progress monitored. This group will drive the work of seven supporting groups; Protected Areas Group, Habitats and Species Group, Strategic Marine Issues Group, Scottish Working Group on Invasive Non-Native Species, Natural Capital Group, Science and Technical Group, and Biodiversity and Land-use Communications Group.

The *2020 Challenge* has full Scottish Cabinet approval and therefore is a strategy for the whole of Scottish Government and public bodies. Delivery agreements will be established with statutory agencies, local authorities, NGOs and business to identify their contributions to the 2020 outcomes.

Ecosystem Health Indicators

The *2020 Challenge* identifies the need for spatial indicators of ecosystem health that operate at a national and regional level, as part of a move from tackling biodiversity at a species or habitat level and instead focussing on the drivers of loss and mainstreaming an ecosystem approach. Ecosystem Health is a measure or index of the status of ecosystems, through a combination of three inter-related elements:

- Condition of components (assets) – how far they are from a 'good' state;
- Function – the extent to which ecosystems retain their natural function and therefore have the capacity to deliver a range of benefits; and
- Sustainability or resilience – the extent to which the health of ecosystems (and their capacity to deliver benefits) can be sustained under human and environmental pressures, including climate change.

The mapping of Scotland's marine habitats has adopted the standardised European classification. Similar standardisation is now being applied to the mapping of land and freshwaters to provide a better infrastructure for mainstreaming biodiversity into policy-making, implementation and monitoring. This is implemented through Scotland's Spatial Data Infrastructure (SSDI, the Scottish Metadata Portal).

6.2.4 Wales

The *Environment Strategy for Wales (2006–2026)* (Welsh Government 2006) contains the following outcomes for Biodiversity:

- The loss of biodiversity has been halted and we can see a definite recovery in the number, range and genetic diversity of species, including those species that need very specific conditions to survive.

- The wider environment is more favourable to biodiversity through appropriate management, reduced habitat fragmentation and increased extent and interconnectivity of habitats.
- Sites of international, Welsh and local importance are in favourable condition to support the species and habitats for which they have been identified.
- Our seas are clean and support healthy ecosystems that are biologically diverse, productive and managed sustainably.

These were the driving outcomes for Welsh Government's biodiversity policy, the Countryside Council for Wales (now part of Natural Resources Wales) and the Wales Biodiversity Partnership, through the *Wales Biodiversity Framework*, and have been reported on in successive annual reports up until 2011.

The *Wales Biodiversity Framework* (Wales Biodiversity Partnership 2009) explains the roles, remits and processes essential to biodiversity conservation and enhancement in Wales. It provides a common point of reference on biodiversity for all organisations and individuals in Wales, whether Government department or local nature enthusiast.

The failure to meet the 2010 biodiversity targets led to a more fundamental look at how the Welsh environment is valued and managed as a whole – leading to the establishment of the Welsh Government's Natural Resource Management Programme in 2013.

In autumn 2010, a consultation called '*Living Wales – a new framework for our environment, our countryside and our seas*' was carried out. The consultation established the ecosystem approach as a basis for the new framework, noted the strong links between healthy, resilient ecosystems and long-term well-being, and established a guiding aim: 'to ensure that Wales has increasingly resilient and diverse ecosystems that deliver economic, environmental and social benefits'.

A Government green paper in 2012, '*Sustaining a Living Wales*' proposed that "*Wales' nature, land, water and air are our ultimate resource. With increasing demands being placed by society on the services that our natural resources provide, one of the key challenges we face in the 21st Century is to find ways of securing a healthy, resilient and productive environment now and in the future that delivers for society as a whole, supporting employment and wellbeing.*" This proposal was supported and the Welsh Government is currently preparing proposals to establish a legal framework for the sustainable management of natural resources, including embedding a process of integrated natural resource management within our existing delivery mechanisms. This process is based on the CBD Ecosystem Approach principles.

The Environment Bill White Paper setting out these proposals was published for consultation in October 2013 (Welsh Government 2013a). The Bill will focus on establishing a more effective and integrated approach to natural resource management, including biodiversity, and through this help to bring about significant improvements to our natural environment by:

- Enabling proactive, long-term and holistic decision making for our natural environment to take place alongside social and economic thinking rather than in isolation;
- Recognising and building the resilience of ecosystems as an essential component of our long-term well-being and not an add-on;
- Enabling early consideration of environmental gains and 'win-wins' as part of wider social and economic decision-making;
- Enabling more targeted investment and positive action to address the key causes of environmental degradation;

- Increasing the resilience of our natural resources by preparing for future challenges, such as those presented by climate change and also by using our natural resources to improve our resilience to climate change; and
- Establishing the legislative framework to enable sustainable growth, supporting both businesses and our economy helping to enhance well-being and support our communities and people.

The Wales Biodiversity Strategy Board is developing a biodiversity strategy for Wales to reflect the global and European targets for biodiversity and the current priorities for biodiversity in Wales, which will also encompass a refreshed Biodiversity Framework for Wales. This will further mainstream biodiversity across government policies and strategies and will encompass a reviewed monitoring and reporting regime.

6.3 UK Marine

Inshore waters are covered by the relevant country strategies. The *UK Biodiversity Framework* (JNCC & Defra 2012) covers offshore waters, and the European Marine Strategy Framework Directive (see Section 5.3) means there is no need for a strategy specifically for offshore waters.

Case Study C: Payment for ecosystem services

Ecosystem markets

The independent business-led Ecosystem Markets Task Force was set up 'to review the opportunities for UK business from expanding green goods, services, products, investment vehicles and markets which value and protect nature's services'. The [Task Force reported](#) to Government in March 2013 setting out opportunities for the natural environment and growth. The [Government Response](#) (published in September 2013) covers all 22 recommendations made by the Task Force, including their top five priorities: biodiversity offsetting (see Section 8.3); bio-energy and anaerobic digestion; sustainable local woodfuel; nature-based certification and labelling; and water-cycle catchment management.

Payments for Ecosystem Services (PES)

PES schemes enable the beneficiaries, or users, of ecosystem services to provide payment to the stewards, or providers of those services. They are about identifying practical ways to deliver new and additional investment in the natural environment, as well as seeking better targeting and value for money of existing funding streams.

In support of these schemes Defra published the [PES Action Plan](#) and [Best Practice Guide](#) in May 2013. The Action Plan promotes practical and innovative development of PES schemes and considers the actions that can be taken to enable them. It considers capacity-building actions for Government, the key policy areas of opportunity for PES and the monitoring and evaluation needs of PES schemes. The Best Practice Guide collates a number of instructive domestic and international case studies demonstrating the various challenges and solutions associated with a PES approach.

Defra is also supporting a number of PES pilot research projects to demonstrate the approach exploring the potential for PES in the domestic context. One of these pilot projects has funded the development of a pilot [UK Peatland Code](#) (see Case Study D) targeted at business investment in peatland restoration. The peatland code was launched by the IUCN in September 2013.

Q7: What actions has your country taken to implement the Convention since the fourth report and what have been the outcomes of these actions?

Priority actions are set out in the *UK Biodiversity Framework* (JNCC & Defra 2012) and country strategies as presented in response to Questions 5 and 6 above. The outcomes are being assessed using UK and country-level indicators. However, since new strategies were adopted in England in 2011 and Scotland in 2013, and are being prepared in Wales and Northern Ireland, there has been limited scope to assess those outcomes. Indicators are still under development and partial, indicator-based, UK assessments were published in 2012 and 2013 (see Appendix 5). A further update of UK indicators is due later in 2014. The recent trends in indicators are reported where relevant in different sections of this report and a summary of progress is presented in Section 10.

7.1 UK Biodiversity Indicators

One UK biodiversity indicator (C1), which outlines the extent and condition of protected sites in the UK, is specifically relevant to this question (see Appendix 5 for detail). It shows that the overall extent of land (C1a) and sea (C1b) protected in the UK through national and international protected areas, and through wider landscape designations, has increased by nearly 6 million hectares in the past 4–5 years, from just over 8.5 million hectares in December 2008 to just under 14.5 million hectares in June 2013. A large contribution to this has been from the marine environment, following the designation of inshore and offshore marine sites under the European Habitats Directive – the area of protected areas at-sea increased by more than 5.5 million hectares between 2008 and 2013 to 7.8 million hectares. The extent of protected areas on land has increased by more than 300,000 hectares since 2008 to 6.7 million hectares.

The indicator (C1c) also shows the condition of Areas or Sites of Special Scientific Interest (A/SSSIs) on land. Since 2008, the percentage of features, or area, of A/SSSIs in favourable or recovering condition has increased by just over 11 per cent. The proportion of features or area of land in favourable condition has declined slightly since 2008. The proportion of features or area of land in unfavourable-recovering condition has increased from 14 per cent in 2005 to 35 per cent in 2013. These changes reflect improved management of sites following focussed efforts, but may also be affected by a greater number of sites/features having been assessed over time.

Indicator E2 covers expenditure on biodiversity in the UK and internationally. The indicator shows increases in the long term (since 2000-01), but decreases in the last five years. In 2012-13, £471 million of UK public sector funding was spent on UK biodiversity; this value has remained stable since 2011-12, having fallen from a peak in 2008-09. In the longer-term, between 2000-01 and 2012-13, public sector spending on UK biodiversity increased by 76 per cent in real terms.

In 2012-13, UK public sector funding for international biodiversity totalled £56 million, an increase by 74 per cent since 2000-1 in real terms, and with a small year-on-year increase since 2009-10. However the five-year trend is assessed as negative because of a dip from a peak in funding in 2008-09.

Indicator E1 (biodiversity data for decision making) is under development; no data are yet available.

Other indicators which demonstrate actions in the UK are B1 (agricultural and forest area under environmental management schemes) (see Section 8) and C9b (plant genetic resources – Enrichment Index) (see Section 2).

7.2 Other evidence

See Case Study F for UK actions to manage non-native species.

7.2.1 England

Government published the *Natural Environment White Paper* (Defra 2011b), and *Biodiversity 2020* (Defra 2011a) is the England biodiversity strategy. See Section 6.2 for more information.

Building on the *UK National Ecosystem Assessment* (UK NEA 2011a,b), the Government is supporting a further phase to investigate the mix of future actions most likely to secure the greatest benefit for nature and for people from our ecosystems. It will also develop practical tools to assist decision-makers in taking account of the value of nature.

See Case Study G for information about Nature Improvement Areas (NIAs).

Following an independent review of England's forestry (Defra 2012a), Government has published a *Forestry Policy Statement* (Defra 2013b) which sets out objectives for forestry's contribution to *Biodiversity 2020* through improved woodland management, priority habitat creation (including restoring ancient woodlands which have been converted to plantations), and restoration of open habitats from forest plantation. These objectives will be reflected in the design of schemes for woodland and tree management under the new Rural Development Programme for England.

As part of the new Rural Development Programme in England, we will invest at least £3.5 billion into environment and rural development schemes over the next seven years. This entails spending a bigger share of the budget on the environment than before.

A number of actions have been initiated and taken forward in England to improve water quality, manage floods and erosion, and tackle unsustainable water abstractions which have benefits for biodiversity. More detail of actions on the ground is in Case Study H. Additional work to develop evidence to inform better implementation includes:

- The establishment and evaluation of 64 pilot river catchment partnerships, to test the impact of better local engagement around water, on biodiversity (Cascade Consulting 2013).
- Using the knowledge gained from the pilot across England better to support wider ecosystem function, including biodiversity.
- A catchment approach with partnerships across all of England's 89 river catchments.
- Ongoing development of river-basin management plans which aim to increase the proportion of water bodies in good ecological status from 26 per cent to 32 per cent. Since 2009, over 12,000 investigations have been undertaken by the Environment Agency to provide evidence for these plans.
- The development of a strategy, which is expected to be published by March 2014, to identify and address the most significant diffuse sources of water pollution from non-agricultural sources.
- Research to review and improve methods to reduce agriculture's impact on the water environment (Defra 2010).

- The establishment of a rolling programme to restore or create new wildlife habitat; with further research on how flooding and erosion can be reduced through working with natural processes (Environment Agency 2012).
- Research and catchment case studies to underpin the impact assessment of options to reform the abstraction regime.

Government published its *Biodiversity and Ecosystems Evidence Plan* in March 2013 (Defra 2013c). The plan aims to direct research investment to areas of highest priority to deliver the outcomes in *Biodiversity 2020*. Government has invested £1.2 million to support a more co-ordinated approach to monitoring and surveillance. This will help monitor changes in the state of biodiversity and also the flow of benefits and services it provides us.

Additional policy initiatives in England are presented in Section 8.

7.2.2 Northern Ireland

The extent of nature conservation designations continues to increase, and management measures on designated areas and in the wider countryside through agri-environment schemes, water management and controlling invasive species have made some significant impacts to halt biodiversity loss.

As at 31 March 2012 Northern Ireland had 345 Areas of Special Scientific Interest (ASSIs) covering 104,200ha. Initiatives to raise public awareness of biodiversity include funding the development of Local Biodiversity Development Plans (LBAPs) which now cover most of Northern Ireland.

Eight all-Ireland Red Data lists have been jointly published since 2007 and several more are being developed. Bryophytes are a particularly important group in Ireland and the publication of '*Rare and Threatened Bryophytes of Ireland*' in 2012 (Lockhart *et al* 2012) was a landmark in Irish bryology and a culmination of over 15 years of joint field survey. Seven all-Ireland Species Action Plans relevant to Northern Ireland were published in 2005.

7.2.3 Scotland

[The Wildlife and Natural Environment \(Scotland\) Act 2011](#) gives powers which enable Scotland to adopt a 3-stage approach to dealing with invasive non-native species and aims, in keeping with the Invasive Non-native Species Framework Strategy for Great Britain (see Case Study F), to:

- prevent the release and spread of non-native animal and plant species into areas where they can cause damage to native species and habitats and to economic interests;
- ensure a rapid response to new populations can be undertaken;
- ensure effective control and eradication measures can be carried out when problem situations arise.

Development and delivery of the agri-environment programme in Scotland, the Scottish Rural Development Programme (SRDP), is a key mechanism for influencing land and freshwater management. Priority habitats and species, as identified in the Scottish Biodiversity Strategy, are fully embedded in the programme and reflected in the measures and prescriptions available to land and freshwater managers across Scotland.

See Case Study A in Section 1 for more about work in Scotland to promote enjoyment of nature and the outdoors.

7.2.4 Wales

The Welsh Government's Natural Resource Management Programme identifies biodiversity as underpinning ecosystem services, and central to the functioning of healthy resilient ecosystems in line with the findings of the *UK National Ecosystem Assessment* (see also Section 6.2).

The Action Plan for Pollinators (Welsh Government 2013b)

The process of pollination is an excellent example of biodiversity underpinning the functioning of ecosystems and thereby the delivery of ecosystem services. We rely on the actions of pollinators to ensure an ongoing supply of plants, trees, and flowers. This in turn not only provides food for us and other animals in the food chain, but also ensures a healthy, resilient and diverse natural environment.

Honeybees and wild pollinators including bumblebees, solitary bees, parasitic wasps, hoverflies, butterflies and moths, and some beetles are important pollinators in Wales, for crops such as fruit and oil seed rape, clovers and other nitrogen-fixing plants that are important to improving the productivity of pasture systems for livestock grazing, and wild flowers.

The value of pollination as a contribution to the UK crop market in 2007 was £430 million and the cost of hand pollination, were we to lose this valuable service, has been estimated at £1.8 billion per year in the UK. The value of honey produced in Wales is also considerable, with a wholesale value in excess of £2 million in 2011.

However, bee and pollinator health and declining populations have been increasingly highlighted as a cause for concern in the UK and globally. The main areas of concern for pollinators are land-use intensification, habitat destruction and fragmentation, disease, the use of agro-chemicals, and climate change, although the importance of each of these and the extent to which they are inter-related is less well known.

The Welsh Government has worked with industry and stakeholders to look in more detail at the evidence and issues around pollinators and their conservation in Wales. Following consultation, the *Action Plan for Pollinators* sets the strategic vision, outcomes and areas for action to improve conditions for pollinators and work to halt and reverse their decline in Wales.

The plan describes the current situation in Wales and identifies areas where action is needed. It details our Vision for Pollinators in Wales, and aims to integrate it into the Welsh Government's priorities and policies such as the Rural Development Plan, local grants, and property management. It also lays out an Agenda for Action – the outcomes and areas for action that have been identified and how we will work towards them. The four main outcomes are:

Outcome 1: *Wales has joined up policy, governance and a sound evidence base for action for pollinators*

Outcome 2: *Wales provides diverse and connected flower rich habitats to support our pollinators*

Outcome 3: *Wales' pollinator populations are healthy*

Outcome 4: *Wales' citizens are better informed and aware of the importance and management of pollinators*

A Pollinators Taskforce has begun to implement the actions proposed in the plan.

A Water Strategy for Wales (Welsh Government 2013c)

The development of a Water Strategy for Wales was a key action from the Programme for Government that was published in September 2011. The Strategy will set out the Welsh Government's position and provide a steer to key stakeholders on a range of water policy outcomes for Wales. The Strategy will also set out how we to deliver these outcomes over the short-, medium- and long-term.

We want our water resources to be managed sustainably to support our people, environment, economy and biodiversity. We want our water resources to support a strong and healthy economy, through raw water supplies for industry and agriculture, or through tourism and recreation.

We will encourage the water companies to work in partnership with community organisations and third sector organisations such as the Community Land Advisory Service to explore opportunities for community growing of crops on their land. Community growing increases opportunities for access to the countryside and recreation uses within it. It engages and raises wider awareness of sustainability issues and enhances biodiversity. Water companies are encouraged to make the best and most sustainable use of their land and look to assist community growing projects with harvesting water techniques and sustainable use of water; building on best practice.

We can build on schemes, such as the agri-environment scheme Glastir, which already aims to deliver specific environmental goods and services to combat climate change; improve water management; and maintain and enhance biodiversity. These schemes can deliver measurable outcomes at both an agricultural and landscape level in a cost-effective way.

Biodiversity Funding

Funding of £1 million per year has been provided by the Welsh Government for ecosystem resilience and diversity projects since 2011. Biodiversity is a key outcome, but in the context of securing wider ecosystem resilience so that over time the benefits from the action taken will provide improvements for people and their communities. This partnership approach to allocating the funds was a step change to the way funding was assessed for this type of work and has, in a very short timeframe, delivered some excellent projects. In 2013/14, 25 projects have been allocated a total of £1.5 million.

7.3 UK Marine

7.3.1 Legislation

Actions to achieve the Aichi Biodiversity Targets for the offshore marine environment are undertaken through European and national legislation, namely:

- European Habitats Directive
- European Birds Directive
- European Marine Strategy Framework Directive (MSFD)
- Marine Act (Northern Ireland) 2013
- Marine and Coastal Access Act 2009
- Marine (Scotland) Act 2010
- Natural Environment and Rural Communities Act 2006
- Nature Conservation (Scotland) Act 2004

The UK submitted its *Marine Strategy Part 1* to the European Commission on 20 December 2012. This included an initial assessment of UK seas, definitions of Good Ecological Status, and targets and indicators for each MSFD descriptor. Work has begun on developing

proposals for the MSFD monitoring programme. Developing proposals for the programme of measures will take place during 2013/14 and will be consulted on in early 2015.

The updated European Common Fisheries Policy (CFP) introduces new legally binding commitments on fishing sustainably.

In 2009, the Marine and Coastal Access Act gained Royal Assent and now provides the legal mechanism to facilitate the UK vision of 'clean, healthy, safe, productive and biologically diverse oceans and seas' in English and Welsh territorial waters and UK offshore waters, by putting in place a new system for improved management and protection of the marine and coastal environment. The main elements of the Act are:

- A marine management organisation
- A strategic marine planning system
- A streamlined marine licensing system
- Marine nature conservation including the designation of Marine Conservation Zones (MCZs), a type of Marine Protected Area (MPA)
- Fisheries management and marine enforcement
- Migratory and freshwater fisheries
- Improving coastal access
- Improving coastal and estuarine management.

The Marine (Scotland) Act, 2010 contains new powers to designate MPAs. These contribute to a range of measures to manage and protect our seas for current and future generations, or to allow them the space from human activity to recover to the state they should be to remain healthy and productive.

7.3.2 Identification of MPAs

Since 2009, a number of Special Protection Areas (SPAs) and Special Areas of Conservation (SACs) with marine components have been submitted to the European Commission. These submissions have included four SPAs and 27 SACs; one of these – Hatton Bank SAC – is the largest in Europe, and together these sites bring the number of existing protected areas in our seas to:

- 108 SPAs for mainly coastal colonies of seabirds such as puffins and kittiwakes; and
- 108 SACs for species, such as bottlenose dolphin, and habitats such as cold-water coral reefs.

The UK has nominated 183 Marine Protected Areas (MPAs) to the OSPAR Commission as part of the OSPAR MPA network, totalling approximately 47,000km², and further sites are expected to be submitted in the future. Over 9% of UK waters and almost a quarter of English inshore waters are now protected by MPAs.

In addition, there are many Sites of Special Scientific Interest (SSSIs) around the UK coast that provide protection to marine species and habitats in intertidal areas, and sometimes more widely within estuaries and other enclosed waters.

In Scotland, possible Nature Conservation MPAs (pMPAs) have been identified in both inshore and offshore waters for species, habitats and geological features. The pMPAs have been identified by scientific advisers to Scottish Government for the purposes of addressing gaps in the protection of features representative of Scotland's marine environment for which MPAs are considered appropriate. The public consultation on pMPAs closed in November 2013 and Marine Scotland is preparing a consultation report. Designations are anticipated in

summer 2014. Should all recommended pMPAs be taken forward for designation, the pMPAs alone would represent approximately 11 per cent of Scotland's sea area.

The Marine Conservation Zone project was set up in 2008 to identify MCZs within English territorial waters and UK offshore waters adjacent to England, Wales and Northern Ireland. A public consultation on 31 recommended Marine Conservation Zones commenced in December 2012 and lasted three months. The consultation was considered to be exceptional in terms of the number of responses, with over 40,000 received. Following an analysis of the consultation responses, Ministers announced the designation of 27 MCZs in November 2013. In addition, Defra announced two further tranches of MCZ designation – one tranche to be designated in 2015 and the other in 2016.

Establishment of management measures in MCZs

Appropriate management measures for the first tranche of 27 MCZs are now being considered. Regulators are currently prioritising sites according to the potential or actual adverse impacts of activities on the designated features. Management will be implemented at sites most at risk of damage first and integrated with work on European Marine Sites.

7.3.3 Establishment of fisheries management measures in European Marine Sites (SACs and SPAs)

Since the UK's *Fourth National Report to the CBD* (CBD 2009), further measures have been adopted for the management of fisheries beyond 200 nautical miles in UK offshore waters, which is the responsibility of the North East Atlantic Fisheries Commission (NEAFC), the Regional Fisheries Management Organisation for the North East Atlantic. In UK offshore waters, closures to fishing with all bottom contacting gear are in place at Darwin Mounds (ban on all demersal gear introduced in 2004), North West Rockall Bank, and Hatton Bank (ban on bottom trawling and fishing with static gear, including bottom set gillnets and long-lines) to protect vulnerable marine ecosystems such as biogenic reef habitat. However, despite the implementation of these measures, a recent report (Howell *et al* 2013) based on a survey of the Darwin Mounds, Rockall-Hatton basin, North West Rockall Bank and East Rockall Bank has identified that it is still extremely difficult to detect any recovery of the biogenic reef structures in these areas, even after up to eight years of closure to bottom contacting gear. Further NEAFC recommendations in place can be found at <http://www.neafc.org/measures>.

More recently, to ensure that European Marine Sites (EMS) have the right level of protection and comply with legal obligations under European Directives, Government has revised the approach to managing commercial fisheries in European Marine Sites (EMS) in English waters. This contributes to Defra's aim to conserve and enhance the marine environment and promote sustainable fisheries.

A suitable timetable of delivery up to 2016 has been developed, with most initial measures to protect the highly sensitive features in these EMS in place by the end 2013. More will follow in early and spring 2014.

In offshore areas, a similar programme of work will be undertaken using the reformed CFP process. The UK has agreed proposed fishery measures for Dogger Bank with Germany and the Netherlands, and these are due to be submitted this year for approval. In addition, fishery management measures for four other offshore sites (Haig Fras, Stanton Banks, Scanner Pockmark and Braemar Pockmarks) will be submitted to the Commission this year. Management measure proposals for the other remaining sites will be submitted by 2016.

Case Study D: Peatland restoration initiatives

Peatlands are vitally important for people, and with appropriate management offer opportunities to help secure biodiversity and water benefits, and mitigate climate change. Peatlands are a threatened landscape; many are degraded through afforestation, encroachment by alien species, over-grazing, drainage, cutting, and either deliberate or accidental burning. Between 9 and 15 per cent of Europe's peatland area, and about 13 per cent of the world's blanket bog are in the UK (Bain *et al* 2011).

Peatland conservation and restoration is vital to ensure the future of a wide range of plants, invertebrates and birds, to provide drinking water, a large carbon store, benefits to farming and recreation, and possible reductions in lowland flooding. In England, only 4% of upland deep peat is in a favourable ecological condition where mosses are still actively forming peat, although nearly one-third has management plans in place that, if fully implemented, could return protected sites to a favourable condition (Committee on Climate Change 2013).

Peatland Code

The draft [Peatland Code](#) is the voluntary standard for peatland restoration projects in the UK that want to be sponsored on the basis of their climate and other benefits. It provides both standards and robust science to give business supporters confidence that their financial contributions are making a measurable and verifiable difference to UK peatlands. The Code will assure an open, credible and verifiable basis for restoration that delivers tangible climate change mitigation benefits, alongside the other benefits of healthy peat bogs for wildlife and water quality.

Peatland restoration

Restoration work contributes to Aichi Biodiversity Target 15. Several major peatland restoration initiatives have taken place across the UK and more are planned. Examples include:

At 400,000ha, the [Flow Country](#) of Caithness and Sutherland is one of the largest areas of Atlantic blanket bog in the world and is a peatland of international importance. A partnership has blocked large areas of drains and removed plantation trees. This will help to protect a wealth of species such as golden plovers, hen harriers, greenshanks, sundew, butterwort and great diving beetles.

The 2013-15 [Green Stimulus Peatland Restoration Project](#) is a Scottish Government initiative, administered by Scottish Natural Heritage, to reduce carbon released into the atmosphere by helping to restore degraded peatlands.

The [LIFE Active Blanket Bogs in Wales](#) Project (1 August 2006 to 31 March 2011) aimed to bring about an important and sustained improvement in the condition of blanket bog in two Special Areas of Conservation (SACs) in Wales: the Berwyn and South Clywd Mountains SAC and the Migneint-Arenig-Dduallt SAC in mid-Wales. Drains were blocked, plantations removed and invasive species eradicated; directly benefiting 5,944ha of blanket bog both in SACs and on privately owned land. Alongside the practical work, more than 4,000 people from the local area became involved in the project through walks, talks and education activities, leading to education benefits as well.

Stretching from Nidderdale (Yorkshire Dales) in the north to Kinder Scout (Peak District) in the south, with seven active projects mainly on Sites of Special Scientific Interest, the [Moors for the Future](#) project which started in 2003 undertakes active management on more than 30 sites. Work includes raising awareness of the moors; encouraging responsible use and care; restoring peatland and conserving important recreational and natural moorland resources; and developing expertise on sustainable management.

Case Study E: Species projects

Actions to improve the status of threatened species are carried out across the UK. Here three examples involving reintroductions or translocation in the wild are described.

Scotland's largest bird of prey, the white-tailed eagle

The white-tailed eagle became extinct in the UK in 1918. Two formal reintroductions, following IUCN guidelines and releasing a total of 140 birds, were carried out on Rum (1975 to 1985) and Wester Ross (1993 to 1998). These birds have gone on to establish a population of over 50 breeding pairs on the west coast of Scotland. The third phase of the reintroduction aims to establish a breeding population in East Scotland, where white-tailed eagles last bred approximately 200 years ago. It is hoped that a self-sustaining population of white-tailed eagles in East and Central Scotland will further the aim of establishing a Scotland-wide population. A total of 85 young white-tailed eagles taken from nests in Norway were released in Fife between 2007 and 2012. Successful breeding occurred in south-east Scotland in 2013 with one male chick raised by a pair of birds which were both released in 2009. All of the white-tailed eagles released are fitted with radio (VHF) tags, allowing their movements and survival to be monitored as the project progresses.

Protecting the agile frog

The agile frog *Rana dalmatina* is distributed widely throughout much of southern and central Europe, but is found in only a few northern locations; Jersey is its only location in the British Isles. The Jersey population of the agile frog has declined in both range and numbers since the early 1900s. By the 1970s there were only seven localities where the frog could still be found, and by the mid-1980s this had fallen to only two sites. The Agile Frog Group, now known as the Jersey Amphibian and Reptile Group, was formed in the late 1980s to undertake a program of captive-breeding, careful management of suitable habitat, and re-introduction to the wild. Progress has been made, but the future of Jersey's agile frog is far from secure, as the factors which probably played a key role in the frogs' decline are still very much in evidence.

The Gwyniad and Glutinous Snail in Llyn Tegid

The gwyniad, *Coregonus lavaretus*, is an Ice Age relict which is found in only two lakes in Wales; Llyn Tegid and Llyn Arenig Fawr. The population in the latter location is as a result of a translocation trial to provide a back-up population to the original native site; monitoring has revealed the presence of juvenile fish. Other populations of this whitefish are found in Scotland and England (where it goes by the names vendace, powan and schelly), but the Welsh population is genetically distinct. All are protected on Schedule 5 of the Wildlife and Countryside Act, 1981. The British population is under threat from pollution, water-level changes and climate warming.

Llyn Tegid also holds the only current UK population of the glutinous snail, *Myxas glutinosa*. It was not seen in the lake for nearly 50 years, before being re-discovered during a survey in 1998 funded by the Countryside Council for Wales and Snowdonia National Park. The snails live beneath stones around the margin of the lake. Monitoring has involved divers assessing the available substrate. Searches in other upland lakes in the area have failed to locate further populations.

Work to improve the water quality of the catchment of Llyn Tegid should have beneficial effects for both of these species.

Case Study F: Non-native Species

Strategies

The UK continues to actively tackle the threat of invasive non-native species; adhering to the three over-riding principles of prevention, early detection / rapid response, and control / eradication through development of mechanisms, and projects focussed on communications, research and management. Action in England, Scotland and Wales is via an [Invasive Non-native Species Framework Strategy](#) for Great Britain. In Ireland, practical management of introduced species is challenging because of the cross-border implications of controlling introductions and spread. [Invasive Species Ireland](#) is a joint venture between the Northern Ireland Environment Agency and the National Parks and Wildlife Service.

Rapid response

A key part of these strategies is the concept of rapid response. For example:

- The [killer shrimp](#), *Dikerogammarus villosus*, one of the most invasive species in Europe, arrived in Great Britain in 2010. The [‘Check, Clean, Dry’ Campaign](#) was developed by Government, the Environment Agency and other stakeholders to raise awareness amongst water users of the risks of invasive alien species (IAS), and how to halt their spread. The shrimp has been contained within four locations in Great Britain to date, and monitoring is ongoing.
- The [Asian hornet](#), *Vespa velutina*, is likely to arrive in Great Britain from the continent. This is the first ‘horizon-species’ to have a contingency plan prepared in Europe.
- [Water primrose](#), *Ludwigia grandiflora*, is an invasive non-native aquatic plant which can cause severe negative impacts, including out-competing native species and clogging waterways. The plant has now been eradicated from many sites in Great Britain.

Research

Research has been commissioned into the potential for the biological control of four invasive non-native riparian plants: Japanese knotweed, Himalayan balsam, floating pennywort and New Zealand pigmyweed. The Japanese knotweed psyllid has been the subject of a controlled and monitored release programme since 2010 to assess the effectiveness of its potential for biological control and for any risks to native species.

Local Action

Defra has provided funding since September 2011 to help establish approximately 40 [local action groups](#) across England. Enthusiastic volunteers have joined these groups to help eradicate invasive non-native aquatic plants, such as Himalayan balsam, in their local areas. Some local action groups are now self sufficient and have already achieved their goals, for example by making rivers more accessible with thriving native biodiversity.

Be plant wise; don't dump aquatic plants in the wild

A [‘Be Plant Wise’](#) campaign was designed to raise awareness among gardeners, pond owners and retailers of the damage caused by invasive aquatic plants and to encourage the public to dispose of these plants correctly. The Horticultural Trade Association, Ornamental Aquatic Trade Association, Royal Horticultural Society, and wild plant conservation charity Plantlife are all supporting the campaign. Retailers of aquatic plants provide information in stores, including advice for gardeners and pond owners.

Stop the Spread

The London Chelsea Flower Show is a major event in the UK and globally with large numbers of visitors and extensive press coverage including television. During the 21–25 May 2013 show, The Food and Environment Research Agency (Fera) presented a groundbreaking Show Garden called ‘Stop the Spread’. This garden contrasted the beauty

of a British garden with the potentially damaging effects that plant pests, diseases and invasive non-native species have on our gardens, woodlands and countryside. The garden aimed to inspire the public to play their part in protecting our plants, trees and wildlife by adopting good practices to minimise their chances of unwittingly spreading pests, diseases and invasive non-native species. The [‘Stop the Spread’ garden](#) was awarded a silver medal.

Eradication of mink and water vole conservation

Since 2003, the British Association for Shooting and Conservation and its members have been working in partnership with other organisations (including Environment Agency, Natural England, RSPB, Wildlife Trusts and SITA Trust) on water vole conservation from the Bristol Channel to the south coast. They have been successful in creating a *cordon sanitaire* of mink control, achieving a key element of the UK water vole steering group’s strategy to protect water vole populations in the area and to isolate the south-west of England from further invasion from mink. The work is carried out by volunteers from the shooting and fishing community and nature conservation staff.

To date over 400 mink have been caught and humanely dispatched from the Somerset Levels ([Green Shoots on the Somerset Levels](#)). This reduction in mink numbers has been paralleled with a recovery in the water vole population. In 2003, when the project started water voles were known to occur at only five sites in the Somerset Levels. By 2013, water voles were known to occur at 45 sites. Much of the Somerset Levels are now considered to be mink free.

The work continues and shows how invasive non-native species can be tackled cost-effectively at a landscape scale.

Modelling spread to plan eradication

The [carpet sea-squirt](#) *Didemnum vexillum* is an invasive sea-squirt that was first detected in Europe in 1991 and has since spread to several countries (including France, Ireland and the UK). The species was discovered in the marina in Holyhead Harbour in the summer of 2008. Because *D. vexillum* forms sheet-like colonies on natural and artificial hard substrata as well as benthic organisms (including other ascidians and algae and even on *Zostera marina* beds) there were concerns that it would have negative impacts on biodiversity and shellfish interests.

Pleasure craft movement has been identified to provide the greatest risk for the spread of *D. vexillum*, so the predicted spread of *D. vexillum* around the Welsh coast was modelled using the species biological limits and current known populations. Cruising routes and marinas used by recreational vessels were fed into the model. The model showed that large areas of the Welsh coast could become affected fairly rapidly including European Marine Sites (EMS) and the main shellfish beds in Wales. This would have a large economic and environmental impact on the Welsh industry and environment.

In 2009 funding was received from the Welsh Government to undertake a three year eradication programme in Holyhead marina to try to eradicate *D. vexillum* before it spread to other areas. The cost of the eradication, around £700,000, is small compared to the cost of eradicating it from marinas and amenity beaches had it spread from Holyhead marina. The cost to the shellfish industry in the Menai Straits alone could have run into several million pounds. A separate project looking at the development of an isolation berth to treat suspect vessels is under development at present by Holyhead marina and Bangor University.

Case Study G: Monitoring and evaluation of Nature Improvement Areas (NIAs)

What are NIAs, how are they monitored and evaluated, who benefits?

Following a national competition, 12 Nature Improvement Areas (NIAs) were created in England in 2012 (see Figure G1). They are part of a new, integrated, and locally driven approach to improving the natural environment. They aim to provide better places for wildlife on a large scale, to improve the natural environment for people, and to unite local communities, landowners and business through a shared vision. They have been developed and are being implemented by local partnerships between the voluntary and private sectors and government agencies. They will try out different approaches with the common aim of restoring biodiversity and improving ecosystem services. Whilst encouraging different approaches to delivery is part of the purpose, a consistent approach for monitoring and evaluation is necessary to be able to assess what works well, and potentially not so well, and to take stock overall.

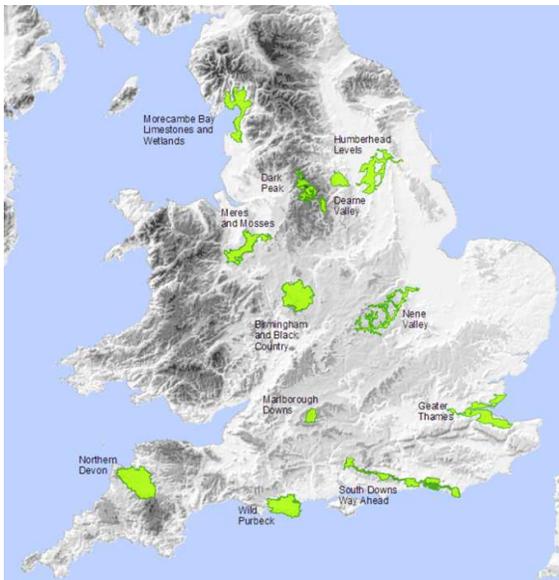


Figure G1 Location of NIAs.

An indicator-based monitoring and evaluation framework was developed in consultation with the NIAs. The indicators cover four themes: Biodiversity; Ecosystem Services; Social and Economic Benefits and Contributions to Well-Being; and Partnership Working. The NIAs have each selected between 14 and 28 indicators from a menu of 'core', 'optional' and 'local' indicators. The data is captured via an online reporting tool. For some aspects relating to the social and economic benefits of NIAs, a more deliberative and qualitative evaluation process is being developed.

The evaluation method uses a logic model (see Figure G2) which links the intended outcomes (both short-term and longer-term impacts) with the policy inputs, activities and processes. Within the logic model, evaluation objectives, sub-objectives and criteria have been structured under the four themes of the NIA monitoring and evaluation framework. Evaluation questions have been developed around each criterion, as a basis for the evaluation of individual NIAs and the NIAs collectively at the programme level.

Annual reports of progress will be produced, with a tri-annual evaluation in 2015. Best practice will be shared amongst NIAs to continually improve performance and encourage. The tri-annual evaluation will aim to assess what the NIAs have achieved, what difference they have made, and whether they provide a cost-effective means of meeting the objectives of the England Biodiversity Strategy and the Aichi Biodiversity Targets.

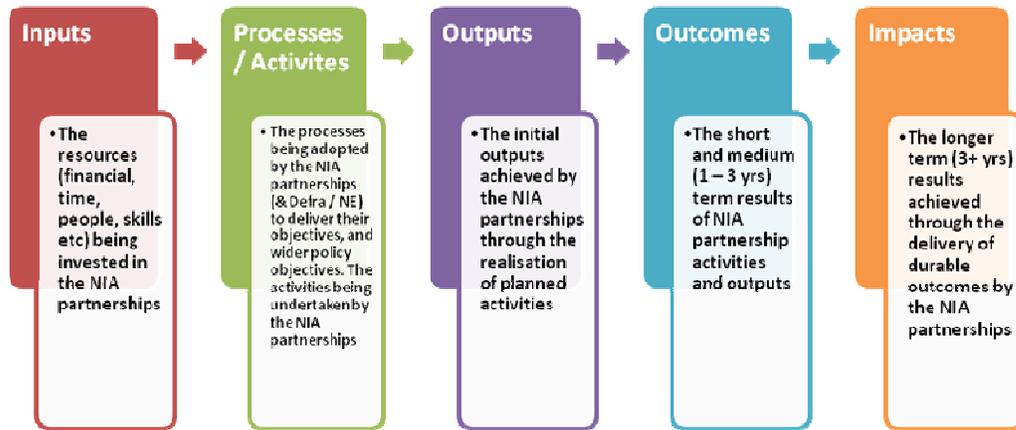


Figure G2 The NIA evaluation logic model.

How does it help to address Aichi Biodiversity Target(s)?

The NIAs aim to address a number of Aichi Biodiversity Targets, in particular 1, 5, 10, 11, 14, and 15.

What have we learnt?

- Bottom-up approach allows local solutions to develop, builds on local strengths and community interest – not just delivery of a national target or legal obligation;
- Important to build commitment and ownership to monitoring – need for flexibility within a national framework;
- Indicators provide a useful focus for monitoring and evaluation – however, data availability and quality at a local level is a limitation;
- Difficult to establish baselines and counterfactuals to determine the added value;
- The scientific underpinning and methods for some indicators, such as ecological connectivity and ecosystem services, are not fully developed;
- Project timelines are a challenge: difficult to (a) develop monitoring and evaluation approach in consultation; (b) provide early guidance and tools for its application; and (c) measure outcomes within a short timescale.

Where to find out more?

The report of the first year evaluation is available at:

<http://www.naturalengland.org.uk/ourwork/conservation/biodiversity/funding/nia/monitoringandevaluation.aspx>.

Q8: How effectively has biodiversity been mainstreamed into relevant sectoral and cross-sectoral strategies, plans and programmes?

8.1 UK Biodiversity Indicators

Three UK biodiversity indicator measures track outcomes of cross-sectoral programmes that include biodiversity among their objectives. These include agri-environment schemes (B1a), sustainable woodland management (B1b), and sustainable marine fisheries (B2). A number of other indicators are being developed.

The area of land in higher-level, or targeted, agri-environment agreements, which require landowners to improve biodiversity or maintain high biodiversity, has increased in both the long- and the short-term (indicator B1a). In 2012, the total area of land in higher-level schemes in the UK was just less than 3.4 million hectares. The proportion of agricultural land managed under these schemes amounts to 16 per cent in England, 45 per cent in Northern Ireland, 20 per cent in Scotland, and 24 per cent in Wales.

The area of land in whole farm, or entry-level agri-environment agreements, which encourage good environmental practice, has increased in the short term (indicator B1a). In 2012, the total area of land in entry-level type schemes in England, Scotland and Wales was 6.9 million hectares, an increase of 4.9 million hectares since 2005. The proportion of agricultural land managed under entry-level schemes amounts to 68 per cent in England, 7 per cent in Scotland, and 26 per cent in Wales.

Certification of woodlands promotes responsible forest management to safeguard forests' natural heritage and protect threatened species. Indicator B1b shows that by 2013 the percentage of woodland area in the UK which is certified as sustainably managed had increased to 44 per cent (1.4 million of a total of 3.1 million hectares) from 36 per cent in 2001. It has remained stable since 2008. In 2013, the percentage of woodlands certified as sustainably managed was 27 per cent in England, 58 per cent in Northern Ireland, 57 per cent in Scotland, and 46 per cent in Wales.

The sustainability of UK fisheries, measured as the percentage of fish stocks harvested sustainably and at full reproductive capacity (indicator B2), has improved in both the long- and the short-term. Fifteen fish stocks are assessed and the trend shows an overall increase, accelerating since 2000. The highest proportion of fish stocks harvested sustainably was 47 per cent in 2011. Advice in 2012 from the International Council for Exploration of the Sea (ICES) showed that most of the UK indicator stocks considered to be harvested sustainably and at full reproductive capacity in 2011 were also being fished at or below the rate providing long-term maximum sustainable yield (MSY), meaning that harvesting is both sustainable and delivering the largest possible catches, on average, that the stocks can provide under the prevailing environmental conditions.

Indicators on the value of biodiversity integrated into decision making (A3), sustainable consumption (A4), and integration of biodiversity considerations into business activity (A5) are under development.

8.2 UK level

8.2.1 UK Biodiversity Framework

The *UK Biodiversity Framework* (JNCC & Defra 2012) covers a number of areas of mainstreaming – see Section 6.1 for more details.

8.2.2 Promoting better taking account of values of biodiversity in public and private sector decision-making

Supplementary guidance on accounting for environmental impacts was published by HM Treasury in February 2012. A baseline evaluation study has been commissioned to understand the extent to which Impact Assessments are considering the value of nature.

8.3 Four countries of the UK

8.3.1 Biodiversity duty

An important driver for mainstreaming in each of the countries is legislation which places a 'statutory duty' on all public bodies to have regard to biodiversity conservation. The relevant Acts are:

- The Natural Environment and Rural Communities (NERC) Act (England and Wales) 2006;
- Wildlife and Natural Environment Act (Northern Ireland) 2011;
- The Nature Conservation (Scotland) Act 2004.

Each country has now listed priority habitats and species which should be the subject of the duty, and some produce further guidance. For example, Wales carries out annual reviews of local authorities' and National Park authorities' performance with respect to the duty and appointment of member-level Biodiversity Champions (Wales Biodiversity Partnership, 2014).

8.3.2 England

Spatial Planning

The planning system has a crucial role to play in the successful delivery of biodiversity outcomes in England. The National Planning Policy Framework and associated guidance includes safeguards for biodiversity and ecosystems, as well local green spaces that have significant importance to local communities (Department for Communities and Local Government 2012, 2013a,b).

Government is developing marine plans which integrate economic, social, and environmental considerations, and which will guide decision-makers when making any decision that affects or might affect a marine area. Following public consultation on East of England inshore and offshore marine plans in July 2013, the final plans will be adopted in early April 2014.

Biodiversity Offsetting

Biodiversity offsets are conservation activities that are designed to give biodiversity benefits to compensate for losses. In April 2012, Government launched a biodiversity offsetting pilot scheme to test an approach to biodiversity offsetting in England (Defra 2013d). The six pilots finished at the end of March and will require several months of analysis before they can fully inform our thinking. In September 2013, Government launched a consultation on biodiversity offsetting and is considering responses.

Greening Government

Government has published its first annual report on progress against its commitment to 'green government' which includes actions to promote, conserve and enhance biodiversity and reduce other environmental impacts (Defra 2012b).

8.3.3 Scotland

Raising people's awareness and knowledge of biodiversity is an essential contribution to mainstreaming. Case Study A (*Promoting the benefits of biodiversity to all*) shows some of the initiatives which are making this happen.

A key mechanism for habitat and species protection is spatial planning and development management. The Central Scotland Green Network (CSGN) is a designated 'National Development' in Scotland's National Planning Framework (NPF2). The objective of the CSGN is to achieve a step-change improvement in the environment of central Scotland. The proposed NPF3 includes a key action to implement the provisions of the Scottish Biodiversity Strategy, including completing the suite of protected places and improving their connectivity through a national ecological network centred on these sites. National guidance *Green Infrastructure, Design & Place-making* (Scottish Government 2011b) sets out how planners and developers are expected to incorporate linked areas of semi-natural habitats into new developments to deliver a range of benefits for nature and people. This is one of a number of ways Government is promoting a place-making culture that recognises that green infrastructure has a key role in helping make distinctive and sustainable places. Recently revised guidance on Strategic Environmental Assessments and Habitats Regulations Appraisals seeks to embed good practice in considering impacts on biodiversity at the early stages of development plan-making.

Strategic and local plans are identifying green networks on maps, applying robust policies to protect them and identifying opportunities to enhance them, with potential benefits to wildlife and people. An increasing number of planning authorities have adopted supplementary guidance (guidance linked to the spatial plan) that sets out how decision makers will take account of biodiversity in assessing development proposals. Most development plans in Scotland now how robust policies that provide protection to statutory and non-statutory wildlife designations.

The Scottish Borders Biodiversity Offset scheme is an example of work that aims to compensate for the residual impacts of renewable development, in line with a 'no net loss' policy in the local development plan. This has delivered improved habitats for Black Grouse at a range of locations.

See also Sections 6.2 and 7.2 for other Scottish policies which contribute to mainstreaming.

8.3.4 Wales

See Sections 6.2 and 7.3 for details of the Natural Resource Management Programme and the *Action Plan for Pollinators*.

8.4 UK Marine

The environmental impacts from developments, plans and projects in UK waters are managed through a regulatory and consenting process. Amendments to previous regulations came into force in April 2011 under the Marine Works (Environment Impact Assessment) (Amendment) Regulations 2011, inclusive of marine licences under the Marine and Coastal Access Act 2009. This EIA Directive states that the effects of a project on the

environment must be assessed in order to take account of concerns to protect human health, to contribute by means of a better environment to the quality of life, to ensure maintenance of the diversity of species, and to maintain the reproductive capacity of the ecosystem as a basic resource for life (MMO 2011). As such, any projects which are likely to have significant environmental effects by virtue of their nature, size or location are subject to an environmental impact assessment before permission is granted.

Implementation of new marine legislation (see also Section 7.4) has led to the establishment of new marine planning systems to promote sustainable development of the marine area. Marine plans for UK inshore and offshore seas will inform and guide marine users and regulators, to enable the sustainable development of marine industries, such as wind farms and fishing, alongside the need to conserve and protect marine species and habitats.

Fisheries management for UK stocks is undertaken at a European level through the Common Fisheries Policy (CFP), and the North East Atlantic Fisheries Commission (NEAFC).

Case Study H: Catchment Restoration

Catchment Restoration Fund

Society needs water for life. To provide clean water there is a need to reduce pollution that comes from the way land is used and improve the landscape through which water flows. The Department for Environment, Food and Rural Affairs (Defra) has created a [Catchment Restoration Fund](#) (CRF) administered by the Environment Agency to support this aim.

Projects will, at a catchment level:

- restore natural features in and around watercourses;
- reduce the impact of man-made structures on wildlife in watercourses;
- reduce the impact of diffuse pollution that arises from rural and urban land-use.

Forty two projects have been approved, with a combined value of £24.5 million. Over 300 water bodies will receive habitat improvement, improved access for fish, or reductions in diffuse pollution, making significant steps towards more waters at good status as well as providing wider benefits to society and the environment. These funds also bolster the contributions from hundreds of partners in local communities, led by charitable organisations such as river trusts, wildlife trusts, the RSPB and other local action groups. The CRF is focussed on water, but, where possible, connections to a wider range of benefits are also being supported. A lot of the projects funded are about restoring natural connections along rivers (e.g. by removing barriers), and between the rivers and their landscape (restoring habitats). The fund allows charities to connect local people and businesses to actions they can take to improve their environment. Because it's about catchments, it connects farmers and businesses to the impacts their land use has on the water environment. And it connects existing actions at a catchment scale, so that they have greater effect.

Catchment Sensitive Farming

[Catchment Sensitive Farming](#) (CSF) has been helping farmers and land managers improve water quality in their local rivers and other water bodies, whilst also making farm business savings, since the programme began in April 2006. A large number of [case studies](#) are available to demonstrate how particular issues can be tackled (these include: slurry and manure management, farm business benefits, pesticides, nutrients, and pigs and poultry).

[West End Farm](#) is an example of how such practices can be put in place. The 101ha dairy farm has a dairy herd of 160 Holstein cows in the River Hull catchment. The watercourse is a Site of Special Scientific Interest (SSSI). The River Hull is the most northerly chalk river in

England and has clear chalk water, gravel beds and aquatic flora. West End Farm lies in the upper reaches of the Lowthorpe Beck – a tributary of the River Hull. Lowthorpe Beck flows through fields grazed by the dairy cows with 270m of bank access for drinking water. Access by the cows caused poaching of the banks and disturbed sediments. This increased the sediment load of Lowthorpe Beck and ultimately the River Hull, leading to the gravel beds becoming covered in sediment, thereby preventing brown trout from spawning. Algal growth on rocks was also observed, possibly due to eutrophication of the water as a result of cattle defecation in and around the water course. West End Farm was put into an agri-environment agreement because they are within the Site of Special Scientific Interest (SSSI) with species-rich grassland and fenland, supporting a diverse range of flora and fauna. The Beck was fenced to prevent cows accessing the river, and drinking water was provided via a pump and piped water. Positive environmental benefits to the gravel beds and ecology of Lowthorpe Beck have been observed, which ultimately benefited the River Hull Headwaters SSSI. The farmer thinks that the new system with water troughs in relevant places is working as well as, if not better than, the previous system.

Reducing water pollution from agriculture – [Demonstration Test Catchments](#)

Demonstration Test Catchments will find out if new farming practices, which aim to reduce diffuse pollution from agriculture, can also deliver sustainable food production and environmental benefits across whole river catchments. This Living with Environmental Change (LWEC) project is working in three catchments across England:

- The River Eden in Cumbria: <http://www.edendtc.org.uk>;
- The River Wensum in Norfolk: <http://www.wensumalliance.org.uk>; and
- the River Avon in Hampshire: <http://www.avondtc.org.uk>.

The project brings together 40 organisations including scientists, farmers, regulators, policy makers, charities and industry groups. Methods include satellite technology (GPS) to ensure fertiliser is spread in the right places; better-designed farmyards to stop pollution draining into fields and rivers; and designing ditches and ponds to soak up substances. The project will test how farmers can reduce their environmental footprint while continuing to farm profitably and productively. It covers a whole range of farm types, including sheep and beef, dairy, and arable and pig farming. The initiative aims to ensure that Defra's research on water is balanced against the need to reduce greenhouse gasses, protect biodiversity, reduce flooding and produce food.

Q9. How fully has your national biodiversity strategy and action plan been implemented?

All of the strategies, at the level of either country or UK, are at an early stage or still under development, therefore most areas of implementation are also at an early stage.

Of the 60 milestones in the *UK Biodiversity Framework* (JNCC 2013a), 11 have been completed, 37 have made good progress and are on track, work on 11 has been started, and work on one is not yet due to start (JNCC 2013b; see also Section 6.1).

In England, the *Biodiversity 2020 Indicators* (Defra 2013e) are updated annually and track progress towards the outcomes of the *Biodiversity 2020* strategy. A number of major initiatives are underway, as reported in Sections 7 and 8. A formal evaluation of the *Biodiversity 2020* strategy is being planned. Progress so far includes:

- Creation of nearly 50,000ha of priority habitats such as wetlands and woodlands has been set in hand.
- Over 95% of our Sites of Special Scientific Interest (SSSI) – our most important sites covering 1 million hectares / 8% of England – are in favourable or recovering status.
- Over £3.1 billion will be available between 2014 and 2020 to protect and enhance biodiversity through the New Environmental Land Management Scheme (NELMS).
- A first instalment of 27 new Marine Conservation Zones (MCZs) to supplement and complement the stretches of our sea that are already Marine Protected Areas (MPAs).
- 48 Local Nature Partnerships (LNPs) established in 2012, providing a local approach to managing the natural environment in an integrated way.
- Following a national competition, in 2012 £7.5 million of funding was awarded to 12 new Nature Improvement Areas (NIAs), generating significant additional investment from other sources.

In Scotland, A Route Map to 2020, to be published in the autumn of 2014, will highlight significant tasks and targets contributing to the *2020 Challenge*.

In Wales, the *Environment Strategy for Wales* (see Section 6.2) contains the current biodiversity outcomes sought for Wales by 2026. Reporting on the *Environment Strategy* was focussed on three key areas:

- How the *Environment Strategy* is being taken forward in other strategies, plans and programmes, including the biodiversity duty (Welsh Government 2011).
- Progress against the indicators which support the outcomes via the *State of the Environment Report* (StatsWales 2012a,b).
- Progress against the actions from the action plan (Welsh Government 2011).

Part III: Progress towards the 2020 Aichi Biodiversity Targets and contributions to the relevant 2015 Targets of the Millennium Development Goals

Q10: What progress has been made by your country towards the implementation of the Strategic Plan for Biodiversity 2011-2020 and its Aichi Biodiversity Targets?

Scope

As the UK is at an early stage of implementation of the Strategic Plan for Biodiversity 2011-2020 and noting that several indicators are still under development, this report is structured around the five Goals rather than on each of the twenty Aichi targets. Although some targets are cross-cutting between goals, for simplicity the report confines itself to covering the principal targets for each goal.

Three of the Aichi targets have an end date of 2015, and for these we have included a progress report.

The following criteria were used to assess overall progress under each Goal:

Goal met in full – all indicators show positive trends and actions fully implemented.

Substantial progress – majority of indicators show positive trends and implementation of actions well advanced across all relevant targets.

Progress in most areas – most indicators show positive trends or no change and implementation of actions in progress across all relevant targets.

Limited progress – few indicators showing positive trends or no change and implementation of actions in progress across some relevant targets.

No progress – no indicators showing positive trends or no change and actions not being implemented.

Unknown – evidence insufficient to make an assessment.

As noted above, the implementation of UK and country strategies in response to the *Strategic Plan for Biodiversity 2011-2020* is at an early stage, and at this point progress is primarily assessed in regard to actions in progress rather than the eventual outcomes. Our assessment is that substantial progress is being made under Strategic Goals B and E, and progress is being made in most areas under Strategic Goals A, C and D (see details below). However we recognise that all of the Strategic Goals, and the more specific Aichi Targets, are very ambitious and will require a further concerted effort by Government, the voluntary sectors and all relevant sectors of the economy and society to achieve them.

Summary results for the relevant indicators are shown at the end of the assessment for each goal. To avoid repetition, full details and graphics for each indicator are not included in this section. The relevant section where these can be found is in brackets after each indicator's title, and more detail is provided in Appendix 5.

Evidence in this section is nearly all from Parts I and II of the report, with the main sources (as described in Appendix 1) listed for each goal. Some additional evidence sources are individually referenced.

The strength of evidence for each goal is assessed as:

High - multiple sources clearly linked to goal/targets;

Medium - multiple sources indirectly linked or some/few sources clearly linked to goal/targets;

Low - evidence patchy and indirectly linked to goal/targets.

STRATEGIC GOAL A:

Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society

Target 1: By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.

Target 2: By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.

Target 3: By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio economic conditions.

Target 4: By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.

Assessment of progress: progress in most areas.

Strength of evidence: Medium.

Rationale for progress rating: key points

- An active portion of the UK population strongly supports conservation of biodiversity, although indicator A1 shows a small decline in the index of volunteer time spent on conservation action since the UK's *4th National Report to the CBD* (Target 1).
- New Treasury guidance has been put in place, supplementing the *Green Book*, to help government departments take account of the value of nature as part of policy appraisal (Target 2).
- The UK Government and devolved administrations are strongly committed to including biodiversity values in decision-making. For example, the core focus of the *Natural Environment White Paper (NEWP)* was on the importance of taking account of the value of nature. The *NEWP* contained 92 commitments, of which two-thirds have now been taken forward, putting in place important foundations for the longer term (Target 2).
- Development of national accounts which include natural capital is being taken forward, and a *Roadmap* was published by ONS in 2012 (Target 2).
- All four UK countries have development planning policies which protect biodiversity. For example the English National Planning Policy Framework and associated guidance specifically references the role of ecosystem services and includes safeguards for biodiversity and ecosystems (Target 2).
- The UK strongly supports, and is actively implementing, marine planning. The first marine plans in England, covering the East inshore and offshore areas, will be adopted in early April 2014. Scotland expect to adopt its national marine plan later in 2014, and both Wales and Northern Ireland in 2015 (Target 2).
- Incentives such as agri-environment and forestry schemes, and policies for sustainable fishing, which are agreed at the European level, include biodiversity objectives. Using such schemes, the area of land under agri-environment or sustainable forestry programmes, and the proportion of fisheries which is sustainable, have increased. As part of the new Rural Development Programme in England, at least £3.5 billion will be invested into environment and rural development schemes

over the next seven years. This entails spending a bigger share of the budget on the environment than before (Targets 3, 4).

- Several approaches to payment for ecosystem services are being tested, and the UK Government contributes to positive global incentives through its payments to mechanisms such as the Global Environment Fund (GEF), the Reduction in Emissions from Degradation and Deforestation (REDD+) programme, the International Climate Fund (ICF) and the Darwin Initiative (Target 3). DFID also contributes to the World Bank Wealth Accounting and Valuation of Ecosystems Services (WAVES) programme which aims to include the value of natural capital within the national accounting systems of partner countries. This is intended to increase the incentive for partners to manage their natural resource assets sustainably.
- All four countries of the UK (England, Northern Ireland, Scotland, Wales) have incorporated lists of priority habitats and species into their legislation, conferring a 'biodiversity duty' on statutory bodies to have regard to conserving biodiversity. In addition England, Scotland and Wales have 'greening government' initiatives to reduce environmental impacts of their own work (Target 4).
- The UK Government and devolved administrations are working to achieve or maintain 'Good Environmental Status' in UK marine waters under the European Marine Strategy Framework Directive (MSFD). This integrates the concepts of environmental protection and sustainable use (Target 4).

Key evidence sources used:

- UK Biodiversity Indicators
- *UK Biodiversity Framework* and its published reports
- *UK National Ecosystem Assessment*
- Written contributions from the UK Government and devolved administrations
- Case Studies A, B, C, D, H

Examples of relevant policies and instruments:

More information can be found in Parts I and II, or by following the links in Appendix 2.

- Promoting the benefits of biodiversity to all (Case Study A)
- Biodiversity accounting (Sections 6.1, 8.2.2)
- Wealth Accounting and the Valuation of Ecosystem Services (WAVES; Section 6.1)
- Intergovernmental Platform for Biodiversity and Ecosystem Services (IPBES)
- Peatland Code (Case Study D)
- Payments for Ecosystem Services (Case Study C)
- Agri-environment schemes (Sections 7.2, 8.1)
- Forest certification (Section 8.1)
- Biodiversity duty (Section 8.3.1)

Addressing areas of uncertainty and knowledge gaps:

- A number of indicators are under development to assess the targets under this goal:
 - Awareness, understanding and support for conservation (indicator A1);
 - Value of biodiversity integrated into decision making (indicator A3);
 - Sustainable consumption (indicator A4);
 - Integration of biodiversity considerations into business activity (indicator A5).
- Research has been carried out to develop a method for measuring the impacts on global biodiversity of consumption in the UK (West *et al* 2013; Defra 2013a).
- The UK Government funds the Ecosystem Services for Poverty Alleviation (ESPA) research programme (Section 6.1)

Overall conclusions/summary

Progress has been made under Goal A in most areas. Awareness is generally good and there are many initiatives to raise it. Innovative financial mechanisms and opportunities for mainstreaming are being initiated and supported at home and overseas. A number of positive incentives operate in the UK and benefit large areas of land as well as improving the sustainability of our fisheries. Achievement of Goal A requires new and innovative approaches, some of which are still being developed and tested, to fully reflect the values of biodiversity and ecosystems in decision-making (Natural Capital Committee 2014; UK NEA 2011b).

Summary of main indicators for Goal A

Indicator number (Strategic goal/number), title (and section number in this report)			Assessment of change	
			Long term	Short term
A2. Taking action for nature: volunteer time spent in conservation (see Section 1)			 2000–2012	 2007–2012
B1. Agricultural and forest area under environmental management schemes (see Section 8)	B1a. Area of land in agri-environment schemes	Higher-level/targeted schemes	 1992–2012	 2007–2012
		Entry-level type schemes	 2007–2012	 2007–2012
	B1b. Area of forestry land certified as sustainably managed	 2001–2013	 2008–2013	
B2. Sustainable fisheries (see Section 8)			 1990–2011	 2006–2011

STRATEGIC GOAL B:

Reduce the direct pressures on biodiversity and promote sustainable use

Target 5: By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.

Target 6: By 2020 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.

Target 7: By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.

Target 8: By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.

Target 9: By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment.

Target 10: By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.

Assessment of progress: substantial progress.

Strength of evidence: Medium.

Rationale for progress rating: key points

Pressures

- Levels of both air pollution and marine pollution (indicator B5) are decreasing (Target 8), though air pollution remains at a high level.
- There has been a decline in the number of European habitats in favourable or improving condition (indicator C3; Targets 5, 7). However, some of this decrease is due to new evidence on the impact of airborne pollution, and cannot be attributed to a real decrease in condition.
- Sub-tidal seabed sediment habitats in most areas are continuing to have impacts from bottom trawling activity damaging structures and causing declines in key functional species (Section 4.2.1; Target 5).
- Invasive species pose a growing threat to native biodiversity in the UK (indicator B6), but efforts are underway to manage and reduce the threat (Target 9).
- Climate change is expected to continue to impact on both terrestrial and marine species and habitats, but some other pressures are being tackled (Target 10) (see below).

Sustainability

- Substantial progress has been made with reducing pressures on UK fish stocks, leading to improved status of stock in UK waters (indicator B2). 47 per cent of indicator fish are now harvested sustainably and this has increased over both the long- and short-term. The proportion of large fish in the North Sea has increased in the short term, after an earlier decline (indicator D1; Target 6).
- Both agriculture and forestry are major land uses in the UK, and agricultural intensification has in the past have been linked to declines in wildlife. However, there

has been substantial recent progress in integrating biodiversity considerations into agriculture and forestry, for example through increases in the area of agricultural and forestry land managed for biodiversity (indicator B1; Target 7).

Key evidence sources used:

- UK Biodiversity Indicators
- *UK National Ecosystem Assessment*
- *Charting Progress 2*
- European Habitats Directive Article 17 reporting (habitats)
- LWEC Report Cards on climate change impacts (Morecroft & Speakman 2013)

Examples of relevant policies and instruments

More information can be found in Parts 1 and 2, or by following the links in Appendix 2.

- Agri-environment schemes (Sections 7.2, 8.1)
- Forest certification (Section 8.1)
- The Invasive Non-native Species Framework Strategy (Case Study F)
- The European/EC Marine Strategy Framework Directive (MSFD) (Section 5.3)
- The North East Atlantic Fisheries Commission (NEAFC) (Section 7.3.3)
- The European Water Framework Directive

Addressing areas of uncertainty and knowledge gaps:

- Habitat fragmentation/connectivity (indicator C2) – based on data from 2007; further analysis required.
- Climate change (indicators B3, B4) – under development.
- Water quality (indicator B7) – under development.
- Marine monitoring such as was used in *Charting Progress 2* is expected to continue to improve.
- More research is proposed on how to measure and address pressures from air pollution.
- Work investigating cost-effective ways to measure and map ecosystem health and services, climate change vulnerability, habitat extent and condition and ecological connectivity or fragmentation is underway.
- Analysing biodiversity impacts of climate change (BICCO-Net).

Target with an end date in 2015. Target 10: *By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.*

Some UK habitats are particularly vulnerable to climate change; on land the risks are clearest for montane habitats (due to increased temperature), wetlands (due to changes in water availability), and coastal habitats (due to sea-level rise) (Morecroft & Speakman 2013; Watts & Anderson 2013).

There are expected to be regional differences in the impact of climate change on biodiversity, reflecting different species, climate, substrates and patterns of land use and management. Guidance on adaptation to impacts of climate change has been published (National Adaptation Program 2013).

Where vulnerable habitats are on protected sites, measures are in place to control some pressures and damaging activities, and to increase the area in favourable or unfavourable recovering condition (indicator C1ii). The areas of sensitive UK habitats exceeding critical loads for acidification and eutrophication have fallen (indicator B5a), although critical loads

are still exceeded over a high percentage of area of sensitive habitats.

The clearest response to climate change in the marine environment has been a northward shift in the distribution of plankton, some fish and rocky shore species. The levels of marine pollution (indicator B5b) and sustainable fish stocks (indicator B2) have continued to improve. However, ocean acidification is considered to pose a major long-term threat to deep-sea corals and other calcifying organisms (Hughes & Narayanaswamy 2013).

Conclusion

Climate change is predicted to have increased impacts on both terrestrial and marine species and habitats. A complex interaction of factors is occurring, such that the impacts of climate change, though likely to continue to intensify, are far from fully understood. Guidance has been published on adaptation to reduce the impacts of climate change on biodiversity, and measures are being implemented to reduce pressures on protected sites and to enhance ecological connectivity.

See Appendix 4 for information about how Target 10 is addressed in the UK Overseas Territories and Crown Dependencies.

Overall conclusions/summary

There is evidence that several pressures are being reduced (e.g. air and marine pollution) and there is some recovery (e.g. acidification on land), but other pressures remain at damaging levels (nitrogen deposition, seabed disturbance), and some are increasing (climate change, non-native species). Substantial progress is being made on mainstreaming biodiversity objectives in sustainable agriculture, forestry and fisheries. Further research and development of associated indicators will enhance our ability to measure and report progress.

Significant progress has been made towards Target 10.

Summary of main indicators for Goal B				
Indicator number (Strategic goal/number), title (and section number in this report)			Assessment of change	
			Long term	Short term
B1. Agricultural and forest area under environmental management schemes (Section 8)	B1a. Area of land in agri-environment schemes (see Section 8)	Higher-level/ targeted schemes	 1992–2012	 2007–2012
		Entry-level type schemes		 2007–2012
	B1b. Area of forestry land certified as sustainably managed (see Section 8)	 2001–2013	 2008–2013	
B2. Sustainable fisheries (see Section 8)			 1990–2011	 2006–2011
B5. Pressure from pollution	B5a. Air pollution (see Section 3.1)	(i) Area affected by acidity	 1996–2010	 2005–2010
		(ii) Area affected by nitrogen	 1996–2010	 2005–2010
	B5b. Marine pollution (see Section 3.1)	 1990–2011	 2006–2011	
B6. Pressure from invasive species (see Section 3.1)	B6a. Freshwater invasive species		 1960–2008	 2000–2008
	B6b. Marine invasive species		 1960–2008	 2000–2008
	B6c. Terrestrial invasive species		 1960–2008	 2000–2008
C3. Status of habitats of European importance (see Section 2.1)				 2007–2013
D1: Biodiversity and ecosystem services (marine): fish size classes in the North Sea			 1983–2011	 2006–2011

STRATEGIC GOAL C:

To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity

Target 11: By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscape and seascapes.

Target 12: By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.

Target 13: By 2020, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity.

Assessment of progress: progress in most areas.

Strength of evidence: High.

Rationale for progress rating: key points

- In total, nine UK biodiversity indicators directly measure the status of biodiversity, consisting of 20 measures. Table 2.1 in Section 2.1 shows that the number of measures improving or stable is greater in the short-term than those that are deteriorating.
- Although the current extent of protected terrestrial and freshwater ecosystems in the UK exceeds 17%, further work is needed to determine whether these areas fully meet the criteria in Target 11. 7.75 million hectares of sea, both inshore and offshore, have been designated, mainly under the European Birds and Habitats Directives. This equates to 8.9 percent of the UK continental shelf area and it is expected that the area designated will increase in the years to come (indicator C1; Target 11).
- The proportion of Areas or Sites of Special Scientific Interest (A/SSSIs) in favourable condition has decreased slightly since 2005 (indicator C1). However the proportion in recovering condition – where management has been put in place to address the reasons for unfavourable condition – has increased, indicating that progress is being made towards effective management of sites (Target 11).
- The status of UK habitats listed on Annex I of the European Habitats Directive has deteriorated since 2007, due in part to new evidence on some of the pressures they are facing (indicator C3; Target 11).
Recent improvements have been observed for species listed on the European Habitats Directive annexes, for woodland birds, and for plants of arable and horticultural land (indicators C4, C5, C7). However a number of species groups show both long- and short-term declines, for example nationally-listed priority species, farmland birds, and plants of woodland and grassland habitats (indicators C4, C5, C7; Target 12).
- Although the status of priority species has declined, some signs of improvement are shown, with the status of more species increasing in the short term than in the long term (indicator C4; Target 12).
- Targeted conservation effort has contributed to the improved status of species listed on the Annexes of the European Habitats Directive (indicator C4; Target 12).
- A mixed picture emerges for the marine environment. *Charting Progress 2* showed that different species groups are improving or declining in different parts of the UK's

inshore and offshore waters. Many estuaries have become significantly cleaner, which has led to improvements in the diversity and numbers of fish, but populations of seabirds are decreasing in some regions. Some types of fishing have impacted the seabed, and the distribution of plankton species is changing as a result of a rise in sea temperature – which is likely to lead to changes in both pelagic and seabed communities (Target 12).

- The UK has a diverse farm animal genetic resource, including 235 native breeds of farm animals, despite some historic losses. The measure indicating resilience of genetic diversity in UK cattle breeds is increasing, and there has been no reported UK extinction of any breed of sheep or cattle since 2001 (indicator C9; Target 13).
- Collection of seeds of native species within the UK and across the world by the Millennium Seed Bank Partnership increased rapidly up to 2010, as reflected in the plant genetic resources Enrichment Index (indicator C9; Target 13).

Key evidence sources used:

- UK Biodiversity Indicators
- *Charting Progress 2*

Examples of relevant policies and instruments:

More information can be found in Parts 1 and 2, or by following the links in Appendix 2.

- Relevant country strategies (Section 5.2), policies (Section 6.2) and legislation (Appendix 2) for England, Northern Ireland, Scotland and Wales
- The European Marine Strategy Framework Directive (MSFD) (Section 5.3)

Addressing areas of uncertainty and knowledge gaps:

- Further work to quality assure the indicators.
- Further work to assess protected areas that meet the criteria in Target 11.
- Further work to determine trends of species from less frequent biological records and species in the marine environment.
- Further work to develop an indicator of ecological connectivity that can be tracked up to 2020.

Overall conclusions/summary

Progress has been made towards Goal C in most areas and there is strong evidence, from a large number of indicators and other sources.

The extent of protected areas continues to increase, and more sites are in recovering condition due to effective management. The overall status of assessed terrestrial and freshwater species has been in decline since comparable data became available in the 1970s, although for some species groups the decline has been halted or reversed in recent years. There is evidence that where effort has been targeted, species status has improved. Trends in the marine environment are mixed. Actions are in place to address many previously observed declines. Good progress is being made with conserving the genetic resources of plants and domesticated animals.

Summary of main indicators for Goal C			
Indicator number (Strategic goal/number), title (and section number in this report)		Assessment of change	
		Long term	Short term
C1. Protected areas (see Section 7.1)	C1a. Total area of protected areas: on land	 1950–2013	 2008–2013
	C1b. Total area of protected areas: at sea	 1950–2013	 2008–2013
	C1c. Condition of Areas/Sites of Special Scientific Interest		 2008–2012/13
C2. Habitat connectivity (see Section 3.1)	C2a. Broad-leaved, mixed and yew woodland		
	C2b. Neutral grassland		
C3. Status of habitats of European importance (see Section 2.1)			 2007–2013
C4. Status of threatened species (see Section 2.1)	C4a. Status of priority species	 1970–2010	 2005–2010
	C4b. Status of species of European importance		 2007–2013
C5. Birds of the wider countryside and at sea (see Section 2.1)	C5a. Farmland birds	 1970–2011	 2006–2011
	C5b. Woodland birds	 1970–2011	 2006–2011
	C5c. Wetland birds	 1975–2011	 2006–2011
	C5d. Seabirds	 1970–2012	 2007–2012
	C5e. Wintering waterbirds	 1975/6–2010/11	 2005/6–2010/11
C6. Insects of the wider countryside (butterflies) (see Section 2.1)	C6a. Semi-natural habitat specialists	 1976–2012	 2007–2012
	C6b. Species of the wider countryside	 1976–2012	 2007–2012
C7. Plants of the wider countryside (see Section 2.1)	C7a. Arable and horticultural land	 1990–2007	 1998–2007
	C7b. Woodland and grassland	 1990–2007	 1998–2007
	C7c. Boundary habitats	 1990–2007	 1998–2007
C8. Mammals of the wider countryside (bats) (see Section 2.1)	C8a. Bat populations	 1999–2012	 2007–2012
	C8b. Historical pipistrelle bat roost counts	 1977–1999	Not assessed
C9. Genetic resources for food and agriculture (see Section 2.1)	C9a. Animal genetic resources – effective population size	(i) Native sheep breeds	 2001–2007
		(ii) Native cattle breeds	 2001–2007
	C9b. Plant genetic resources – Enrichment Index	 1960–2012	 2007–2012

STRATEGIC GOAL D:

Enhance the benefits to all from biodiversity and ecosystems

Target 14: By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.

Target 15: By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.

Target 16: By 2015, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation.

Assessment of progress: progress in most areas.

Strength of evidence: Medium.

Rationale for progress rating: key points

- Of the range of services delivered in the UK by eight broad habitat types, about 30% have been assessed as currently declining over the longer term (Target 14).
- The contribution that nature and landscapes can make to health and quality of life is increasingly recognised, and the provision of good quality green space and associated green networks is an important component of policies in all four countries of the UK (Target 14).
- Work to restore habitats and improve ecosystem services at a landscape scale is proceeding throughout the UK. For example, 48 new Local Nature Partnerships (LNPs) have been established around England to provide a local approach to managing the natural environment in an integrated way. Following a national competition, in 2012 £7.5 million funding was awarded to 12 new Nature Improvement Areas (NIAs) in England, generating significant additional investment from other sources. In Scotland, Green Networks and Green Infrastructure projects aim to improve the environment by creating integrated habitat networks, and mapping of ecosystem health will inform targeted action (Targets 14, 15).
- Peatlands are vitally important to help secure climate change, biodiversity and water benefits, but they are threatened and many are degraded. In the last few decades, several peatland restoration initiatives have taken place across the UK and more are planned; the Peatland Code allows businesses to quantify the benefits of restoring damaged peat bogs (Targets 14, 15).
- The total area of both woodland and neutral grassland has increased as new habitat is created (Target 15).
- Although changes in population structure suggest that sustainability of UK fishing has declined seriously over the longer term, there are signs of recovery of the sustainability of this fishery over the shorter term, contributing to a range of ecosystem services (indicator D1; Target 14).
- The UK Government funds and leads the Ecosystem Services for Poverty Alleviation (ESPA) research programme, to provide new knowledge demonstrating how ecosystem services can reduce poverty and enhance well-being for the world's poor (Target 14).

- The UK aims to ratify the Nagoya Protocol by October 2015 (Target 16).

Key evidence sources used:

- UK Biodiversity Indicators
- *UK National Ecosystem Assessment*
- *UK Biodiversity Framework* and its published reports
- Written contributions from the country Governments and administrations
- Case studies A, B, C, D, H

Examples of relevant policies and instruments:

More information can be found in Parts 1 and 2, or by following the links in Appendix 2.

- Peatland Code (Case Study D)
- Payments for Ecosystem Services (Case Study C)
- Agri-environment schemes (Sections 7.2, 8.1)
- Forest certification (Section 8.1)
- Environmental accounting (Sections 6.1, 8.2.2)
- Biodiversity duty (Section 8.3.1)
- The European Habitats Directive
- The European Marine Strategy Framework Directive (Section 5.3)
- The European Water Framework Directive
- Numerous initiatives in the countries, see Section 8.3 and case studies
- European ABS Regulation
- The Natural Capital Committee (2014)
- Ecosystem Markets Task Force (2013)
- Scotland's Natural Capital Asset Index (Scottish Natural Heritage 2012)

Addressing areas of uncertainty and knowledge gaps:

- Further work to develop climate change impacts and adaptation indicators (indicators B3, B4).
- Further work to develop an indicator of ecological connectivity that can be tracked up to 2020
- Further work to develop an indicator of terrestrial and freshwater ecosystem services (indicator D2)
- A number of programmes to research and share knowledge about ecosystem services and biodiversity are underway, for example a follow-on phase of the *UK National Ecosystem Assessment*, and the Biodiversity & Ecosystem Service Sustainability (BESS), Valuing Nature Network and Ecosystems Knowledge Network research programmes.
- Further work to define and measure key outcomes for restoration of ecosystems.

Target with an end date in 2015. Target 16: *By 2015, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation.*

The UK has taken an active role in the negotiations of the European Regulation on access and benefit sharing (ABS), pushing for early agreement of a balanced overall package. In parallel the UK is preparing the domestic measures required to enable ratification. A consultation on the domestic measures was launched in March 2014 with a view to UK

ratification taking place in time for the first Meeting of the Parties to the Protocol in October 2015.

Overall conclusions/summary

Overall, progress has been made in most areas. The UK has made a good start toward Goal D, and actions are underway to lay the foundations to achieve this goal. Many of our ecosystem services have declined in the long term, with the result that their ability to maintain important services is also sub-optimal. The UK has initiated actions towards safeguarding and restoring ecosystems as required by Targets 14 and 15. Tools to support a more integrated ecosystems approach are being developed and tested. Actions are in place to improve and restore habitats, but it is too early to assess their overall outcomes. The UK is investing in evidence in this area through development of indicators, research, pilot projects and knowledge exchange. The UK is on track to deliver Target 16.

Summary of main indicators for Goal D		
Indicator number (Strategic goal/number), title (and section number in this report)	Assessment of change	
	Long term	Short term
D1. Biodiversity and ecosystem services (marine – fish size classes in the North Sea) (see Section 4)	 1983–2011	 2006–2011

STRATEGIC GOAL E:
**Enhance implementation through planning, knowledge management
and capacity building**

Target 17: By 2015 each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.

Target 18: By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.

Target 19: By 2020, knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied.

Target 20: By 2020, at the latest, the mobilization of financial resources for effectively implementing the Strategic Plan 2011-2020 from all sources and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization should increase substantially from the current levels. This target will be subject to changes contingent to resources needs assessments to be developed and reported by Parties.

Assessment of progress: substantial progress.
This assessment covers Targets 17, 19 and 20.

Strength of evidence: High.

Rationale for progress rating: key points

- Although traditional knowledge is used by some members of local communities in the UK, it is not a focus for government action to preserve its use and it is therefore not assessed (Target 18).
- The UK Government and devolved administrations are committed to developing and promoting science-based knowledge and have taken a lead in a number of areas, especially in assessing and valuing ecosystem services, and in citizen science (Defra 2013f). There is a strong focus on the interface between science, policy and practice, with a number of research programmes producing knowledge, tools and guidance for use within the UK and globally. The UK Government, institutions and experts are also active in international science-policy interfaces, including through the establishment of the Intergovernmental Platform for Biodiversity and Ecosystem Services (IPBES) (Target 19).
- The *UK National Ecosystem Assessment* (2011) was the first analysis of the UK's natural environment in terms of the benefits it provides to society. This major study provides a compelling evidence base. A further phase of this groundbreaking research is nearing completion, due to report in summer 2014 (Target 19).
- In 2012-13, UK public sector funding for international biodiversity totalled £56 million, an increase by 74 per cent since 2000-1 in real terms, and a small increase since 2009-10.
- The UK Government funds projects under the Darwin and Darwin Plus initiatives, which assist countries that are rich in biodiversity but poor in financial resources, and UK Overseas Territories, to build capacity and meet their objectives under the three major biodiversity conventions.
- Since 2009-10, overseas spending on biodiversity has benefitted from the UK's

significant International Climate Fund (ICF) spend on climate change adaptation and forestry. 20% of the 2011–2016 £3.87 billion ICF spend will be on forestry with biodiversity conservation and enhancement as a key co-benefit of these programmes. The UK also provides support to the Global Environment Facility (GEF), through DFID which has contributed £210 million to the 5th replenishment from 2010–2014. Approximately 30% of the overall GEF spend supports biodiversity-related programmes.

Key evidence sources used:

- UK Biodiversity Indicators
- *UK Biodiversity Framework* and its published reports
- Written contributions from the country Governments and administrations; and country strategies
- Case studies C, D
- UK ICF Implementation Plan (DECC 2011)

Examples of relevant policies and instruments:

More information can be found in Parts 1 and 2, or by following the links in Appendix 2.

- A follow on to the *UK National Ecosystem Assessment* to inform future policies and decisions (Section 7.2.1)
- A tool to allow users to see the impacts of different mixes of low-carbon technologies on biodiversity (Section 6.1)
- Biodiversity & Ecosystem Service Sustainability (BESS) research programme (NERC 2014)
- European Platform for Biodiversity Research Strategy (EPBRS 2014)
- Group on Earth Observations - Biodiversity Observation Network (GEO-BON 2014)
- Increasing the availability and use of biodiversity data in the UK and globally (National Biodiversity Network undated; Global Biodiversity Information Facility 2014)
- Intergovernmental Platform for Biodiversity and Ecosystem Services (IPBES)
- Living With Environmental Change science programme (LWEC 2014)
- Ecosystems Knowledge Network (2014)
- Marine Science Co-ordination Committee (MSCC 2014)
- Research to establish methods to assess air pollution policy impacts on ecosystem services and provide valuation (Section 6.1)
- The Ecosystem Services for Poverty Alleviation (ESPA) research programme (Section 6.1)
- Valuing Nature Network (Valuing Nature Network 2014)
- Work to develop efficient and effective European mechanisms to make evidence available to support biodiversity policy development
- Darwin Initiative (2014)

Addressing areas of uncertainty and knowledge gaps:

- Development of an indicator for biodiversity data used in decision-making (indicator E1).
- Climate change adaptation (indicator B3) – under development.
- Further development of indicator on public expenditure to add resources mobilised by voluntary and private sectors.
- Research priorities identified by Defra:
Restoring habitats, maintaining ecosystem services, improving status of wildlife and

addressing key threats

- assessment of habitats and ecosystem services; improving quality and accessibility of data on species;
- monitoring people's engagement with the natural environment;
- improving understanding of the risks, impacts and control of invasive non-native species;
- improving understanding of trends in biodiversity and the impacts of different pressures on biodiversity;
- developing methods to mitigate and compensate for impacts on biodiversity of infrastructure development;
- evaluating Nature Improvement Areas and outcomes of the England biodiversity strategy *Biodiversity 2020*;
- developing methods to resolve wildlife conflicts.

Supporting sustainable economic growth and securing benefits from ecosystems and biodiversity

- identifying opportunities for UK business to develop green markets, including the development of biodiversity offsets and payments for ecosystem services;
- developing methods for ecosystems accounting and supporting the Natural Capital Committee;
- developing practical tools to enable decision makers to secure the most benefits from ecosystems;
- evaluating the *Natural Environment White Paper* commitments.

International biodiversity

- improving the evidence base in UK Overseas Territories to assist in meeting international commitments;
- evidence to support implementation of international agreements including CBD, CITES and international wildlife trade;
- support for implementation of the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) work programme;
- mobilising data through the Global Biodiversity Information Facility (GBIF).

Target with an end date in 2015. Target 17: *By 2015 each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.*

The *UK Biodiversity Framework* (JNCC and Defra 2012) sets out the areas of work where the four UK countries agree that a joined-up UK approach is best. Its Implementation Plan includes 60 milestones over 23 areas of activity, many of which are important steps towards mainstreaming biodiversity.

Nearly all the strategic and practical planning, and actions, to achieve the Aichi Biodiversity Targets are carried out within and by the individual countries. Each country takes its own approach and has formally adopted a Biodiversity Strategy (see Section 6 for more detail). England and Scotland have updated their strategies since 2010; the other countries are in the process doing so, with the new Northern Ireland strategy expected in 2014, and a biodiversity strategy for Wales under active development.

Conclusion

The UK is on target. The *UK Biodiversity Framework* supplements the biodiversity strategies of the four UK countries, to implement the Strategic Plan for Biodiversity 2011-2020.

Overall conclusions/summary

Substantial progress. UK scientists and scientific institutions have played a major role in developing, applying and sharing knowledge, and they continue to be very active in the collection, interpretation and dissemination of biodiversity-relevant knowledge and the development of tools for evaluating ecosystems and policies. Despite a recent dip following the global financial crisis in 2008, public spending on biodiversity in the UK has increased by 76% since 2000, and spending on international biodiversity has increased year-on-year since 2009. Innovative approaches are being developed and tested to mobilise new financial resources. The UK is on track to meet Target 17.

The UK has a strong evidence base and further work is ongoing to develop indicators and undertake research in this area.

Summary of main indicators for Goal E			
Indicator number (Strategic goal/number), title (and section number in this report)		Assessment of change	
		Long term	Short term
E2. Expenditure on UK and international biodiversity (see Section 7)	E2a. Public sector expenditure on biodiversity in the UK	 2000/1–2012/13	 2007/8–2012/13
	E2b. UK public sector expenditure on international biodiversity	 2000/1–2012/13	 2007/8–2012/13

Q11: What has been the contribution of actions to implement the Convention towards the achievement of the relevant 2015 targets of the Millennium Development Goals in your country?

The relevant goal of the MDGs is Goal 7: *Ensure environmental sustainability*. The specific target related to biodiversity was *Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss*. The UK's contributions to meeting the Millennium Development Goals are led by the Department for International Development (DFID). Actions by the UK are thus more likely to have an impact on meeting the relevant Millennium Development Goals in countries other than the UK itself.

The UK Government maintains funding of £8 million (GBP) per annum for projects under the Darwin Initiative, which assists countries that are rich in biodiversity but poor in financial resources, and Darwin Plus, focussed on the UK Overseas Territories, to meet their objectives under the three major biodiversity conventions. The UK's International Climate Fund (ICF) has been launched to provide, by 2015, £3.87 billion (GBP) to help the world's poorest adapt to climate change and to promote cleaner, greener growth. All ICF forestry projects, which represent 20% of the total spend, must deliver biodiversity and poverty benefits (JNCC & Defra 2012).

The UK also provides support to the Global Environment Facility (GEF), through DFID which has contributed £210 million to the 5th replenishment from 2010–2014. Approximately 30% of the overall GEF spend supports biodiversity-related programmes in developing countries.

All DFID spend is geared toward the ultimate goal of sustainable poverty reduction, and DFID recognises that a healthy natural resource base is a key asset for developing countries. DFID programming reflects this recognition through the use of a safeguarding tool which examines DFID interventions during development for opportunities to use the programme to enhance the natural environment as well as to design out and mitigate against any risks posed by the intervention to the environment.

The UK is one of the major sources of global foreign investment and transnational corporations based here have a significant potential global role in transferring environmental best practice and promoting the value of ecosystems and biodiversity (JNCC 2009).

The UK is a significant importer of biomass, such as food for human or animal consumption, and forest or bioenergy products. Ongoing research offers an opportunity to monitor the pressures which UK consumption may cause in the countries of source, and can provide the evidence for the formulation of policies to avoid or mitigate potential impacts on the overseas ecosystems which provide the UK with essential biomass (Weighell 2011).

Actions taken in the UK Overseas Territories and Crown Dependencies, including numerous conservation initiatives and work towards formal biodiversity strategies, are consistent with the relevant Millennium Development Goals (namely goals 7.A & 7.B).

Q12: What lessons have been learned from the implementation of the Convention in your country?

12.1 Partnerships

Effective delivery of national strategies and action plans requires a strong partnership of statutory, voluntary, academic and business sectors, nationally and locally.

In the UK, biodiversity conservation and governance has been developed and implemented through a partnership of all the key sectors – statutory, voluntary, academic and business. Following the devolution, from 1998 onwards, of UK conservation responsibilities to Scotland, Wales and Northern Ireland, that spirit of partnership has characterised governance structures at country, regional and local level. Much of the work is delivered through partnerships involving Local Authorities, Statutory Agencies and NGOs which work together to identify and deliver local action for biodiversity, enhancing the quality and distinctiveness of local environments as well as contributing to achieving national targets.

12.2 Our approach must go beyond protected sites and species

The *UK National Ecosystem Assessment* and the major independent review of England's ecological network, *Making Space for Nature* (Lawton *et al* 2010), demonstrated that our biodiversity and natural infrastructure is fragmented. We are therefore working to establish more coherent and resilient ecological networks on land and at sea, capable of responding to the challenges of climate change and other pressures.

12.3 The importance of mainstreaming biodiversity

Work to mainstream consideration of biodiversity and ecosystem services is achieved through the biodiversity or environment strategies of each of the four countries of the UK and through the statutory conservation bodies as the main delivery agents. Implementing the strategies is a cross-government responsibility, with leadership from all departments. To halt biodiversity loss, strategies seek to make biodiversity part of all relevant government policies and emphasise that healthy, thriving and diverse ecosystems are essential to everybody's quality of life and well-being.

Public bodies have an important role in contributing to biodiversity, and domestic legislation in each of the four countries of the UK now includes a duty to conserve biodiversity on public bodies. Particular success has been achieved in mainstreaming biodiversity within agriculture policy, with 3.4 million hectares of farmland now under higher-level agri-environment schemes, as well as with forestry and planning policy. However, mainstreaming is a continuing challenge and further work is needed to integrate concern for biodiversity in other sectors. The growing understanding of the value of biodiversity and ecosystem services, particularly as a result of the work of TEEB (The Economics of Ecosystems and Biodiversity; for example, TEEB 2010), is key to this.

12.4 Indicators

Indicators have been a valuable way of summarising and communicating evidence, and maintaining momentum on policy initiatives. The UK has developed a set of 25 indicators, with 36 component measures (plus a number under development), to summarise progress against the Aichi Biodiversity Targets and other national priorities for biodiversity in the UK. The UK biodiversity indicators were first published as National Statistics in *Biodiversity Indicators in Your Pocket 2007* (Defra 2007b). They have been subsequently updated

annually, and revised in 2012 to reflect the *Strategic Plan for Biodiversity 2011-2020* (CBD 2010).

Indicators have also been adopted as a key measure of progress in implementation of country biodiversity strategies in England, Scotland, Wales and Northern Ireland. Where possible the same or similar indicators are used at UK and country levels, and mainstreamed within other sectors (e.g. marine, sustainable development). The indicators, together with more specific reporting on actions and commitments within the country strategies, provide an effective means of assessing and communicating progress on implementation of the *Strategic Plan for Biodiversity 2011-2020* in the UK.

The goals and targets of the *Strategic Plan for Biodiversity 2011-2020* give a useful framework for linking indicator-based assessments at sub-national, national, regional (European) and global scales. Reporting requirements under the European Habitats Directive also provide a common assessment framework for species and habitats of European importance.

However, no matter how good our set of indicators is, there remains the problem of overall assessment to form a bigger picture. Different indicators display differing trends with some increasing, others decreasing, some fluctuating and others remaining the same. Work on adoption of an ecosystem approach towards building natural capital together with an index of natural capital is providing one way of assessing overall change and progress towards the desired outcome. Methods of policy and programme evaluation are being developed and applied.

12.5 Working across political boundaries

At the UK level, the *UK Biodiversity Framework* supports the four country strategies and addresses issues where co-ordinated action is needed or is advantageous at the UK level. Actions undertaken in the UK contribute towards achievement of the EU Biodiversity Strategy and meet commitments under European Union (EU) legislation. The UK also shares knowledge, expertise and tools with EU partners, and benefits from EU and other Member States investments.

The sharing of a land border with another EU Member State has necessitated the development of close bilateral co-operation between both jurisdictions in order to protect and conserve biodiversity on the island of Ireland.

12.6 Priority focus

The UK's priority is to focus on three core parts of the mission for the *Strategic Plan for Biodiversity 2011-2020*: the 20 Aichi Biodiversity Targets; resource mobilisation; and access and benefit sharing of genetic resources.

12.7 Overseas Territories and Crown Dependencies

The situation with regard to each of the Overseas Territories and Crown Dependencies varies. Identified lessons learned from the implementation of the CBD include: the need for further research and funding in order to better understand some of the observed declines in biodiversity; the challenges posed by conflict between the aims of the Convention and economic drivers (e.g. fisheries); and the need to ensure that adequate resources and skills are available to enable implementation. It is also considered beneficial to have the external driver of the CBD to push forward environmental gains.

Fifth National Report to the United Nations Convention on Biological Diversity: United Kingdom

Appendix 1: Information concerning the reporting party and preparation of the fifth National Report

April 2014

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Fifth National Report to the United Nations Convention on Biological Diversity: United Kingdom

Appendix 1: Information concerning the reporting party and preparation of the fifth national report

Scope and approach

This report covers the UK, i.e. England, Northern Ireland, Scotland, Wales and the four UK Overseas Territories and two Crown Dependencies to which the UK's ratification of the CBD has been extended¹. It does not cover work carried out at European level, as the European Union (EU) reports separately to the CBD secretariat.

The report follows the basic structure specified in the CBD guidance, but has an extra Appendix 4, to cover detailed reports from the Overseas Territories and Crown Dependencies, and an Appendix 5, which includes detailed graphs and summary information about the UK biodiversity indicators.

We have four separate countries, a UK Government with reserved powers, varying arrangements for overseeing inshore and offshore activities, and a number of Overseas Territories and Crown Dependencies. It is not, therefore, possible to submit a simple, streamlined set of evidence giving a unified picture. Rather, we have compiled relevant evidence for the different elements, and made a very brief summary conclusion for each of the twelve reporting questions.

Eight case studies are included to illustrate particular actions, to show approaches across the UK, and/or to highlight individual projects which should be of interest to a global audience.

Governance

The final report is to be signed off by the environment ministers of the UK and the four devolved UK country administrations. The draft report was compiled by the Joint Nature Conservation Committee (JNCC) under the oversight of the Four Countries' Biodiversity Group (4CBG), which agreed the overall approach. All the four UK country administrations and conservation agencies are represented on 4CBG.

Input from UK governments

The country administrations and governments of the Overseas Territories and Crown Dependencies were invited to contribute text and evidence for the relevant sections.

¹ The four Overseas Territories to which the UK's ratification of the CBD has been extended are British Virgin Islands, Cayman Islands, Gibraltar and St Helena, Ascension & Tristan da Cunha. The Crown Dependencies to which the UK's ratification has been extended are the Isle of Man and Jersey.

Main sources of evidence

To maximise the quality and focus whilst remaining relatively brief, the report is based on a small number of highly authoritative sources, rather than 'all available evidence'. The main sources are listed below, with notes to explain why they were accepted as credible.

UK Biodiversity Indicators

Indicators are useful tools for summarising and communicating broad trends. They are not intended to incorporate all the relevant information available in the UK. They are best seen, as their name suggests, as indicative of wider changes. The UK biodiversity indicators are dependent on a wide variety of data, provided by Government, research bodies and the voluntary sector, and have been developed in a co-operative fashion, with input from government, statutory agencies, non-governmental organisations, and academic institutes, so that the UK can communicate the results of monitoring and surveillance. The UK Biodiversity Indicators Steering Group is responsible for developing and agreeing indicators. The UK biodiversity indicators publication (<http://jncc.defra.gov.uk/page-4229>) is designated by Defra as a National Statistics compendium; the presentation and assessment of the indicators has been verified by the data providers, it is overseen by Government Statisticians in Defra and is subject to review by the UK Statistics Authority.

The indicators focus on biodiversity outcomes, are based on reliable and consistent data, and make use of existing data sources, in order to avoid additional burdens in terms of time and money.

The UK biodiversity indicators were originally developed to assess progress against the 2010 biodiversity target. They were subsequently comprehensively reviewed during 2011 and 2012 to ensure they continue to be based on the most robust and reliable available data, and remain relevant to the 20 Aichi Biodiversity Targets outlined in the *Strategic Plan for Biodiversity 2011-2020*, produced by the CBD.

A number of refinements to the existing indicators were identified to improve their relevance, make them easier to understand, or to address concerns over data quality or availability. Where there were no indicators for particular Aichi Biodiversity Targets, or where the existing indicators were only indirectly linked to the targets, new indicators have been identified. Many of these aim to allow us to better report on the benefits that humans receive from the environment, as recognised in the Millennium Ecosystem Assessment. The first set of revised UK indicators was published in May 2012, and again in October 2013. In some cases development work is ongoing, and where this is the case, the work to develop them over the next two to three years has been described briefly. Where possible the indicators cover the UK as a whole. In a few cases, which are made clear on the individual indicator pages, indicators are presented for Great Britain (England, Scotland and Wales, but not Northern Ireland), or an alternative subset of the UK's four countries.

The information from the indicators has been summarised in this report, briefly in the text and in more detail in Appendix 5 – for details about them and how they were compiled, readers are strongly recommended to read the full publication and its supporting documentation (<http://jncc.defra.gov.uk/page-4229>).

UK Post-2010 Biodiversity Framework and its published reports

The overarching *UK Post-2010 Biodiversity Framework* was developed under the direction of 4CGB and was published in July 2012, having been signed by all four UK environment ministers. The implementation plan for the *Framework*, including milestones, and the regular

reports against the plan, are delivered by officials working on the relevant policies, and agreed by 4CGB. For brevity it is referred to as the *UK Biodiversity Framework* in the report.

UK National Ecosystem Assessment

The *UK NEA* (<http://uknea.unep-wcmc.org/Default.aspx>) brought together about 500 experts in the natural sciences, economics and the social sciences to make the first analysis of the UK's natural environment in terms of the benefits it provides to society and continuing economic prosperity. It was an inclusive process involving government, academic, NGO and private sector institutions, was overseen by a user group as well as its funders, and was peer-reviewed.

Written contributions from the country governments and administrations

Written contributions were supplied by officials closely involved in the development and implementation of the strategies, policies and other instruments for biodiversity in their country.

In addition to England, Northern Ireland, Scotland and Wales, the UK has a number of Overseas Territories and Crown Dependencies. The CBD has been extended to six of these, as follows:

Overseas Territories: British Virgin Islands; Cayman Islands; Gibraltar; also the single territory of St Helena, Ascension, and Tristan da Cunha (which submitted three separate reports).

Crown Dependencies: Isle of Man; Jersey.

The reports from these Overseas Territories and Crown Dependencies are included as Appendix 4 and very briefly summarised in the main report

European Habitats Directive Article 17 reporting (habitats)

This is a statutory report which requires the conservation agencies in all four countries to assess the conservation status of the UK's habitats and species of European importance. The third national report was published in October 2013 (<http://jncc.defra.gov.uk/page-6387>) following a public consultation.

Charting Progress 2

Charting Progress 2, published in 2010, is the first major UK-wide assessment of marine habitats and species which shows, with varying degrees of confidence, that human and natural pressures have impacts on many of our habitats and species. It uses consistent assessment criteria, is compiled by working groups of academics and experts and overseen by an overarching group which includes stakeholders.

Stakeholder engagement

Most of the main sources of evidence have had high levels of stakeholder input. The indicators use a number of datasets which rely heavily on the activities of citizens and volunteers, as well as advice from stakeholder forum meetings. The country biodiversity strategies and policies are underpinned by partnership approaches and formal processes of engagement including consultation, joint governance groups, workshops and surveys.

Charting Progress 2 has been produced by the UK Marine Monitoring and Assessment Strategy (UKMMAS) community of a large number of scientific, statutory and business stakeholders.

Parts I and II, and the appendices of this report were open for public consultation from December 2013 to February 2014. Responses were received from the following, and appropriate changes and improvements were made to the report.

Respondents to consultation

British Association for Shooting and Conservation (BASC)

Government of Gibraltar

International Society for Fungal Conservation, Member

International Society for Fungal Conservation, President

Individual respondent; no affiliation given

Plantlife

Royal Society for the Protection of Birds (RSPB); two responses

UK Overseas Territories Conservation Forum (UKOTCF)

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Appendix 2: References and further sources of information

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Appendix 2a: References

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Appendix 2b: Sources of information by topic.

This section includes sources which are referred to in the text (also listed alphabetically as 'references', above), organised by topic for convenience. It also includes sources of further information about biodiversity in the UK and its Overseas Territories and Crown Dependencies, which readers may wish to see. The sources take the form of references to publications, and/or of links to documents or web pages; although the links are provided because the destination sites are likely to be of interest to readers, no endorsement of the contents of any site should be implied.

Broad topic	Topic	Link
Country Biodiversity Strategies and Groups	UK Post-2010 Biodiversity Framework	http://jncc.defra.gov.uk/page-6189
Country Biodiversity Strategies and Groups	UK Post-2010 Biodiversity Framework: Implementation Plan – 1 st Annual Report	http://jncc.defra.gov.uk/page-6584
Country Biodiversity Strategies and Groups	UK Post-2010 Biodiversity Framework: Implementation Plan	http://jncc.defra.gov.uk/page-6583
Country Biodiversity Strategies and Groups	Biodiversity 2020: A strategy for England's wildlife and ecosystem services	http://www.defra.gov.uk/publications/2011/08/19/pb13583-biodiversity-strategy-2020/
Country Biodiversity Strategies and Groups	Northern Ireland Biodiversity Strategy (web-page)	http://www.doeni.gov.uk/niea/biodiversity/northern_ireland_s_biodiversity/northern_ireland_biodiversity_strategy.htm
Country Biodiversity Strategies and Groups	Northern Ireland Biodiversity Strategy (Report)	http://www.ehsni.gov.uk/nibs2002.pdf
Country Biodiversity Strategies and Groups	Biodiversity Northern Ireland	http://biodiversityni.com/
Country Biodiversity Strategies and Groups	Scotland's Biodiversity: It's in Your Hands. 2004	http://www.scotland.gov.uk/Publications/2004/05/19366/37250
Country Biodiversity Strategies and groups	2020 Challenge for Scotland's Biodiversity	http://www.scotland.gov.uk/Resource/0042/00425276.pdf
Country Biodiversity Strategies and Groups	Scottish Biodiversity Forum	http://www.biodiversityscotland.gov.uk/
Country Biodiversity Strategies and Groups	Environment Strategy for Wales 2006	http://wales.gov.uk/topics/environment/countryside/epq/envstratforwales/strategy/?lang=en
Country Biodiversity Strategies and Groups	Wales Biodiversity Framework 2009	http://www.biodiversitywales.org.uk/en-GB/Wales-Biodiversity-Framework
Country Biodiversity Strategies and Groups	Wales Biodiversity Partnership	http://www.biodiversitywales.org.uk/
Funding and valuation	Accounting for the value of nature in the UK	http://www.ons.gov.uk/ons/guide-method/user-guidance/well-being/publications/roadmap-on-natural-capital-accounting.pdf
Funding and valuation	Darwin Initiative	http://darwin.defra.gov.uk/
Funding and valuation	Darwin Plus	http://darwin.defra.gov.uk/apply/darwin-plus/
Funding and valuation	Economic Valuation of the Benefits of Ecosystem Services delivered by the UK Biodiversity Action Plan	http://users.aber.ac.uk/mec/Publications/Reports/Value%20UK%20BAP%20FINAL%20published%20report%20v2.pdf

Funding and valuation	International Climate Fund	https://www.gov.uk/government/policies/taking-international-action-to-mitigate-climate-change/supporting-pages/international-climate-fund-icf
Funding and valuation	The Economics of Ecosystems and Biodiversity (TEEB)	www.teebweb.org
Funding and valuation	The State of Natural Capital: Towards a framework for measurement and valuation.	http://www.defra.gov.uk/naturalcapitalcommittee/files/State-of-Natural-Capital-Report-2013.pdf
Funding and valuation	The State of Natural Capital: Restoring our Natural Assets. Second report to the Economic Affairs Committee.	http://www.naturalcapitalcommittee.org/state-of-natural-capital-reports.html
Funding and valuation	Wealth Accounting and the Valuation of Ecosystem Services	http://www.wavespartnership.org/waves/
Funding and valuation	Realising nature's value: The Final Report of the Ecosystem Markets Task Force.	http://www.defra.gov.uk/ecosystem-markets/files/Ecosystem-Markets-Task-Force-Final-Report-.pdf
Indicators, data, statistics and official state of biodiversity reports	Charting Progress 2 Healthy and Biologically Diverse Seas Feeder report	http://chartingprogress.defra.gov.uk/healthy-and-biologically-diverse-seas-feeder-report
Indicators, data, statistics and official state of biodiversity reports	Charting Progress 2. The state of the UK seas	http://chartingprogress.defra.gov.uk/resources
Indicators, data, statistics and official state of biodiversity reports	England biodiversity indicators	https://www.gov.uk/government/publications/england-biodiversity-indicators
Indicators, data, statistics and official state of biodiversity reports	Global Biodiversity Information Facility (GBIF)	http://www.gbif.org/
Indicators, data, statistics and official state of biodiversity reports	Group on Earth Observations Biodiversity Observation Network (GEO-BON)	https://www.earthobservations.org/index.shtml
Indicators, data, statistics and official state of biodiversity reports	LWEC climate change report card	http://www.lwec.org.uk/resources/report-cards
Indicators, data, statistics and official state of biodiversity reports	Marine Climate Change Impacts Annual Report Card 2010–2011	http://www.mccip.org.uk/annual-report-card.aspx
Indicators, data, statistics and official state of biodiversity reports	Marine Climate Change Impacts Partnership – annual report card 2013	http://www.mccip.org.uk/annual-report-card/2013.aspx
Indicators, data, statistics and official state of biodiversity reports	Marine Strategy part one: UK initial assessment and good environmental status	https://www.gov.uk/government/publications/marine-strategy-part-one-uk-initial-assessment-and-good-environmental-status
Indicators, data, statistics and official state of biodiversity reports	Natural England's MENE Survey	http://www.naturalengland.org.uk/ourwork/evidence/mene.aspx

Indicators, data, statistics and official state of biodiversity reports	From Evidence to Opportunity: A Second Assessment of the State of Northern Ireland's Environment.	http://www.doeni.gov.uk/niea/index/about-niea/state_of_the_environment/state-of-the-environment-report-2013-text.htm
Indicators, data, statistics and official state of biodiversity reports	Review of Transboundary Air Pollution (ROTAP)	http://www.rotap.ceh.ac.uk/about
Indicators, data, statistics and official state of biodiversity reports	Scotland. The Changing Nature of Scotland	http://www.tsoshop.co.uk/parliament/bookstore.asp?Action=Book&ProductId=9780114973599
Indicators, data, statistics and official state of biodiversity reports	Scotland's biodiversity state indicators	http://www.snh.gov.uk/publications-data-and-research/our-changing-environment/scotlands-indicators/biodiversity-indicators/biodiversity-state-indicators-list
Indicators, data, statistics and official state of biodiversity reports	Scotland's Wildlife: An assessment of biodiversity in 2010.	http://www.snh.gov.uk/docs/B811968.pdf
Indicators, data, statistics and official state of biodiversity reports	Terrestrial Biodiversity Climate Change Impacts: Report Card 2012-13	http://www.lwec.org.uk/sites/default/files/attachments_page/Biodiversity%20English%20for%20Web.pdf
Indicators, data, statistics and official state of biodiversity reports	The greening government commitments. Annual report on government departments' progress against 2015 Targets in 2011-12	https://www.gov.uk/government/publications/greening-government-commitments
Indicators, data, statistics and official state of biodiversity reports	The National Biodiversity Network <i>"Making all biological records freely and easily available to everyone"</i>	http://www.nbn.org.uk/Home.aspx
Indicators, data, statistics and official state of biodiversity reports	UK Biodiversity Indicators in Your Pocket (BIYP)	http://jncc.defra.gov.uk/page-4229
Indicators, data, statistics and official state of biodiversity reports	UK National Ecosystem Assessment	UK National Ecosystem Assessment
Indicators, data, statistics and official state of biodiversity reports	UK Sea Fisheries Statistics 2012	http://www.marinemangement.org.uk/fisheries/statistics/documents/ukseafish/2012/final.pdf
Indicators, data, statistics and official state of biodiversity reports	Understanding citizen science and environmental monitoring	http://www.ceh.ac.uk/products/publications/documents/citizensciencereview.pdf
Indicators, data, statistics and official state of biodiversity reports	Wales. State of the Environment. 2012	http://wales.gov.uk/topics/statistics/headlines/environment2012/120725/?lang=en
Indicators, data, statistics and official state of biodiversity reports	Wales. Statistical bulletin: State of the Environment. 2012	http://wales.gov.uk/docs/statistics/2012/120725sb662012en.pdf
Indicators, data, statistics and official state of biodiversity reports	Water Climate Change Impacts: Report Card 2012-13	http://www.lwec.org.uk/sites/default/files/attachments_report_cards/Water_report_card_web.pdf

Legislation	Marine and Coastal Access Act 2009	http://www.legislation.gov.uk/ukpga/2009/23/pdfs/ukpga_20090023_en.pdf
Legislation	The Natural Environment and Rural Communities Act 2006	http://www.legislation.gov.uk/ukpga/2006/16/contents
Legislation	Wildlife and Natural Environment Act (Northern Ireland) 2011	http://www.legislation.gov.uk/nia/2011/15/crossheading/biodiversity
Legislation	Marine (Scotland) Act 2010	http://www.legislation.gov.uk/asp/2010/5/contents
Legislation	The Nature Conservation (Scotland) Act 2004	http://www.legislation.gov.uk/asp/2004/6/contents
Legislation	Wildlife and Natural Environment (Scotland) Act 2011	http://www.legislation.gov.uk/asp/2011/6/contents
Legislation	The Natural Resources Body for Wales (Establishment) Order 2012	http://www.legislation.gov.uk/wsi/2012/1903/note/made
Legislation	EC Directive 2008/56/EC (Marine Strategy Framework Directive)	http://jncc.defra.gov.uk/page-5193
Legislation	EC Directive 2009/147/EC on the Conservation of Wild Birds (Birds Directive)	http://jncc.defra.gov.uk/page-1373
Legislation	EC Directive 92/43/EEC (Water Framework Directive)	http://jncc.defra.gov.uk/page-1375
Legislation	EC Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (Habitats Directive)	http://jncc.defra.gov.uk/page-1374
Legislation	EC proposal for a regulation on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization	http://ec.europa.eu/environment/biodiversity/international/abs/index_en.htm
Other official strategies, policies, position papers and guidance	2050 Pathways – Exploring how the UK can meet the 2050 emission reduction target using the web-based 2050 Calculator	https://www.gov.uk/2050-pathways-analysis
Other official strategies, policies, position papers and guidance	Defra Biodiversity and Ecosystems Evidence Plan	https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/221078/pb13908-evidenceplan-biodiversity-ecosystems.pdf
Other official strategies, policies, position papers and guidance	England. Government Forestry Policy Statement	https://www.gov.uk/government/publications/government-forestry-policy-statement
Other official strategies, policies, position papers and guidance	England. Making Space for Nature	https://www.gov.uk/government/news/making-space-for-nature-a-review-of-englands-wildlife-sites-published-today
Other official strategies, policies, position papers and guidance	England. The natural choice: securing the value of nature (Natural Environment White Paper)	http://www.official-documents.gov.uk/document/cm80/8082/8082.asp

Other official strategies, policies, position papers and guidance	European Platform for Biodiversity Research Strategy (EPBRS)	http://www.epbrs.org/
Other official strategies, policies, position papers and guidance	Guidance for incorporating biodiversity and ecosystem service values into NBSAPs	http://www.unep-wcmc.org/guidance-for-incorporating-biodiversity-and-ecosystem-service-values-into-nbsaps_1026.html
Other official strategies, policies, position papers and guidance	House of Commons Environmental Audit Committee: Halting biodiversity loss	http://www.publications.parliament.uk/pa/cm200708/cmselect/cmenvaud/743/743.pdf
Other official strategies, policies, position papers and guidance	Invasive Non-native Species Framework Strategy (for Great Britain)	http://www.naturalengland.org.uk/ourwork/conservation/biodiversity/threats/frameworkstrategy.aspx
Other official strategies, policies, position papers and guidance	Managing the land in a changing climate: Committee of Climate Change (Adaptation Sub-committee, Progress Report 2013)	http://www.theccc.org.uk/publication/managing-the-land-in-a-changing-climate/
Other official strategies, policies, position papers and guidance	Marine Science Co-ordination Committee (MSCC)	http://www.defra.gov.uk/mscc/about/
Other official strategies, policies, position papers and guidance	Non-Native Species in Great Britain: establishment, detection and reporting to inform effective decision making (Roy <i>et al</i> , 2012)	https://secure.fera.defra.gov.uk/nonnative/species/downloadDocument.cfm?id=753
Other official strategies, policies, position papers and guidance	Northern Ireland. An Invasive Alien Species Strategy for Northern Ireland	www.doeni.gov.uk/invasive_alien_species_strategy_2013.pdf
Other official strategies, policies, position papers and guidance	Protecting and sustainably using the marine environment	https://www.gov.uk/government/policies/protecting-and-sustainably-using-the-marine-environment
Other official strategies, policies, position papers and guidance	Review of the Biodiversity Duty	http://www.biodiversitysouthwest.org.uk/docs/BiodiversityDutyReviewFullReport.pdf
Other official strategies, policies, position papers and guidance	Scotland. Getting the best from our land – A land use strategy for Scotland	http://www.scotland.gov.uk/Publications/2011/03/17091927/0
Other official strategies, policies, position papers and guidance	Supplementary guidance on accounting for environmental impacts	https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/191500/Accounting_for_environmental_impacts.pdf
Other official strategies, policies, position papers and guidance	The Living with Environmental Change (LWEC) Partnership	http://www.lwec.org.uk/
Other official strategies, policies, position papers and guidance	The UK 2050 Calculator	http://2050-calculator-tool.decc.gov.uk/
Other official strategies, policies, position papers and guidance	UK Clearing House Mechanism for biodiversity	http://uk.chm-cbd.net
Other official strategies, policies, position papers and guidance	UK contribution to an Ecologically Coherent MPA Network in the North East Atlantic. Joint administrations statement	http://www.scotland.gov.uk/Resource/0041/00411304.pdf

Other official strategies, policies, position papers and guidance	Valuing Nature Network (VNN)	http://www.valuing-nature.net/about
Other official strategies, policies, position papers and guidance	Wales. Action plan for pollinators	http://wales.gov.uk/topics/environment/countryside/consmanagement/conservation/biodiversity/action-plan-for-pollinators/?lang=en
Other official strategies, policies, position papers and guidance	Wales. Environment Bill – White Paper consultation draft	http://wales.gov.uk/consultations/environmentandcountryside/environment-bill-white-paper/?lang=en
Other official strategies, policies, position papers and guidance	Wales. Natural Environment and Rural Communities Act 2006 (NERC) Biodiversity Duty	http://www.biodiversitywales.org.uk/en-GB/NERC-Biodiversity-Duty
Other official strategies, policies, position papers and guidance	Wales. Natural Resource Management	http://wales.gov.uk/topics/environment/countryside/consmanagement/natural-resources-management/?lang=en
Other official strategies, policies, position papers and guidance	Wales. Natural Resources Wales Business Plan 2013–2014	http://naturalresourceswales.gov.uk/our-work/about-us/who-we-are-what-we-do/?lang=en
Other official strategies, policies, position papers and guidance	Wales. Sustaining a Living Wales – A green paper on a new approach to natural resource management in Wales	http://wales.gov.uk/consultations/environmentandcountryside/sustaining-wales/?lang=en
Other official strategies, policies, position papers and guidance	Wales. Water Strategy for Wales – Strategic Environmental Assessment scoping document	http://wales.gov.uk/docs/desh/consultation/130719water-strategy-environmental-assessment-scoping-en.pdf
Other official strategies, policies, position papers and guidance	Ecosystems Knowledge Network	http://ecosystemsknowledge.net/
Other official strategies, policies, position papers and guidance	The National Adaptation Programme: Making the country resilient to a changing climate	https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/209866/pb13942-nap-20130701.pdf
Stakeholder-led evidence	Cybertruffle	http://www.cybertruffle.org.uk/
Stakeholder-led evidence	Index Fungorum	http://www.indexfungorum.org/
Stakeholder-led evidence	Nature Check 2013 – report	http://www.wcl.org.uk/docs/Link_Nature_Check_Report_November_2013.pdf
Stakeholder-led evidence	Nature Check 2013 – survey	http://www.wcl.org.uk/docs/ComRes_Nature_Check_Survey_November_2013.pdf
Stakeholder-led evidence	The Amphibians and Reptiles of the UK Overseas Territories Crown Dependencies and Sovereign Base Areas. Species Inventory and Overview of Conservation and Research Priorities (Edgar 2010)	http://www.arc-trust.org/about-us/What-we-do/overseas
Stakeholder-led evidence	The catastrophic impact of invasive mammalian predators on birds of the UK Overseas Territories: a review and synthesis. (Hilton & Cuthbert, 2010, <i>Ibis</i> , 152 , 443-458)	http://onlinelibrary.wiley.com/doi/10.1111/j.1474-919X.2010.01031.x/pdf

Stakeholder-led evidence	The eradication of feral cats from Ascension Island and its subsequent recolonization by seabirds (Ratcliffe <i>et al</i> , 2010)	http://journals.cambridge.org/action/displayAbstract?fromPage=online&aid=6829516 (abstract only)
Stakeholder-led evidence	The State of Nature report	http://www.rspb.org.uk/Images/stateofnature_tcm9-345839.pdf
Stakeholder-led evidence	State of Nature – England	http://www.rspb.org.uk/Images/england_tcm9-345846.pdf
Stakeholder-led evidence	State of Nature – Northern Ireland	http://www.rspb.org.uk/Images/northernireland_tcm9-345856.pdf
Stakeholder-led evidence	State of Nature – Scotland	http://www.rspb.org.uk/Images/scotland_tcm9-345855.pdf
Stakeholder-led evidence	State of Nature – Wales	http://www.rspb.org.uk/Images/wales_tcm9-345854.pdf
Stakeholder-led evidence	The State of Nature Webpage	http://www.rspb.org.uk/ourwork/projects/details/363867-the-state-of-nature-report
Stakeholder-led evidence	The State of the UK's birds 2013	http://www.bto.org/volunteer-surveys/bbs/bbs-publications/sukb
Stakeholder-led evidence	The Wild Network	https://projectwildthing.com/thewildnetwork
Stakeholder-led evidence	UK Overseas Territories and The Environmental Charter	http://www.ukotcf.org/charters/index.htm
Stakeholder-led evidence	Wildlife and Countryside Link	http://www.wcl.org.uk/

Fifth National Report to the United Nations Convention on Biological Diversity: United Kingdom

Appendix 3: Thematic programmes and cross-cutting issues, including Global Strategy for Plant Conservation

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Fifth National Report to the United Nations Convention on Biological Diversity: United Kingdom

Appendix 3: Thematic programmes and cross-cutting issues, including Global Strategy for Plant Conservation

In the UK, thematic and cross-cutting work is fully integrated into biodiversity strategies and policies. Therefore there is no comprehensive report by theme or cross-cutting issue.

Work towards the Global Strategy for Plant Conservation (GSPC) has however been independently co-ordinated in the UK, and a report on its implementation follows.

The report on GSPC implementation in the UK has been produced by the GSPC Technical Advisory Group for the UK. This comprises Chris Cheffings (JNCC, GSPC National Focal Point), Ian Taylor (Natural England), Liz Howe (Natural Resources Wales), Iain Macdonald and Dave Genney (Scottish Natural Heritage), Nicola Hutchinson and Camilla Keane (Plantlife), and Mike Fay and Natasha Ali (Royal Botanic Gardens, Kew). Additional input was provided by Mark Wright (Northern Ireland Environment Agency), Trevor Dines (Plantlife) and the Plant Link groups.

It was agreed in 2003 that implementation of GSPC in the UK should include work on algae and fungi as well as on all plants. However, the global targets are set with vascular plants as the focus. Therefore, the report on UK progress includes information on a wide range of taxonomic groups within the algae, fungi and plants, but greater prominence is given to information regarding vascular plants as this is likely to be more consistent with global information on GSPC implementation.

For each of the GSPC targets, there was a consideration of whether there were any **relevant UK Indicators** which could demonstrate the current direction of change and progress. Relevant UK Indicators were identified using the following approach:

1. Recommended global indicators were extracted from document UNEP/CBD/SBSTTA/16/11;
2. These global indicators were compared to the *Strategic Plan for Biodiversity 2011-2020* using Decision XI/3 as a basis;
3. Relevant UK biodiversity indicators for these CBD Strategic Plan targets were extracted from papers for the 6th Biodiversity Indicators Forum.

This process identified relevant UK Indicators for eight of the 16 GSPC targets.

Following consideration of the UK biodiversity indicators, consideration was given to whether there was a need for a focussed **commentary** on the indicators, particularly if there was high uncertainty regarding how well the indicator reflected progress for plant conservation. The Technical Advisory Group agreed that any such commentary needed to be evidence-driven, and hence the focus is on additional quantitative information that can interpret the UK Indicator for plant conservation.

All GSPC targets have a **narrative** section. For the eight targets without relevant UK Indicators, this section provides the only evidence regarding progress, and for these targets

the Technical Advisory Group attempted as far as possible to provide quantitative information. For other targets, the narrative provided an opportunity to provide information that was complementary to that within the UK Indicator. The narrative section also provided an opportunity to highlight some positive successes within GSPC implementation. Much of this narrative was provided by Plant Link groups and their member organisations. The Plant Link groups collated much more information than it was possible to include within this report; this longer collation may eventually be published by Plant Link.

Target 1: An online Flora of all known plants

Narrative

This is a global target but the outcomes will have national relevance and there are numerous national initiatives in progress.

UK institutions are among those leading in the implementation of Target 1 at the global level. A Council of the World Flora Online Consortium has been established to include representatives of organizations and institutions that have signed the World Flora Online 'Memorandum of Understanding'. The initiative was led by three botanical institutions, including two UK-based organisations – the Royal Botanic Garden Edinburgh and the Royal Botanic Gardens, Kew. So far 17 Institutions from around the world have signed. Discussions to date have focused on technical interoperability so that interested partners can work towards sharing information. There is good progress towards making information about all known plants available online.

The Plant List (www.theplantlist.org) provides a working list of known plant species. The Plant List is co-ordinated by the Royal Botanic Gardens, Kew and Missouri Botanical Garden with the involvement of many partners worldwide. A new version will shortly be released to help identify gaps in coverage of quality information.

Within the UK:

- Vascular plants and bryophytes have complete floras which are actively maintained and worked on.
- Fungi are much less complete, but (1) lichenised and lichenicolous species have been completed and the lists are actively maintained with published synonyms, and (2) the Royal Botanic Gardens, Kew in partnership with Natural England maintain the Checklist of British and Irish Basidiomycota (CBIB). Together, these lists represent approximately 45 per cent of UK fungi.
- The British Phycological Society have produced a draft UK checklist for seaweeds and will soon publish it. It is already being used by the National Biodiversity Network (NBN).
- There is no comprehensive listing of cultivated plants in the UK. The annual *RHS Plant Finder* lists those taxa currently in trade and, while it lists over 70,000 taxa, it is widely acknowledged to represent probably only c.75 per cent of the total in trade, and a still smaller proportion of the total number in cultivation. RHS has data on 311,000 names of cultivated plants in the UK, of which 52 per cent have been checked and rated as 'accepted' names. This work has been used to support the work of Plant Heritage's Threatened Plant project.
- The Mycologia Scotica database for all macro basidiomycete fungi known in Scotland, and their distribution by watershed, has been compiled by Prof. Roy Watling (<https://sites.google.com/site/mycologiascotica/mycologia-scotica-1>). A similar web publication is in progress to include all ascomycete fungi.
- In addition, Plant Link has set up a Task and Finish Group to identify the gaps to

complete Target 1. The group has used the NBN Species Dictionary to identify the major taxonomic groups which either have complete coverage online or are still incomplete.

Target 2: An assessment of the conservation status of all known plant species, as far as possible, to guide conservation action

Narrative

The Sampled Red List Index for Plants project (SRLI for Plants), led by the Royal Botanic Gardens, Kew and the Natural History Museum, UK, was established to meet Target 2 and Aichi Biodiversity Target 12. The Red List Index method is that of the internationally recognized IUCN Red List categories and criteria. A sampled approach is taken for plants, compared to the Red List Indices for birds, mammals and amphibians, because there are far greater numbers of known plants species (c.400,000). Efforts to publish plant assessments on the IUCN Red List of Threatened Species have been ongoing since the release of these initial results in 2010. As of November 2013, approximately 2,800 assessments of SRLI species (monocots, legumes and gymnosperms) will be available on the IUCN Red List, and approximately 900 ferns have been submitted for publication.

Since the last CBD report, Red Lists have been completed at the Great Britain level for lichens (Woods and Coppins 2012) and bryophytes (Hodgetts 2011). The first official fungal Red List for Great Britain covering the 68 taxa of the family *Boletaceae* has been published (Ainsworth *et al* 2013). This was achieved by collaboration between Royal Botanic Gardens, Kew, Natural England, British Mycological Society and the Association of British Fungi Groups (available at: <http://jncc.defra.gov.uk/page-6497>). It is hoped to produce further assessments for other fungal families in a systematic fashion.

The British Phycological Society and Natural History Museum have developed a draft UK conservation assessment for red, green and brown seaweeds.

An Irish Red List has also been produced for bryophytes (Hodgetts and Holyoak 2012), and work has begun on an Irish vascular plant Red List. In Northern Ireland there is also a Priority Species List which is reviewed annually as part of the Wildlife and Natural Environment Act (Northern Ireland) 2011. This list includes plants and fungi.

In Wales, following on from the Red List for vascular plants, volumes for bryophytes (Bosanquet and Dines 2011) and lichens (Woods 2010) have also been produced for the Welsh flora by Plantlife, British Bryological Society, British Lichen Society and Countryside Council for Wales (now Natural Resources Wales).

Lists of plant, fungi and algal species of principal importance for conservation importance in Scotland, and of priority for conservation in England (Section 41) and Wales (Section 42) are being maintained and kept under review (Nature Conservation (Scotland) Act 2004, and Natural Environment and Rural Communities Act (2006)). These lists are being used to focus biodiversity action, survey and research, as well as having material consideration in planning issues.

In England the Section 41 bryophyte species are covered in a book entitled '*England's Rare Mosses and Liverworts: Their History, Ecology, and Conservation*' by Ron Porley (2013). It covers a host of Section 41 bryophytes, as well as referring to the GSPC, Important Plant Areas and the UK Biodiversity Action Plan.

Target 3: Information, research and associated outputs, and methods necessary to implement the Strategy developed and shared

Narrative

There are many information sources that are relevant to the Strategy being produced by a wide range of organisations. Selected examples across a broad range of collations and sharing mechanisms for plant and fungal conservation include:

- National Biodiversity Network Gateway for plant and fungal records.
- The PlantSynopsis database for plant conservation methods.
- A searchable genetic information database (Genetic flora of the British Isles: <http://elmer.rbge.org.uk/geneticflora/gflora.php>) which includes details of more than 2,600 publications. These provide information on more than 900 native vascular plant species and archaeophytes, and smaller numbers of bryophytes, algae and lichens.
- In addition the ‘Conservation Genetics Knowledge Exchange’ project ran for four years (until 2013). This is a network of UK Institutions and Conservation Agencies funded by the Natural Environmental Research Council (NERC) to enhance the use of genetic information in conservation programmes through knowledge exchange between researchers and practitioners. A workshop in October 2013 presented the findings of this project to an audience of policy makers and practitioners.
- All Welsh native flowering plants and conifers have been barcoded, and this project is now being extended to include all native flowering plants and conifers of the UK (<http://www.gardenofwales.org.uk/science/barcode-wales/>). Other barcoding projects exist for additional taxonomic groups.
- Royal Botanic Gardens, Kew Seed Information Database is a compilation of seed biological trait data from their own collections and from other published and unpublished sources. Data is periodically updated and available online at <http://data.kew.org/sid/>. Certain classes of data on UK species are shared with Ecological Flora of the British Isles (ECOFLOTA, <http://www.ecoflora.co.uk/>); and is also available to researchers under the TRY-IGP-QUEST-DIVERSITAS Initiative (<http://www.try-db.org/TryWeb/Home.php>).
- Plant Link UK, and the country Plant Links provide an excellent means for sharing and disseminating information and methods.
- The Natural History Museum is working on several projects to mobilise and improve digital access to national and regional museum herbaria for UK vascular plants and marine algae; this work is being done in partnership with various organisations including the Museums Association, Botanical Society of Britain and Ireland, and Herbaria@Home.

Target 4: At least 15 per cent of each ecological region or vegetation type secured through effective management and/or restoration

Relevant UK Indicators

Assessment of change in status of UK habitats of European importance			
	Long term	Short term	Latest year
Percentage of UK habitats of European importance in favourable or improving conservation status	⊙	⊗ 2007–2013	Decreased (2013)

Narrative

Work on this Target will mostly be undertaken as a part of work on Aichi Biodiversity Target 15. In addition to the broad-scale work that will be undertaken as a part of Aichi Biodiversity Target 15, there are some specific elements that are being developed that ensure that plant conservation is integral to ecosystem maintenance and restoration, for instance Royal Botanic Gardens, Kew through the UK Native Seed hub is providing identified, quality assessed, seed of priority native plants to enable grassland enhancement through rural development schemes.

Target 5: At least 75 per cent of the most important areas for plant diversity of each ecological region protected with effective management in place for conserving plants and their genetic diversity

Relevant UK Indicators

Assessment of change in area and condition of UK protected areas			
	Long term	Short term	Latest year
Total extent of protected areas on land	 1950–2013	 2008–2013	No change (2013)
Total extent of protected areas at sea	 1950–2013	 2008–2013	No change (2013)
Condition of A/SSSIs		 2008–2012/13	No change (2012-13)

Note: the UK indicator includes all protected areas, not just those of importance for plants.

Commentary

Whilst the indicator results are broadly positive, it is known that many protected areas contain threatened plants and fungi which are not among the notified features for the site. In these cases, the effectiveness of the management for the maintenance of the plant or fungal interest is unknown. However, there are various projects ongoing in England and Wales that will either fully rectify this situation, or will allow information to be extracted and analysed. In Northern Ireland, ASSIs are still being actively designated, and eligible features identified.

Narrative

Using Important Plant Area (IPA) methods for site identification, Plantlife has identified 87 IPAs in England which cover about 850,000ha; this equates to 7 per cent of the total area of England. Northern Ireland has four IPAs which cover about 26,000ha, equating to 2 per cent of the total area. The 47 IPAs in Scotland cover approximately 700,000ha or 9 per cent of the total area of Scotland. The 23 IPAs in Wales cover about 85,000ha or 4 per cent of the total area of Wales. In total, there are 161 IPAs covering approximately 7 per cent of the UK. Nine additional Arable IPAs have recently been identified through Plantlife's arable farm survey and monitoring projects, and will be added to the mapped IPA network. Mapping work is due to be carried out in 2014–2015.

Protection of IPAs within SSSIs and ASSIs is summarised in Table 1. However, whether the protected sites are managed and monitored for plant features requires further investigation to determine if there is effective management for these features.

Table 1 A/SSSI protection of IPAs as at December 2012.

	UK	% Total IPAs	England	Northern Ireland	Scotland	Wales
Total no. of IPAs in analysis*	161	-	87	4	45	23
No. that overlap with A/SSSIs	155	96%	83	4	45	23
A/SSSIs overlap level (area):						
Complete (100%)	58	36%	24	4	15	15
Major (70–99%)	49	30%	28	0	16	5
Mid (40–69%)	31	19%	21	0	8	2
Minor (1–39%)	17	11%	10	0	6	1
None (0%)	6	4%	4	0	2	0

* A number of IPAs were identified after the analysis for this table was carried out.

In arable areas, agri-environment schemes will have the key role in delivering conservation of arable specialist plants. Farmers have been advised on the best agri-environment options to select to conserve communities of arable plants and rare arable species through the Important Arable Plant Area project, supported by Natural England and other funders, led by Plantlife and partners.

Some internationally important plant habitats are being protected through wider countryside policy rather than through designated area protection. For example, Scotland and Wales have developed policies and guidelines to identify and protect ravines that are rich in oceanic bryophytes from pressures such as hydro-electric scheme development. In Scotland c.80 per cent of important watercourses are currently outwith SSSI boundaries (http://www.snh.org.uk/pdfs/publications/commissioned_reports/449b.pdf).

Target 6: At least 75 per cent of production lands in each sector managed sustainably, consistent with the conservation of plant diversity

Relevant UK Indicators

Assessment of change in area of land covered by agri-environment schemes			
	Long term	Short term	Latest year
Higher-level/targeted schemes	✓ 1992–2012	✓ 2007–2012	Increased (2012)
Entry-level type, whole-farm schemes	⊖	✓ 2007–2012	Increased (2012)

Assessment of change in area of woodland certified as sustainably managed			
	Long term	Short term	Latest year
Percentage of woodland certified	✓ 2001–2013	✓ 2008–2013	No change (2013)

Commentary

Whilst the indicators show broadly positive progress, further analysis is required to understand how much of this is consistent with the conservation of plant diversity. An initial attempt at such an analysis is available for Wales.

Table 2 assesses the area of land in various Welsh agri-environment schemes. For Tir

Gofal and Glastir, only prescriptions and management options that contribute directly to the conservation of plant diversity are included. Note that these figures will change considerably over the next few years as the new Glastir scheme replaces Tir Gofal in 2013/14 and the ESA and Habitat schemes draw to a close. Tir Cynnal is not included here as it does not implement management directly for plant diversity. The total area of land under Tir Gofal was 378,440ha in 2012.

Table 2 Analysis of Welsh agri-environment scheme options by area.

Agri-environment Scheme	Area	
	ha	% of total area
Total area of agricultural land and woodland¹	1,979,500	
Environmentally Sensitive Area ²	7,420	0.4
Habitat Scheme ²	624	0.0
Tir Gofal – options benefiting plant diversity ³	133,802	6.8
Glastir Entry level – options benefiting plant diversity ⁴	49,337	2.5
Glastir Advanced level – options benefiting plant diversity ⁴	2,063	0.1
Organic Farming or Maintenance ²	130,483	6.6
Better Woodlands for Wales ⁵	29,000	1.5
Total managed sustainably for plant diversity	352,729	17.8

¹ Data from Farming Facts and Figures, Wales 2013 (<http://wales.gov.uk/docs/statistics/2013/130625-farming-facts-figures-2013-en.pdf>); and Woodland for Wales Indicators 2012-2013 (<http://wales.gov.uk/docs/statistics/2013/131018-woodlands-wales-indicators-2012-13-en.pdf>)

² Data from State of Environment, 2012 (<http://wales.gov.uk/docs/statistics/2012/120725stateofenvironment12en.pdf>)

³ Data from Morris, A.J., Smart, J., Lamacraft, D., Bialynicki-Birula, N., Luxton, K.-J., Haysom, K., Rasey, A., Williams, C., Hobson, R., Dines, T., Parry, R.J., Wilberforce, E.M. & Chapman, C. 2008. *Potential for biodiversity delivery by Welsh agri-environment schemes*. Sandy, Bedfordshire: RSPB.

⁴ Assessment by Plantlife Cymru of area of Glastir options 2012-13 benefiting plant and fungi diversity.

⁵ Data from Woodland for Wales Indicators 2012-2013 (<http://wales.gov.uk/docs/statistics/2013/131018-woodlands-wales-indicators-2012-13-en.pdf>)

The extent to which similar patterns will be shown in the rest of the UK is unknown.

Whilst there is some understanding of conservation management within agricultural and woodland production, much less is known regarding aquaculture. This is potentially of importance for algal conservation, and more work is required to understand the interaction between management for aquaculture and the requirements of algal communities.

Target 7: At least 75 per cent of known threatened plant species conserved *in situ*

Relevant UK Indicators

Assessment of change in status of threatened species			
	Long term	Short term	Latest year
Priority species	 1970–2010	 2005–2010	No change (2010)
Percentage of UK species of European importance in favourable or improving conservation status		 2007–2013	Increased (2013)

Note: the UK indicator includes all relevant species groups, not just plants.

Commentary

Two UK Indicators provide some information regarding trends in threatened species. The first indicator, which shows negative trends for priority species in both the long- and short-term, contains no information on plant species yet, but provides context in terms of conservation status of other species. The second UK Indicator is based on the much shorter list of UK species of European importance. It is possible to extract the plant and lichenised fungi subset of this indicator as shown in Figure 1.

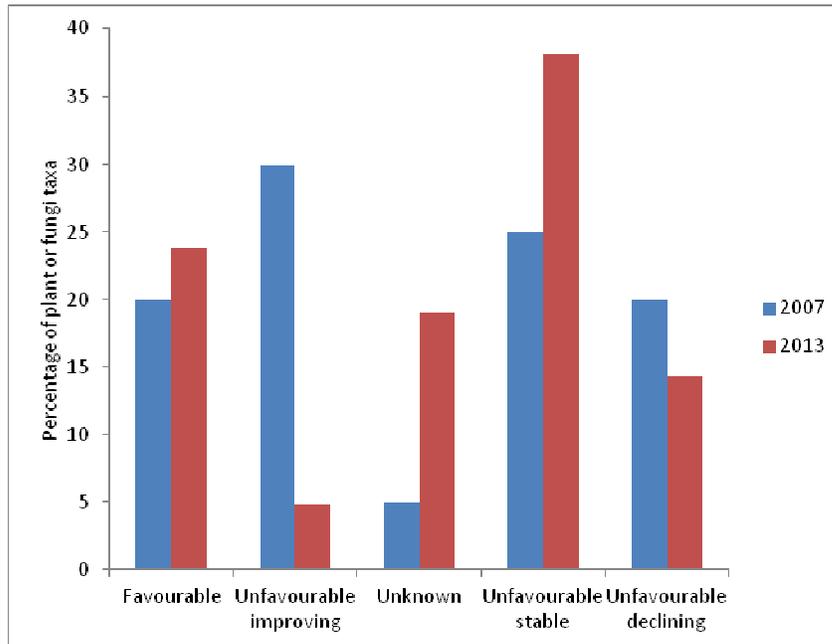


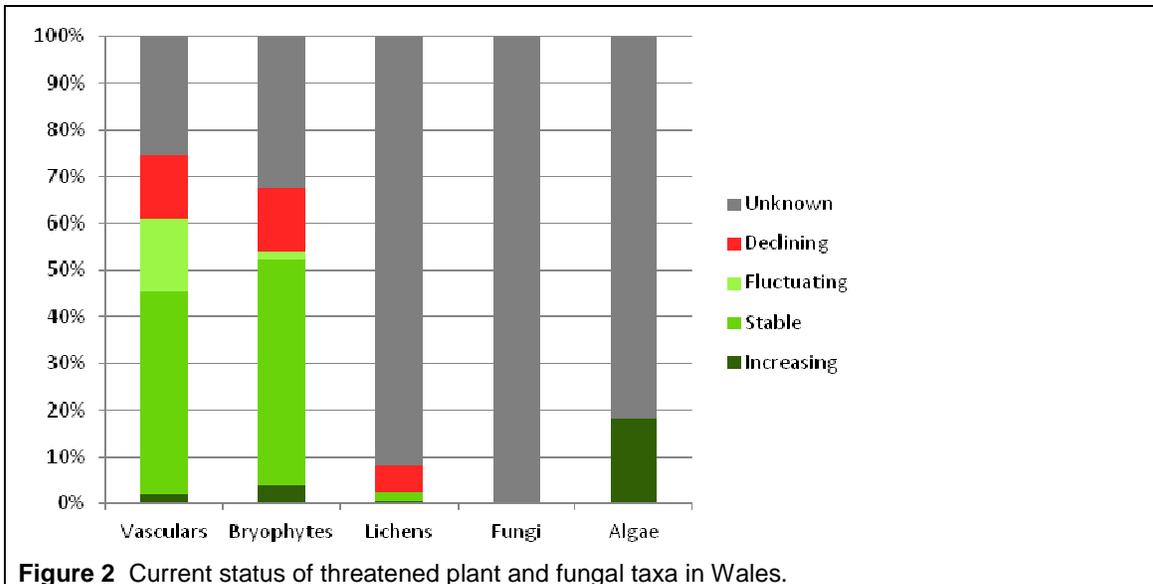
Figure 1 Percentage of UK plant or fungal taxa of European importance in improving or declining conservation status in 2007 and 2013.

This suggests a more negative picture for plants and fungi than for all taxa, with 50 per cent favourable or improving in 2007, down to only 29 per cent in 2013. This contrasts with the overall UK Indicator, which had a short-term positive trend with 44 per cent favourable or improving in 2007, and 48 per cent in 2013. However, this analysis is based on only 21 plant or fungi taxa (in 2013), so is a very small proportion of the threatened species, and should not be assumed to represent the status of other plants and fungi in UK.

Narrative

Of the 808 threatened vascular plants, bryophytes, stoneworts and lichens listed on the JNCC Designations Spreadsheet (2013), 242 of them (30 per cent) do not appear in any legislative lists and are unlikely to be receiving much focussed conservation management. Of those 242, 144 (18 per cent of threatened) are either hybrids or apomictic microspecies of vascular plants.

In order to assess how effective conservation work has been, it is useful to examine the current population status of all threatened (Red List) and priority species. A pilot assessment has been completed in Wales (Figure 2). Using best available expert opinion, this has been done for 867 taxa, assigning them to categories *increasing*, *stable*, *fluctuating*, *declining* or *unknown*. Taking the *increasing*, *stable* and *fluctuating* categories as being measures of effective conservation, 32 per cent of threatened and Section 42 taxa can be considered as being effectively conserved.



Target 8: At least 75 per cent of threatened plant species in *ex situ* collections, preferably in the country of origin, and at least 20 per cent available for recovery and restoration programmes

Narrative

The UK has achieved this target for vascular plants. Royal Botanic Gardens, Kew's [Millennium Seed Bank Partnership](#) has conserved seed collections from 77 per cent of the UK native species appearing on the list of species with conservation designations. Acknowledgement should be made to the many volunteers, including specialists from NGOs and agencies across the UK who have assisted in making seed collections (both for species and microspecies) for this programme.

Please note the exclusions made when calculating this percentage:

- Intraspecific taxa where a collection is held for the species
- Extinct species (9)
- Desiccation sensitive/recalcitrant species (2)
- Species that have never been seen to fruit in UK (7)
- Hybrids (35)

Seed may be made available for recovery and restoration programmes where there are sufficient numbers in the collections (at least 40 per cent of UK collections to date).

Supplementary data in the UK Indicator ([C9b](#)) on Plant Genetic Resources (see the background section) provides detail on the cumulative number of species of world seed-bearing flora collected and conserved by the Millennium Seed Bank Partnership.

In Scotland, the Royal Botanic Garden Edinburgh organised a collecting programme with national agencies (Scottish Natural Heritage, the Botanical Society of Britain and Ireland and others), targeting 170 threatened listed species. There are now 143 species in cultivation at the Royal Botanic Gardens Edinburgh, following intensive efforts since 2005. Nine of the species are in recovery programmes.

In Wales, the National Botanic Garden of Wales has a collection of 81 native Welsh species, with a particular focus on microspecies in the genera *Sorbus* and *Hieracium*.

In 2000, the UK Conservation Agencies in partnership with Royal Botanic Gardens, Kew, launched the *ex situ* project for the conservation of threatened bryophytes, the first such project of its kind in the world. At the close of the 2nd phase, 28 priority species were incorporated into cryopreservation. During the project, novel methods were developed for: initiation and propagation of living material in aseptic culture; for 'weaning' *ex situ* material onto natural substrates; establishing collecting protocols and the monitoring of survival post-cryopreservation. Material was deposited in the DNA bank in the Royal Botanic Gardens, Kew and a re-introduction trial was also initiated using *ex situ* material.

Since then, a further partnership between Natural England and Royal Botanic Gardens, Kew has been established. Further species are being added to the collection. Future priorities for work include increasing genetic sampling; developing techniques for axenic culture/cryopreservation of liverworts (most species worked on to date are mosses); with research looking at liverwort/fungal symbioses and desiccation biology.

No appropriate *ex situ* culture methods exist for lichens, and this is not currently considered a priority for further work.

The Genetic Resource Collection at CABI (www.cabi.org) incorporates the UK National Collection of Fungus Cultures, including a large number of British collections. However, little is known about their rarity and conservation status.

Target 9: 70 per cent of the genetic diversity of crops including their wild relatives and other socio-economically valuable plant species conserved, while respecting, preserving and maintaining associated indigenous and local knowledge

Relevant UK Indicators

Assessment of change in status of <i>ex situ</i> conservation of cultivated plants and their wild relatives			
	Long term	Short term	Latest year
Cumulative Enrichment Index	 1960–2012	 2007–2012	No change (2012)

Narrative

An inventory exists of Crop Wild Relative (CWR) species in the UK; this has now undergone a gap analysis using data from the National Biodiversity Network to help identify the required *in situ* and *ex situ* conservation action. Initial analysis for the UK as a whole for 250 priority CWR identified 17 sites that contained two thirds of CWR taxa. This analysis identified the Lizard National Nature Reserve in Cornwall as a CWR hotspot, and further research by the University of Birmingham and Natural England is investigating its establishment as the first UK genetic reserve for conserving the genetic diversity of UK CWR taxa. Similar research is now underway between the University of Birmingham and the Scottish and Welsh authorities.

The UK Plant Genetic Resources Group have already prepared an initial inventory of UK landraces (cereals and forages) and identified that most landrace diversity is found in vegetables and fruits.

Work done by Plant Heritage has found that of the 12,917 cultivars identified as threatened in the genera assessed to date as part of their Threatened Plants Project, 41 per cent (9,539) are in National Plant Collections, and 7 per cent (2,583) are in active conservation elsewhere.

Target 10: Effective management plans in place to prevent new biological invasions and to manage important areas for plant diversity that are invaded

Relevant UK Indicators

Assessment of change in extent of invasive species			
	Long term	Short term	Latest year
Freshwater invasive species	 1960–2008	 2000–2008	N/A
Marine invasive species	 1960–2008	 2000–2008	N/A
Terrestrial invasive species	 1960–2008	 2000–2008	N/A

Note: the UK indicator includes all areas, not just IPAs.

Narrative

The GB Invasive Non-Native Species Framework Strategy was published in 2008 and was reviewed in 2013. The Strategy puts an onus on preventative measures, and horizon scanning has been carried out for plants and animals. 599 non-native freshwater and terrestrial plants were assessed by Plantlife and the Freshwater Biological Association, as well as assessments for animals by other organisations. For the plants, 92 were ranked as critical (55 as urgent) and thus should be prioritised for a detailed risk assessment; however invasive animal species can also threaten plant diversity. The development of Invasive Species Actions Plans also forms part of the Strategy; one has been completed for a plant – Water Primrose (*Ludwigia grandiflora*). Four plant species Actions Plans are currently underway. Royal Botanic Gardens, Kew has completed one rapid risk assessment of a potentially invasive non-native fungus.

Plantlife estimates that approximately 30 per cent of Important Plant Areas have been found to have invasive species in them and invasive non native species removal is now taking place in a number of those sites. For example, Plantlife and the National Trust teamed up to remove Hottentot Fig from the Lizard Important Plant Area (IPA) and *Cotoneaster* from the Gower. Plantlife has been removing *Cotoneaster* from the Portland IPA and the Torbay Limestones IPA as well as Japanese knotweed, sycamore and buddleia at Ranscombe Farm IPA.

Additionally:

- The Wales Biodiversity Partnership Invasive Non-Native Species group have been developing management plans for key species and the inclusion of actions for SSSIs in the NRW Sites Actions database.
- The British Phycological Society has produced a list of seaweeds considered to be invasive or potentially invasive in the UK. Surveillance for these species can be focused in Important Algae Area.
- In 2013 trial projects for England/Wales and Scotland have been initiated to detect non-native marine species in both off-shore and in-shore waters. The early warning systems aim to detect species which might be potentially invasive.
- Five aquatic species will be banned from sale in England & Wales in April 2014.
- The Royal Horticultural Society (RHS) excludes ten species of invasive plants from the RHS *Plant Finder*.
- In its review this year of the Award of Garden Merit, the RHS's top recommendation of the best plants for gardens, the RHS undertook to rescind the AGMs that had been awarded to those plants which are listed on Schedule 9 of the Wildlife and Countryside Act as amended in 2010. This amounts to eight species.

Target 11: No species of wild flora endangered by international trade**Narrative**

Since the previous reporting period, the UK continues to monitor progress towards Target 11. The target is linked to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

Highlights in this reporting period include UK/EU facilitation and support of listings of a wide range of tree species at the 16th meeting of the Conference of the Parties to CITES. The listed tree species include all rosewood and ebony species from Madagascar. The Royal Botanic Gardens, Kew acts as the UK CITES Scientific Authority for plants. In this role, during the reporting period Jan 1011 – Dec 2013, Kew has provided training on CITES implementation for 617 participants (UK and international), including 297 UK enforcement officers. In addition, Kew and international partners developed CITES capacity building tools, including two editions of CITES User Guides on ramin and cacti.

The UK was amongst leaders at the G8 Summit (June 2013) voicing the need to tackle illegal wildlife trade. It continues to be a key player in driving forward initiatives to tackle this issue through the Clarence House Conference, London (May 2013) hosted by HRH The Prince of Wales and the UK Government and attended by 22 governments, multilateral organisations and non-government organisations. The UK Government has also established a UK cross government taskforce and Action Plan leading to The London Conference on Illegal Wildlife Trade to be attended by key governments (<https://www.gov.uk/government/policy-advisory-groups/tackling-illegal-wildlife-trafficking-inter-ministerial-working-group>).

Additional work supporting this target occurs that is not linked to CITES includes:

- An international market for the tree lungwort, *Lobaria pulmonaria*, was identified that would have resulted in large volumes of the lichen being collected for the homeopathic medicine industry. Harvest of the quantities required was considered unsustainable so it was recommended that the species be added to Schedule 8 of the Wildlife and Countryside Act (1981). This has been implemented in England and Wales and is soon likely to be implemented in Scotland.
- The Tree Health and Plant Biosecurity Expert Taskforce noted in their report that the trends in trade are increasing the risk of introduction of non-native pests and pathogens that would threaten species of UK wild flora. For instance, 1,400 interceptions per annum of pests and pathogens are being reported by UK Inspectors.

Target 12: All wild harvested plant-based products sourced sustainably**Narrative**

In 2003, the Scottish Wild Mushroom Forum, a group of representatives from conservation organisations, landowners, mushroom buyers and pickers, created the Scottish Wild Mushroom Code, and these were updated in 2010. This provides guidance to ensure that harvesting is sustainable. In 2006, a similar code was developed for harvesting mosses in Scotland. Whilst this guidance has been developed within Scotland, the sustainability principles are more widely applicable across the UK.

The Scottish Wild Mushroom Code is promoted on the Scottish Fungi website (<https://sites.google.com/site/scottishfungi/home>). Analysing visitor numbers to the website shows that there are annual peaks during the main fruiting and collecting season, with the webpage on identifying fungi to eat as the third most visited page on the site.

Target 13: Indigenous and local knowledge innovations and practices associated with plant resources maintained or increased, as appropriate, to support customary use, sustainable livelihoods, local food security and health care

Narrative

Several companies have begun promoting traditional knowledge and skills, such as foraging, bushcraft, natural navigation and survival skills. Interest has increased steadily year on year and shows no sign of abating. Original Outdoors based in mid Wales, for example, work with four skilled bushcraft instructors.

There are many forums and podcasts and You Tube videos available, which help to promote interest. Many books are being written on bushcraft skills.

Target 14: The importance of plant diversity and the need for its conservation incorporated into communication, education and public awareness programmes

Relevant UK Indicators

Assessment of change in volunteer time spent in conservation			
	Long term	Short term	Latest year
Conservation volunteering	 2000–2012	 2007–2012	Decreased (2012)

Commentary

Using data collected for the overall UK Indicator, but only considering organisations entirely focussed on plant conservation activities, volunteer time can be seen to be approximately stable recently (Figure 3).

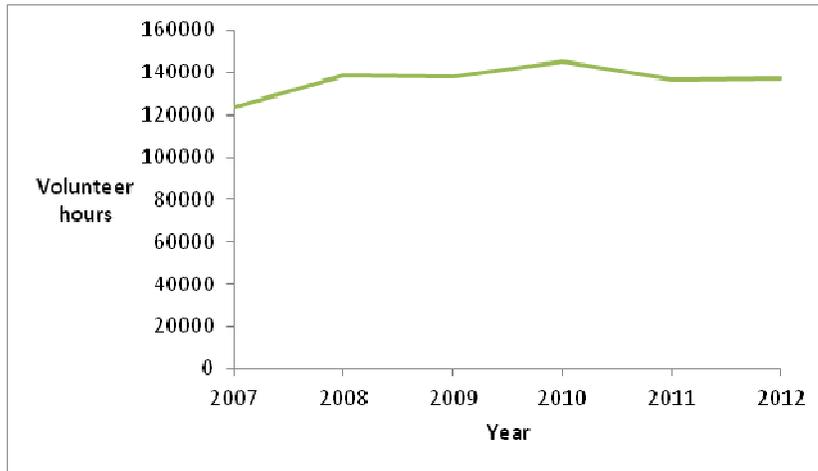


Figure 3 Total volunteer hours recorded by the Botanical Society for Britain and Ireland and Plantlife from 2007 to 2012.

A similar approximately stable picture emerges from an analysis of visitor numbers to Royal Botanic Gardens, Kew and Royal Botanic Garden Edinburgh (Figure 4). This is a small proportion of the total number of visitors to botanic gardens and plant collections in the UK: Botanic Gardens Conservation International has records of over 9 million visitors per annum to UK gardens.

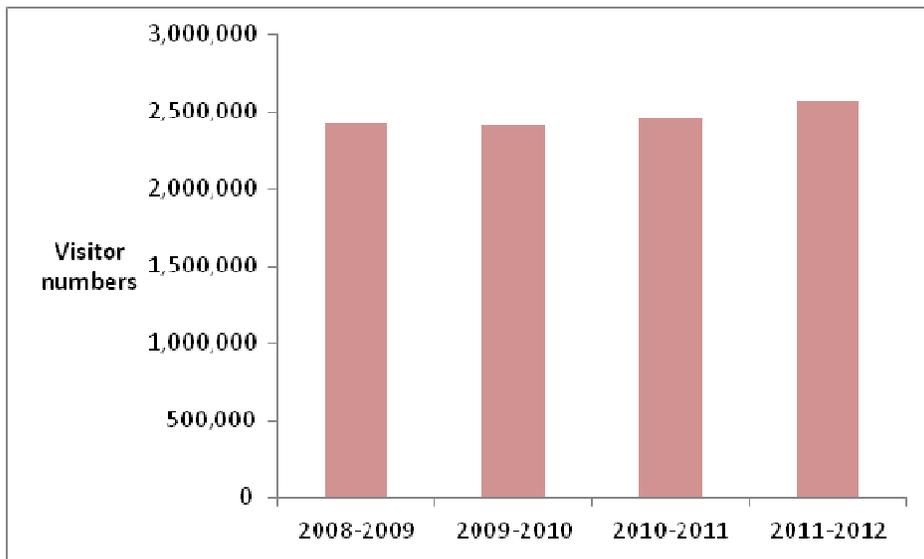


Figure 4 Visitor numbers for Royal Botanic Gardens, Kew and Royal Botanic Garden Edinburgh.

Narrative

The indicators only show a small part of the evidence on awareness of plant diversity and conservation. A very wide range of programmes exist that seek to increase engagement with plants and plant conservation, that are focussed on a number of different audience groups. For instance:

- Channel 4 popular Wild Things series and associated book.
- Plantlife’s Wild About Plants was a national project operating across England, designed to provide opportunities for people to explore the nature on their doorstep and learn more about their local wild plants and the importance of those plants. Since 2009 over 100,000 children and people have benefited from the work of Plantlife’s Wild About Plants programme. Bee Scene, a survey designed to help children develop a greater understanding of the importance to plants of pollinators, attracted over 10,000 participants. Two newsletters were developed to help people learn about plants: Pioneer which has over 1,600 subscribers; and a schools newsletter which has over 800 subscribers and encourages the study of ecology, plant physiology and botany through investigations in the field and classroom. The uses of plants were explored through workshops for older people and plant ID walks were run. In total 30,000 people directly participated in activities with a further 60,000 known beneficiaries – those who may have benefited from the project through resource downloads or the impact of teacher training.
- Royal Botanic Gardens, Kew – through the Grow Wild campaign it is planned to engage over one million young people in a planting activity that will stimulate interest in native plants.
- Flora locale: delivery of training programme to a wide range of people – topics include the management and restoration of urban greenspace, wildlife gardening as well as management and restoration of a wide range of habitats at the larger scale.
- The Royal Horticultural Society (RHS) has a long-running experiment in its garden at Wisley to examine the impact of garden plants on biodiversity, which it interprets for the visitors, and engages a wider audience through its ‘Plants for bugs’ blog (with over 24,000 visits this year alone), and on the RHS website.

- RHS and Plantlife Gardening, landscaping and keeping a pond with AlterNative booklets have been raising awareness of the use of non-invasive species.
- Natural History Museum 'Big Seaweed Search'.
- British Mycological Society, National Botanic Gardens Wales, Association of British Fungus Groups, Royal Botanic Gardens, Kew run and support UK Fungus Day – to raise the profile of fungi and fungal research through events, lectures, science displays and outreach activities throughout the United Kingdom and Ireland.

Target 15: The number of trained people working with appropriate facilities sufficient according to national needs, to achieve the targets of this Strategy

Narrative
 There are a number of positive examples of training highlighted for non-public sector funding for plants and fungi include:

- A Lichen Apprenticeship Scheme has been established Wales, following on from the success of the process in Scotland.
- TCV Scotland's Natural Talent Apprentice scheme provides up to 18 month apprenticeships in key conservation fields, where future expertise is required. Since its launch in 2006, the scheme has trained 10 apprentices in plant and fungi related areas.
- The British Phycological Society run seaweed identification courses. These can provide scope for beginners as well as training for recorders.
- Royal Society for the Protection of Birds have a trainee scheme funded by Heritage Lottery Fund which so far had included one mycologist, three bryologists and two lichenologists.

Target 16: Institutions, networks and partnerships for plant conservation established or strengthened at national, regional and international levels to achieve the targets of this Strategy

Narrative
 The UK has excellent networking and partnerships for plant conservation. A few of the partnerships are highlighted below, but there are many others.

UK organisations co-ordinate and participate in many global networks established to deliver GSPC targets – for example the Millennium Seed Bank Partnership is co-ordinated by the Royal Botanic Gardens, Kew, to deliver Target 8 in particular. Notably, the Secretariat for Botanic Gardens Conservation International is based in the UK – this also acts as the Secretariat for the Global Partnership for Plant Conservation (GPPC). The GPPC is a global network established to implement the GSPC. At least five UK institutions are GPPC partners to date.

Plant Link (PLINK) is a forum for organisations to share information and work together to advance the conservation of wild plants. The network of PLINK organisations aims to take forward action to deliver the Global Strategy for Plant Conservation. Working towards the GSPC requires action at both the UK and country level therefore, there is a Plant Link UK (PLINK UK) group as well as country specific groups called Plant Link Scotland (PLINKS), Plant Link Cymru (PLINC) and Plant Link England (PLINK England). PLINC have also set up a PLINC Vascular Plant group and a PLINC Lower plant group which aim to focus more specifically on the needs of rare and threatened species as well as covering relevant actions from the Wales Biodiversity Strategy.

PlantNetwork is the national network of botanic gardens, arboreta and other documented plant collections. PlantNetwork promotes botanical collections in Britain and Ireland as a national resource for research, conservation and education and facilitates networking and training among holders of plant collections through a programme of conferences and workshops and a regular newsletter and a well referenced website. It is a registered charity run by a board of 16 trustees, supported by an administrator.

The Institute of Horticulture is the authoritative organisation representing those professionally engaged in Horticulture in the UK & Ireland. Its membership comprises, and represents, those that are involved in amenity horticulture, parks, landscaping, botanic/heritage gardens, and the full range of horticulture within leisure industries as well as those producing, managing, growing and marketing all edible and decorative horticultural crops, allied research, education and consultancy. It also includes those working in associated supply industries and students taking their first steps into horticulture.

Taxon Groups exist in England for bryophytes, lichens and vascular plants as part of the England Biodiversity Strategy. Similar groups exist in Scotland, for example the Scottish Fungus Conservation Forum coordinates research, communication and conservation action for fungi.

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Fifth National Report to the United Nations Convention on Biological Diversity: United Kingdom

Appendix 4: UK Overseas Territories and Crown Dependencies

April 2014

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Fifth National Report to the United Nations Convention on Biological Diversity: United Kingdom

Appendix 4: UK Overseas Territories and Crown Dependencies

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St Helena, Ascension and Tristan da Cunha:

St Helena

Ascension

Tristan da Cunha

Crown Dependencies

Isle of Man

Jersey

Introduction

This report covers only those Overseas Territories and Crown Dependencies to which the CBD has been extended. They are listed above.

This report does not cover the territories to which CBD is not extended, which include the following:

Overseas Territories

Anguilla

Bermuda

British Antarctic Territory

British Indian Ocean Territory

Falkland Islands

Montserrat

Pitcairn

South Georgia and South Sandwich Islands

Sovereign Base Area Cyprus

Turks and Caicos Islands

Crown Dependencies

Guernsey

The unique environmental wealth of the UK Overseas Territories brings responsibilities for its sustainable management. Territory Governments, civil society groups, the private sector and the UK Government each has a role to play, as outlined in the 2012 White Paper *The Overseas Territories: Security, Success and Sustainability* (Foreign and Commonwealth Office 2012).

The democratically elected Governments of the inhabited Territories are constitutionally responsible for the protection and conservation of their natural environments. Many of the people of the Territories have a strong commitment to protecting their natural environments; for many their livelihoods depend on preserving the unique flora and fauna found in the Territories. The UK Government is committed work with Territory Governments and other interested parties, such as non-Governmental Organisations and the scientific community, to ensure that the rich environmental assets of the OTs are fully understood and protected for the future.

The following information is based on an account supplied to us by the British Virgin Islands Government. Additional information was obtained from the following sources:

- Pelembe, T. & Cooper, G. (eds). 2011. *UK Overseas Territories and Crown Dependencies: 2011 Biodiversity Snapshot*. Peterborough, UK: Joint Nature Conservation Committee.
- Cottam, M. (ed.). 2013. *The UK Overseas Territories Biodiversity Strategy – Review of Progress*. UKOTA, Joint Nature Conservation Committee.
- Cottam, M. (ed.). 2013. *Recent Conservation Achievements of UK Overseas Territories and Crown Dependencies and their Contributions to National Aichi Biodiversity Targets (2013)*. Peterborough, UK: Joint Nature Conservation Committee.

Part I: An update on biodiversity status, trends, and threats and implications for human well-being

Q1: Why is biodiversity important for your country?

The vegetation of the British Virgin Islands (BVI) is predominantly made up of cacti, thickets and dry forests. There are also rain forests on the upper slopes of the larger islands of Tortola and Virgin Gorda (Petit and Prudent 2008). Also present within the BVI are woodlands and shrublands. The BVI has 380km² of coral reefs that range in size from small fragments of a few square metres to The Anegada reef which is made up of close to 77km² of coral (Smith *et al* 2000). Anegada is also the home of the Anegada Horseshoe reef which is the third largest barrier reef in the Caribbean. The archipelago also has 580ha of mangroves (Sanders 2006). Mangroves in the BVI provide an important ecosystem service acting as hurricane shelters for the charter and fishing boat industry. As tourism is one of the two main pillars of the economy, coral reefs in the BVI provide opportunities for several recreational activities which include diving, snorkelling and commercial and recreational fishing. Reef and pelagic fishes provide an important local source of protein for the population of the BVI

The British Virgin Islands supports approximately 45 plant species endemic to the Puerto Rican bank (Sanders 2006). This includes single-island endemics including the threatened *Acacia anegadensis* and *Metastelma anegadense* (in Anegada), and *Calypttranthes kiaerskovii* (in Virgin Gorda). Other Red Listed species include the *Cordia rupicola* and *Leptocereus quadricostatus* (in Anegada). One quarter of the 24 reptiles and amphibians are endemic. Among them are the Virgin Islands Tree Boa *Epicrates granti* which is endemic to Virgin Islands, and the Anegada rock iguana *Cyclura pinguis* is only found on the Island of Anegada.

Q2: What major changes have taken place in the status and trends of biodiversity in your country?

We expect significant loss of key habitats to occur in BVI by 2020; however we also expect significant improvement and safeguarding of eco-system services. Overall, the gap between conservation action and the loss of species and habitats in BVI is widening.

The 2006 Physical Planning Act requires that large-scale developments conduct Environmental Impact Assessments (EIAs) and Environmental Management Plans. EIAs also have to include provisions for climate change impacts. In the past few years there has been an increasing trend in large coastal developments (e.g. Mega Yacht Marina and Hotel).

Land-based activities have led to an increase in sedimentation, sewage and other pollutants, that have negatively affected the coral reef ecosystem. Increased boating activity has led to greater impacts on coral reefs by anchor damage and groundings. The introduction of the invasive lionfish into the waters of the BVI has led to a decline and transition of fish populations which has ultimately affected the coral reefs.

Q3: What are the main threats to biodiversity?

Threats to biodiversity in the BVI include natural disasters as well as man-made factors. Some of the more common threats to biodiversity include habitat loss/fragmentation, sedimentation, anchor damage, marine pollution, insensitive development, climate change, and invasive species.

Invasive species: The BVI has a considerable amount of invasive species within its small domain. Terrestrially the Cuban tree frog, mongoose, goats, and feral rats and cats are becoming a great nuisance to the environment. In the marine environment, the newly introduced lionfish is causing a great impact on marine animals and thus the fisheries industry. All these invasive species threaten the growth and survival of native organisms.

Climate change: Climate Change brings a series of impacts globally; the BVI expects higher temperatures and an increase in hurricane and flood events. These events will cause considerable impact on both the terrestrial and marine environments. The increase in temperatures will put 20–30 per cent of local plant species at greater risk of extinction, in addition to encouraging bleaching events of one of our tourist attractions; the coral reefs. Hurricanes and flooding events also put animals and other plant species at high risk of danger due to habitat loss and increase of diseases among livestock and plants (Burnett Penn 2010). In the British Virgin Islands, climate change is regarded as a priority, with active political and stakeholder buy in. However, climate change is generally regarded with some scepticism, and the threats posed by climate change are largely regarded as intractable.

Habitat loss / fragmentation: Over the years, the BVI has undergone increased developmental activities which have resulted in habitat loss and fragmentation.

Q4: What are the impacts of the changes in biodiversity for ecosystem services and the socio-economic and cultural implications of these impacts?

Ecosystems	Impacts of the Changes in Biodiversity	Socio-Economic and Cultural Implications
Forest Ecosystems (Water Shed Protection)	<ul style="list-style-type: none"> • Greater flood events and increase sedimentation. • Degradation of Coral reefs • Beach Erosion • Diminished Water Quality 	<ul style="list-style-type: none"> • Loss of property • Heavier concentration of settlement. • Increase in ciguatera incidents. • Reduction in fish stocks. • Decline in recreational marine activities (diving, snorkelling, fishing)
Coral Reefs	<ul style="list-style-type: none"> • Reduce number and diversity of fish species. • Change in coral composition 	<ul style="list-style-type: none"> • Reduction in local food supply • Change in diet • Visitor experience diminished impacting the tourism industry • Reduction in coastal protection
Mangroves	<ul style="list-style-type: none"> • Reduce number and diversity of fish and birds species • Degradation of Coral Reefs 	<ul style="list-style-type: none"> • Reduction in coastal protection • Increase cost after weather events

Optional question: What are possible future changes for biodiversity and their impacts?

Part II: The national biodiversity strategy and action plan, its implementation, and the mainstreaming of biodiversity

Q5: What are the biodiversity targets set by your country?

The Aichi Biodiversity Targets are covered in Question 10.

Q6: How has your national biodiversity strategy and action plan been updated to incorporate these targets and to serve as an effective instrument to mainstream biodiversity?

The BVI does not currently have a National Biodiversity Strategy and Action Plan. A National Environmental Action Plan was created, but was never finalized and implemented.

Q7: What actions has your country taken to implement the Convention since the fourth report and what have been the outcomes of these actions?

Implementation of the *Strategic Plan for Biodiversity 2011-2020* (CBD 2010) and its Aichi Biodiversity Targets are covered in detail under Question 10.

Case study: Enhancing the Capacity to Combat the Imminent Invasion of Lionfish in the BVI

The lionfish (*Pterois volitans*) eradication project was initiated in 2009 after the Conservation and Fisheries Department received funding from JNCC. This project provides a framework to coordinate activities among government and non-governmental agencies and local businesses and organisations to prevent the lionfish from negatively impacting the British Virgin Islands fisheries, marine ecosystems and endangering public safety.

Main outcomes: To control the invasion of lionfish and suppress the local populations in local waters, the Department trained persons through a series of workshops and educated the public on the invasive species through brochures, signage and media/public announcements.

Q8: How effectively has biodiversity been mainstreamed into relevant sectoral and cross-sectoral strategies, plans and programmes?

The British Virgin Islands has nine pieces of legislation dealing with protected areas, species protection and conservation (see Annex 1).

BVI has three main biodiversity-related plans and policies for the entire territory as well as a Biodiversity Action Plan for Anegada, which is the second largest island in the BVI. An environmental profile for Jost Van Dyke was also completed in 2009 (see Annex 2).

The British Virgin Islands has taken part in the current JNCC Environmental Mainstreaming Initiative, and regarded this as a worthwhile exercise. Political will does not present a significant barrier to biodiversity conservation locally. Local politicians will occasionally take

a strong lead on conservation issues, though it is unclear whether public concerns regarding the environment are generally taken seriously by politicians, and translated into solid conservation action. Stakeholder involvement in our conservation strategies is very good, and extends beyond planning into active implementation. The local public generally regard biodiversity conservation as a serious issue, and have become increasingly receptive to, and increasingly participate in, initiatives which benefit the environment.

Q9. How fully has your national biodiversity strategy and action plan been implemented?

The British Virgin Islands does not have an adequate biodiversity action plan. A National Environmental Action Plan was developed, but it has not been updated and remains unimplemented.

The BVI has adequate conservation legislation, however it does not incorporate many current environmental concerns and must be updated as well as centralised in its management. Current and future enforcement practices needed to be strengthened.

Part III: Progress towards the 2020 Aichi Biodiversity Targets and contributions to the relevant 2015 Targets of the Millennium Development Goals

Q10: What progress has been made by your country towards the implementation of the Strategic Plan for Biodiversity 2011-2020 and its Aichi Biodiversity Targets?

BRITISH VIRGIN ISLANDS
RESPONDENTS: Mervin Hastings, Ministry of Natural Resources & Labour, Conservation & Fisheries Department, British Virgin Islands
Strategic Goal A: Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society
Target 1: AWARENESS
1. Conservation & Fisheries Environmental Month Programme.
2. National Parks Trust (NPT) Annual Harbour Day Activities.
3. Marine Awareness Guide.
4. Sustainability Network Committee Established – THE NATURAL STEP.
5. Creation of an Environmental Atlas of the BVI for Students.
6. Best management practices: A guide for Reducing Erosion in the BVI.
7. The Virgin Islands Climate Change Adaptation Policy.
Target 2: INTEGRATION
1. NPT Darwin Plus project to conserve plant diversity and establish ecosystem base approach to management.
2. NPT integration of new areas in the System Plan of Protection Area in the BVI.
3. Stakeholders Meeting to develop a framework for beach management.
4. Integration of GIS and Biodiversity data into the national development planning process.
5. British Virgin Islands Sustainability Capacity Building Programme Initiated following THE NATURAL STEP.
Target 3: INCENTIVES and SUBSIDIES
1. Introduction of an Environmental Green Pledge Award for sustainable business practices.
Target 4: SUSTAINABLE PRODUCTION and CONSUMPTION
1. Environmental mainstreaming in progress to inform strategic decision making within the government by improving the development planning process.
2. Prevention of over fishing by the enforcement of legally regulated closed seasons of commercial fisheries.

Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use
Target 5: HABITAT LOSS
1. NPT development of a Forest Management Plan as part of the Darwin Plus Project (2013–2015).
2. Declaration of the Marine and Terrestrial Protected Area Network Identified in the System Plan of Protect Area.
Target 6: SUSTAINABLE FISHERIES
1. Prevention of over fishing by the enforcement of legally regulated closed seasons of commercial fisheries.
2. Zoning within the Proposed Marine Protected Area Network for No Fishing and Regulated Fishing.
3. Increase enforcement and patrolling of the commercial fisheries sector by Conservation & Fisheries Department.
Target 7: SUSTAINABLE AGRICULTURE, AQUACULTURE and FORESTRY
1. NPT development of a Forest Management Plan as part of the Darwin Plus Project (2013–2015).
2. Experimental aquaculture project for lobster farming on going and well managed.
Target 8: POLLUTION
1. The development of a sustainable yachting policy for holding tanks by the Ministry of Natural Resources & Labour.
2. The development of a waste management strategy by the Department of Waste Management.
Target 9: ALIEN INVASIVE SPECIES
1. Creation of a NGO (Reef Guardians) to specifically target the control of lionfish populations.
2. Eradication of goats at Great Tobago National Park – 3rd largest Frigate Bird colony in the Caribbean.
3. Reduction of mongoose population on 2 outer islands by NGO – Jost Van Dyke Preservation Society.
4. GIS mapping of invasive plant species across the BVI through NPT Darwin Plus Project.
5. Compilation of information on alien invasive species on three islands profiles – OTEP-funded project by Island Resources Foundation.
Target 10: CLIMATE CHANGE
1. The creation and approval by Cabinet of the Virgin Islands Climate Change Adaptation Policy.
2. Creation of a Best management practices: A guide for Reducing Erosion in the BVI.
Strategic Goal C: To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity
Target 11: PROTECTED AREAS
1. Declaration of the Cabinet approved Systems Plan of Protected Areas for the BVI.
2. Zoning of the Protected Area Network using IUCN management categories.
Target 12: EXTINCTION
1. Updating IUCN red list with known threatened plant species through the NPT Darwin Plus Project.
2. NPT creation of a recovery plan for the critically endangered Anegada rock iguana <i>Cyclura pinguis</i> .
3. Continued monitoring of Sea turtle populations through a tagging programme.
Target 13: GENETIC DIVERSITY
Strategic Goal D: Enhance the benefits to all from biodiversity and ecosystem services
Target 14: SAFEGUARDING ECOSYSTEM SERVICES
1. Declaration of important Mangrove ecosystems as protected areas due to their importance as hurricane shelters for the marine industry.
2. Continuation of the mangrove replanting programme by NPT.
3. Continuation the water quality monitoring programme in the BVI.
Target 15: CARBON STOCKS
1. The creation and approval by Cabinet of the Virgin Islands Climate Change Adaptation Policy.
2. National Parks Trust (NPT) Annual Arbour Day Activities.
Target 16: NAGOYA PROTOCOL

Strategic Goal E: Enhance implementation through participatory planning, knowledge management and capacity building
Target 17: NATIONAL BIODIVERSITY ACTION PLAN
1. The National Environmental Action Plan developed by CFD will be updated using the outputs from the Sustainability Capacity Building Program.
Target 18: TRADITIONAL KNOWLEDGE and USE
1. Existing use of traditional fishing grounds taking into consideration in the Marine Protected Area Zoning process.
Target 19: INFORMATION SHARING
1. The use of GIS and sharing of data with National GIS committee to promote better understanding of the remaining distribution and condition of threatened habitats and species through the NPT Darwin Plus project.
Target 20: FINANCIAL SUPPORT FOR IMPLEMENTATION of STRATEGIC PLAN FOR BIODIVERSITY
1. The establishment of the cabinet approved Climate Change Trust Fund.
2. Implementation of the Sustainable Finance Plan for the Protected Area Management Plan.
3. The continued participation in the Caribbean Challenge Initiative with The Nature Conservancy and other Stakeholders.

Proportion of terrestrial and marine areas protected

The Government of the British Virgin Islands, Ministry of Natural Resources and Labour has developed a well-structured system of marine and terrestrial protected areas. Terrestrial areas consist of national parks, bird sanctuaries, wetlands/salt ponds, forestry and watershed protected areas. Currently, the BVI National Parks Trust manages 19 land-based national parks (five of which are bird sanctuaries), and one marine park. The Conservation and Fisheries Department manages 14 fisheries protected areas, and the Agriculture Department manages six watershed protected areas and one forestry protected area.

Proportion of species threatened with extinction

Summary of the 2008 IUCN Red Listed species for the British Virgin Islands

Critically endangered	Endangered	Vulnerable	Near-Threatened	Extinct(Extinct in the wild)	Lower risk/conservation dependent	Data deficient
14	10	18	17	0	2	14

Q11: What has been the contribution of actions to implement the Convention towards the achievement of the relevant 2015 targets of the Millennium Development Goals in your country?

Most relevant MDGs to this report are:

Target 7.A: *Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources.*

Target 7.B: *Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss.*

ANNEX 1

MULTILATERAL ENVIRONMENTAL AGREEMENTS

- St Georges Declaration of Principles for Environmental Sustainability in the OECS
- ICCAT
- CITES
- CMS
- CARTAGENA Convention
- RAMSAR

NATIONAL ENVIRONMENTAL LEGISLATION

- The Fisheries Regulations 2004
- National Parks Act 2007
- National parks Regulations 2008
- Protected Area System Plan 2007–2017
- Planning Act 2004

ANNEX 2

BRITISH VIRGIN ISLANDS NATIONAL ENVIRONMENTAL AND BIODIVERSITY-RELATED STRATEGIES

Other national environmental strategies include:

- BVI Protected Area Systems Plan 2007–2017
http://www.bviddm.com/index.php?action=doc&category_id=6
- National Environmental Action Plan (NEAP)
<http://www.bvidef.org/1/>
- National Integrated Development Strategy (NIDS)
www.cepal.org/publicaciones/xml/8/5608/lcl1440i.pdf
- Anegada Biodiversity Action Plan (2006)
<http://www.seaturtle.org/mtrg/projects/anegada/Anegada%20BAP.pdf>
- Environmental Profile for Jost Van Dyke (2009)
http://www.jvdgreen.org/Final_Profile.html

The following information is based on an account supplied to us by the Cayman Islands Government. Additional information was obtained from the following sources:

- Pelembe, T. and Cooper, G. (eds). 2011. *UK Overseas Territories and Crown Dependencies: 2011 Biodiversity Snapshot*. Peterborough, UK: Joint Nature Conservation Committee.
- Cottam, M. (ed.). 2013. *The UK Overseas Territories Biodiversity Strategy – Review of Progress*. UKOTA, Joint Nature Conservation Committee.
- Cottam, M. (ed.). 2013. *Recent Conservation Achievements of UK Overseas Territories and Crown Dependencies and their Contributions to National Aichi Biodiversity Targets (2013)*. Peterborough, UK: Joint Nature Conservation Committee.

Part I: An update on biodiversity status, trends, and threats and implications for human well-being

Q1: Why is biodiversity important for your country?

The economy of the Cayman Islands depends heavily on tourism, much of this nature-based. However, there are few detailed studies quantifying the total economic value of the islands' biodiversity. A recent FCO OTEP-funded project quantified the total economic value of sharks to the Cayman Islands as between US\$80 million and US\$130.7 million (Ormond *et al* 2012).

From a cultural perspective, the Caymanian identity is closely linked to various aspects of the Islands' biodiversity. The endemic Silver Thatch Palm (*Coccothrinax proctorii*), now recognised as the National Tree, was historically exported in the form of thatch rope and is still used extensively for baskets, hats, etc, in the tourist souvenir trade and for aesthetic roofing on cabanas. The endemic Wild Banana Orchid (*Myrmecophila thomsoniana*) and the Cayman parrots (*Amazona leucocephala caymanensis* & *hesterna*) are also national symbols.

In the terrestrial system, the dominant vegetation consists of dry sub-tropical forests, shrubland and mangrove swamps. Dry forest represents the most biodiverse of all terrestrial habitats in the Cayman Islands and contains the Islands' most significant assemblages of rare and endemic plants and trees. Biodiversity is highest in areas where the forest lies adjacent to wetlands. In this situation, moist air derived from the wetland bathes the understory, providing a humid environment beneath the trees canopy; conducive to the profuse growth of epiphytes, including bromeliads and orchids. Dry forest supports a diversity of resident and migratory birds. Fruiting trees of forest and woodland provide food and shelter for nest-builders. The living and dead trunks of large forest trees provide a home for cavity nesters. Dry forest is an important habitat for several species of bat including the White-shouldered Bat *Phyllops falcatus* (Cottam *et al*, 2009). Shrubland closely follows dry forest in terms of its biodiversity value and is of particular importance for reptiles, including the Grand Cayman Blue Iguana *Cyclura lewisi*. The Central Mangrove Wetland (CMW) on Grand Cayman represents the most significant area of wetland in the islands and remains largely intact, extending to some 8,639 acres. The CMW performs a variety of ecosystem services, which include acting as a nursery ground for a diversity of reef species, controlling freshwater land drainage to the North Sound and influencing local rainfall patterns.

Coral reefs are perhaps the most significant feature of the Cayman Islands marine environment, from both biodiversity and economic perspectives. They provide a variety of important ecosystem services, including coastal protection, fisheries and marine-based tourism. Locally, coral reefs are home to numerous species of significance; including

Parrotfish, Angelfish, Damselfish, Butterflyfish, groupers, snappers, grunts and wrasses. The Cayman Islands are almost entirely surrounded by fringing reefs enclosing shallow, sand and seagrass-filled lagoons. Seawards of the fringing reef, coral-dominated 'spur and groove' reef formations crest a near-vertical drop-off, a popular diving attraction known locally as 'the wall'.

Some 716 species of vascular plants are now known in the Cayman Islands. Twenty-six species are endemic (Proctor 2011). Close to 75 per cent of the reptiles found in Grand Cayman are endemic. A variety of invertebrates, including a scorpion, centipede and numerous species of land snails are also endemic.

Q2: What major changes have taken place in the status and trends of biodiversity in your country?

If current trends continue, extinction (functional or absolute) of some Cayman Islands species is likely to occur by 2020. We expect significant loss of key habitats to occur by 2020; however we also expect significant improvement and safeguarding of ecosystem services. Overall, in the Cayman Islands, the gap between conservation action and the loss of species and habitats is widening.

Q3: What are the main threats to biodiversity?

There are many threats to biodiversity in the Cayman Islands. The potency of all threats is exacerbated by a lack of appropriate protection. The major threats, in order of significance are:

1. Legislation: Lack of any appropriate legislation that enables a comprehensive approach to the preservation of biodiversity is the single most detrimental element to the future maintenance of biodiversity in the Cayman Islands. The (draft) National Conservation Law has been under consideration by successive governments for the past ten years; however, to-date this crucial legislation has not been enacted. An '**Environmental Protection Fund**' collects some \$4–5 million per year for the purposes of preserving the natural environments of the Cayman Islands – funds sufficient to incur significant environmental benefits. However, in the absence of appropriate regulations for the disbursement of these funds, only a small proportion have been spent on the purposes for which the fund was originally established.

2. Developmental impact: As the population of the Cayman Islands grows, commercial and residential development combined with associated infrastructure (particularly roads) bring increasing pressure to bear on the finite landscape as well as on marine resources. Due to a lack of legislation/appropriate regulation and an economy dependent in large part on development, ongoing development in the Cayman Islands proceeds with little consideration for environmental impact, or the implementation of potential mechanisms to reduce/mitigate impacts. Weak planning laws, poor enforcement of existing planning legislation, lack of statutory requirement for EIA (even for major projects), speculative land clearance, exemption of roads construction from basic planning permission, and reliance by developments on exotic landscaping exacerbate environmental impacts of new projects. The role of the Department of Environment in determining best practice in both the marine and terrestrial environment is constrained to one of recommendation. As a footnote, in the wake of uncontrolled development and associated economic instability, immediate social issues such as crime and employment have traditionally taken precedence above long-term sustainability in both the political and public consciousness.

3. Invasive species: shifting baselines, a propensity towards landscaping with exotic species from Florida, and limited capacity/resources to deal with Invasive Alien Species (IAS) have resulted in the introduction and establishment of many invasive species into the Cayman Islands. Most impactful animals (in order of impact) are rats, cats, green iguanas, and dogs. For plants *Casuarina equisetifolia* and *Scaevola sericea* exact most significant impact, especially in coastal regions. All are beyond reasonable scope for eradication. Brazilian Pepper is newly established in Cayman Brac and spreading rapidly. In the marine environment, the Red lionfish *Pterois volitans* is likely to cause extreme impact to reef biodiversity, despite the plethora of control measures currently being exacted by Government, private sector and volunteers. Satisfactory responses to the impacts of Alien Invasive Species (IAS) at the scale required will likely remain beyond our capacity for the foreseeable future.

4. Climate Change: In the Cayman Islands, climate change is not yet regarded as a priority by decision-makers. While a Draft National Climate policy has been in existence from 2011, it has not been formally adopted by the government. A workshop, carried out by the team from the Caribbean Community Climate Change Centre (CCCCC) in Belize, provided the Cayman Islands with specific information on climate change in the Islands. The predicted changes from 2011 to 2099 include an increase of 2–2.7°C for average temperature, 1.8–2.8°C for the average maximum temperature, 1.7–2.6°C for the average minimum temperature, a 10–50mm decrease in annual rainfall totals, little to no change in relative humidity, 2.2–2.8°C increase in the comfort index, a 12–80cm increase in sea levels, and a decrease in the wind speed of 5.5–5.0ms⁻¹ (Hurlston-McKenzie *et al* 2011). Elevated sea temperatures over the past two decades have resulted in significant increases in major coral bleaching episodes and a subsequent rise in coral disease and mortality in the Cayman Islands. Major storms have also resulted in substantial impacts to the shallow and fringing reef environment. More frequent and larger storms are likely to continue to impact the biodiversity of our low-lying islands.

Q4: What are the impacts of the changes in biodiversity for ecosystem services and the socio-economic and cultural implications of these impacts?

The economy of the Cayman Islands is based on tourism, with much of this being nature-based tourism. However, at present national accounts and statistics do not permit the economic impact of the tourism industry to be evaluated. There are also no data which can be utilised to estimate the social and/or cultural impacts of the changes in biodiversity.

Optional question: What are possible future changes for biodiversity and their impacts?

Part II: The national biodiversity strategy and action plan, its implementation, and the mainstreaming of biodiversity

Q5: What are the biodiversity targets set by your country?

Aichi Biodiversity Target 2 (Integration) requires biodiversity values to be integrated to national development and planning processes. The draft National Conservation Legislation will require consultation on any environmental implications of all projects, plans, policies and actions.

Under Aichi Biodiversity Targets 5 and 11 (Habitat Loss and Protected Areas), the National Biodiversity Action Plan (2009–2015) has established targets for terrestrial areas that include protecting 20 per cent of the currently remaining forest and woodland, 600 acres of contiguous dry shrubland (approximately 20 per cent) on Grand Cayman and 300 acres each on Little Cayman and Cayman Brac, and 90 per cent of the remaining mangrove habitat in the Cayman Islands.

For marine areas, a recent Marine Protected Area review following 25 years of marine parks in the Cayman Islands highlighted the need to protect between 40 and 50 per cent of the coastal shelf in 'no-take' reserves, and this is the current target. This marine target also applies to Aichi Biodiversity Target 6 (Sustainable Fisheries), with additional species protection for culturally important marine species including conch, lobster and grouper, and Aichi Biodiversity Target 10 with respect to reducing anthropogenic pressures and promoting resilience in coral reef environments.

There is a national Aquaculture Policy in place that promotes small-scale sustainable aquaculture for appropriate species compatible with the local environment, as per Aichi Biodiversity Target 7.

Current lionfish control efforts, pilot cat and monk parakeet eradication programmes, green iguana initiatives, and new legislation relevant to the import and trade in species of concern are being implemented and go some way to meeting the requirements under Aichi Biodiversity Target 9.

The Cayman Islands Flora Red List, the Blue Iguana Recovery Programme, and initiatives at the QEII Botanic Park address local species extinction concerns under Aichi Biodiversity Target 12.

The National Biodiversity Action Plan meets the requirements of Aichi Biodiversity Target 17 and establishes its own review process with measurable targets; however it has not yet been adopted as a national policy instrument.

Q6: How has your national biodiversity strategy and action plan been updated to incorporate these targets and to serve as an effective instrument to mainstream biodiversity?

The Cayman Islands' National Biodiversity Action Plan runs from 2009 to 2015, although the document has not yet been formally adopted as a national policy instrument.

Q7: What actions has your country taken to implement the Convention since the fourth report and what have been the outcomes of these actions?

Implementation of the *Strategic Plan for Biodiversity 2011-2020* (CBD 2010) and its Aichi Biodiversity Targets are covered in detail under Question 10.

Additional legislative and policy improvements that have direct implications on the requirements of the Convention include:

- **Draft National Conservation Law (NCL):** One of the most pressing issues for the Cayman Islands from a species protection perspective is the fact that neither Cayman's native plants (including the National Tree and National Flower), nor the vast majority of its native animals (including the only native mammal), have legal protection. There is also no suitable legal framework which provides for the

establishment and management of a national system of protected areas on land, similar to the long-established system of Marine Parks. This has been the impetus for the development of a Draft National Conservation Law which is still awaiting Government's approval. In the summer of 2010, the Department of Environment (DoE) completed a major public outreach exercise which solicited the views of the community on the Draft Bill. While the public's response was largely positive, amendments were recommended and have been incorporated. The Draft NCL bid is currently under consideration by Government and anticipated to be debated in the Legislative Assembly by the end of 2013.

- **Climate Change Policy:** Under the auspices of the DFID-funded 'Enhancing Capacity for Adaptation to Climate Change' (ECACC) project, a Final Issues Paper was completed which formed the basis for the development of a Draft Climate Policy by the joint public/private sector Climate Change Working Group. The DoE is currently waiting on an opportunity to present the policy to Cabinet and Caucus. The recently elected government (May 2013) has highlighted climate change as a priority issue.
- **Stingray Legislation:** In 2012 the Marine Conservation Law was amended to provide total protection for three species of elasmobranchs deemed locally important for the tourism industry; (i) Southern Stingray (*Dasyatis americana*), (ii) Manta Ray (*Manta birostris*), and (iii) Eagle Ray (*Aetobatus narinari*).
- **Animals Law Iguana amendment – Green Iguanas:** A technicality in the Animals Law which inadvertently provided protection for the invasive green iguana was recently removed by the Legislative Assembly. This now makes it legally possible for individuals to begin culling the large numbers of this animal whose precise impact on local species and habitats has not yet been determined.
- **Degazetting of Animal Sanctuary:** Of concern, in 2012 one of the Cayman Islands' four remaining Animal Sanctuaries, Cayman Brac's Dennis Point Pond, had its protected status removed to allow for on-going efforts to improve water quality and odour issues that were impacting a hotel sited in its vicinity. This was the only remaining Animal Sanctuary in Cayman Brac and was the second one to be removed there since their establishment in 1976.

International funding and conservation projects that have direct implications for the Convention:

Darwin Initiatives

Following the passage of Hurricane Ivan in 2004, the DoE and its project partner, University of Exeter, embarked on the first UK-funded Darwin Initiative, '*In Ivan's Wake*', to be carried out in the Cayman Islands. The project resulted in a comprehensive National **Biodiversity Action Plan** and detailed habitat maps for the marine and terrestrial environments of the three Cayman Islands. The Biodiversity Action Plan is comprised of detailed conservation plans for local habitats and species. However, implementation of the vast majority of actions and recommendations contained in the plans is contingent on the passage of a more comprehensive legal framework for conservation of habitats and species such as envisaged by the Draft National Conservation Law.

In 2010 the DoE launched the Second Cayman Islands Darwin Initiative, 'Enhancing an Existing System of Marine Protected Areas'. This builds on the habitat mapping exercise carried out under the first Darwin project and has been aimed at conducting a scientifically robust assessment of the Marine Parks system. Partners in the project which is funded

through the UK's Department for Environment, Food & Rural Affairs (DEFRA) to the amount of £270,000 include the School of Ocean Sciences, Bangor University, Wales, and The Nature Conservancy. The project, which coincided with the 25th anniversary of the establishment of Marine Parks in the Cayman Islands, also supports continued development of local scientific capacity in that some of the project work will contribute to a PhD thesis for a Senior Marine Research Officer in the DoE.

The review of the existing Marine Parks system has now been completed and an enhanced system of marine parks has been developed which, if approved by Cabinet, will put between 40 and 50 per cent of Cayman's shelf area under protection in 'no-take' reserves and once again place Cayman at the fore-front of marine conservation initiatives throughout the region and the world. Throughout the review, the DoE has engaged in an extensive public consultation exercise which is aimed at inviting the public's input on the specifics of the new proposals. The amended proposals which take account of the public's input will be submitted to Cabinet for approval in late January/early February 2014.

In 2012, a subsequent Darwin Initiative Post Project, 'Assuring Engagement in Cayman's Enhanced Marine Protected Area System' was awarded to address four challenges, identified from field study and stakeholder interaction:

- (i) **Invasive species control:** Lionfish culling programmes are believed to mitigate the impact of lionfish on reef-fish communities, but are resource intensive. Reduced sightings in culled zones may be due to lionfish learning to avoid divers, rather than culling being effective – in which case, resources could be better deployed;
- (ii) **Protection of fish spawning aggregations (SPAGs):** Historically exploited by fishers, sites are now seasonally closed for fishing of Nassau grouper to allow stocks to recover. But, the sites appear important for 22 other species of reef fish potentially all year round. No-Take designation must be justified, and mitigated, due to displacement and possible non-acceptance amongst the poorest fisher;
- (iii) **Sustainability of concessions to fishers:** The enhanced MPA system provides fishing at MPA boundaries opposite community boat-ramps, minimising fishers' fuel costs. But fish overspill from MPA must be monitored and adaptive management introduced if fishers are to benefit long-term;
- (iv) **MPA enforcement dilution:** Expansion of No-Take MPAs from 15 per cent to 50 per cent of the Cayman shelf requires an expansion in enforcement, but there are no resources to achieve this. **An innovative approach using social media and smart phone and tablet technology is planned to involve the public.**

OTEP Shark and Cetacean Project

Since 2009, the Department of Environment, and partner organisations Marine Conservation International and the Save Our Seas Foundation, with funding from the Overseas Territory Environment Programme, and with the involvement of the Guy Harvey Research Institute, undertook to investigate both the status and value of sharks and rays (elasmobranchs), and of whales and dolphins (cetaceans) in Cayman waters. In 2012, the first stages of the research have been completed and a report synthesising the results has been produced for the public. Policy recommendations that seek to protect elasmobranchs and cetacean populations around the Cayman Islands, and especially on Little Cayman have been developed, but have yet to be considered by Government.

Since the last national report Department of Environment core programmes and the NBAP have contributed directly to the development of a variety of new and existing projects for species and habitat conservation, including:

- **Lionfish control programme:** The DoE received a grant from the Joint Nature Conservation Council (JNCC) to continue work with Reef Environmental Education Foundation (REEF) to develop more effective methods of control, and continues to

work with the dive community to cull the numbers of lionfish on the reef. JNCC also funded a two-day regional Overseas Territories Technical Workshop on the invasive Lionfish which was held in Cayman in July 2013 and includes an assessment of the economic impact of lionfish on the tourism and diving industry of Cayman.

- **Sister Islands Rock Iguana surveys:** In June 2013 the DoE coordinated and supervised a census of the Sister Islands Rock Iguana on Cayman Brac. The census is part of the Sister Islands Rock Iguana Conservation Plan under the NBAP agreed with partners such as the National Trust, Department of Agriculture, Durrell Wildlife Trust and International Reptile Conservation Foundation among others. This year's work focussed on radio-tracking nesting adults in order to find out more about important communal nesting sites, and continued tagging and data collection (including genetic samples) of animals.
- **Marine Turtles:** Since the programme first began in 1998, DoE staff and volunteers continue to monitor approximately 55km of coastline for signs of marine turtle nesting from Green, Loggerhead and Hawksbill populations. As of October 2013 nesting numbers have improved dramatically from less than 30 in 1998 to well over 300. Monitoring methods have been consistent and the numbers represents a true increase as a direct result of local management initiatives, enforcement and changes in fishery legislation.

Additionally each year, the DoE's monitoring programme has been able to see a contribution to the wild population from tens of thousands of green turtles released from the Turtle Farm in the 1980s. The DoE is currently engaged in a study to evaluate the Farm's contribution by utilizing additional night-time beach monitoring and collecting and analyzing genetic samples from nesting wild turtles.

Light pollution on nesting beaches continues to pose a major threat for the recovering turtle population. Most nests are now found on developed beaches, and despite the DoE's best efforts, every year lights on the beach disorient many hatchlings. The DoE is currently working to fund the development of 'turtle friendly' lighting solutions that are cost-effective and appropriate for tourism properties.

- **Nassau Grouper Project:** The DoE continues to monitor and manage one the largest populations of spawning Nassau groupers remaining in the Caribbean. The successful efforts of the DoE and research partners REEF and University of Oregon, have led to a number of legislative recommendations for protection of local grouper which are currently being considered by Government, including increasing the size of the restricted marine areas where spawning currently takes place and introducing closed seasons, catch quotas and slot size limits.
- **Blue Iguana Reserve:** The Government has recently donated approximately 197 acres of xerophytic shrubland in the East End of Grand Cayman to the National Trust's Blue Iguana Recovery Programme (BIRP) towards a reserve for these critically endangered lizards. The reserve, known as the 'Colliers Wilderness Reserve', supports the goal of the Blue Iguana Recovery Programme of establishing a self-sustaining population of approximately 1,000 animals in the wild as well as protecting a representative example of primary xerophytic shrubland habitat. In October 2012 the IUCN status for the Cayman Blue Iguana was lowered from critically endangered to endangered, a milestone wholly attributable to the work of the BIRP and its project partners.

Q8: How effectively has biodiversity been mainstreamed into relevant sectoral and cross-sectoral strategies, plans and programmes?

The Cayman Islands has not yet taken part in the current JNCC Environmental Mainstreaming Initiative, but is keen to do so and discussions for a visit by JNCC staff in November 2013 have been undertaken. Political will has traditionally presented a significant barrier to biodiversity conservation locally, with local politicians failing to take a strong lead on conservation issues and public concerns regarding the environment not taken seriously by them. Stakeholder involvement in conservation strategies has not generally been good, although recent outreach efforts with the Marine Parks Review and National Conservation Legislation have revealed this trend may be changing, with the local public becoming increasingly receptive to initiatives which benefit the environment.

Q9. How fully has your national biodiversity strategy and action plan been implemented?

The Cayman Islands has an adequate biodiversity action plan/conservation strategies; however, our plans and strategies remain largely unimplemented.

The Cayman Islands has inadequate conservation legislation, and enforcement of this existing legislation is also inadequate. The Cayman Islands have five main pieces of legislation dealing with area protection and the conservation of a limited number of animal species. There is no legal protection for plants. The currently proposed draft National Conservation Legislation (NCL), would update and overhaul conservation legislation for the Cayman Islands, bringing it into line with the requirements of various MEAs, including the CBD. However, despite extensive revision, this cornerstone legislation, which underpins the implementation of the NBAP, has failed to be passed by successive governments over the past ten years. The recently elected (May 2013) Government has made repeated strong commitments to bring the required NCL Bill to the Legislative Assembly before the end of 2013.

(See Appendix 1 for more details on Cayman Islands Biodiversity-Related National Legislation: Current and Proposed. See Appendix 2 for more details on Cayman Islands National Environmental Strategies.)

Part III: Progress towards the 2020 Aichi Biodiversity Targets and contributions to the relevant 2015 Targets of the Millennium Development Goals

Q10: What progress has been made by your country towards the implementation of the Strategic Plan for Biodiversity 2011-2020 and its Aichi Biodiversity Targets?

CAYMAN ISLANDS

RESPONDENTS: Tim Austin, Gina Ebanks-Petrie, Dept. Environment, Cayman Islands Government.

Strategic Goal A:

Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society

Target 1: AWARENESS

1. National Biodiversity Action Plan and associated outreach activities.
2. Darwin Marine Parks Review – multiple consultation efforts.
3. Draft National Conservation Legislation public consultation process.
4. Lionfish eradication programme and ongoing public education.

5. Public education process surrounding Grouper Moon project, sharks and stingrays.
6. DOE and National Trust public education including DOE local TV network 'Environment Break', school visits, targeted campaigns, social media, websites and newsletters.
Target 2: INTEGRATION
1. Draft National Conservation Law – includes requirement to consult on environmental issues prior to approvals and provisions for EIA.
2. Native Tree guidelines and Storm Water Management guidelines available at the Planning Department.
3. Continued use and development of environmentally relevant GIS layers for review of planning applications.
4. Development of Turtle Friendly Beach Lighting Guidelines
Target 3: INCENTIVES and SUBSIDIES
Target 4: SUSTAINABLE PRODUCTION and CONSUMPTION
1. All new Government building built to LEED certification standards.
2. Development of a National Energy Policy.
3. CUC "CORE" Programme and Government requirements for renewable energy generation.
4. Government incentives for solar power.
Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use
Target 5: HABITAT LOSS
Target 6: SUSTAINABLE FISHERIES
1. Darwin Marine Parks Review implemented.
2. Protection for Stingrays, Manta and Eagle Rays.
3. Continued enforcement of local Marine Conservation Laws.
4. National Biodiversity Action Plan.
5. Grouper Moon programs for locally important Nassau Grouper aggregations.
6. Monitoring of locally important Queen Conch populations.
7. Monitoring and management of nesting turtle populations.
Target 7: SUSTAINABLE AGRICULTURE, AQUACULTURE and FORESTRY
1. Aquaculture Policy to support small scale sustainable projects and ensure avoidance and minimisation of impacts to biodiversity.
Target 8: POLLUTION
1. DOE Water Quality Monitoring Programme for North Sound and George Town Harbour. Water Authority permitting requirements for deep well disposal and trade effluent disposal in marine environment.
2. Port Authority Zero Discharge Policy for all shipping.
Target 9: ALIEN INVASIVE SPECIES
1. National Biodiversity Action Plan as overarching policy.
2. Endangered Species Trade and Transport Law – passed but not yet implemented – border control measures and between island transport of species of concern.
3. Lionfish Control Programmes.
4. Pilot cat eradication programme in Sister Islands (Cayman Brac and Little Cayman).
5. Monk Parakeet eradication efforts.
6. Amendments to local legislation to remove protection for invasive Green Iguana.
7. RSPB funding to address alien invasive species (biosecurity) as part of regional initiative.
Target 10: CLIMATE CHANGE
1. National Energy Policy developed.
2. Draft National Climate Change Policy developed.
3. Darwin Marine Parks Review addresses marine ecosystem resiliency specifically for climate change.
Strategic Goal C: To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity
Target 11: PROTECTED AREAS
1. The draft National Conservation Legislation provides the legal framework for terrestrial and marine protected areas.
2. Darwin Marine Parks Review proposes a robust network of integrated marine parks covering between 40–50 per cent of the marine shelf (0–200ft).

3. The CI National Trust currently targets ecologically important areas for acquisition (e.g. Mastic Forest Reserve, Booby Pond Reserve and Little Cayman Iguana nesting habitat) which in addition to the CI Government Animal Sanctuaries brings terrestrial protection to approximately 5 per cent of the total landmass.
4. CI Government has executed a 99-year peppercorn lease for approximately 100 acres of xerophytic shrubland (important iguana habitat and threatened ecosystem) with the CI National Trust to form the Collier Wilderness Reserve.
Target 12: EXTINCTION
1. The National Biodiversity Action Plan remains key.
2. The Blue Iguana Recovery Programme successfully downgraded the local blue iguana population from IUCN <i>Critically Endangered</i> to <i>Endangered</i> .
3. The Red List for the Cayman Islands Flora prepared and published in 2008.
4. The Flora of the Cayman Islands republished and updated 2012.
5. The QEII Botanic Park continues to propagate locally threatened species including <i>Hohenbergia caymanensis</i> and <i>Pisonia margaretae</i> .
6. Cayman Islands' participation in the Millennium Seed Bank project in collaboration with Royal Botanic Gardens Kew.
Target 13: GENETIC DIVERSITY
1. The Draft National Conservation legislation has provisions for genetically modified species. See 6 above.
Strategic Goal D: Enhance the benefits to all from biodiversity and ecosystem services
Target 14: SAFEGUARDING ECOSYSTEM SERVICES
Target 15: CARBON STOCKS
Target 16: NAGOYA PROTOCOL
Strategic Goal E: Enhance implementation through participatory planning, knowledge management and capacity building
Target 17: NATIONAL BIODIVERSITY ACTION PLAN
1. National Biodiversity Action Plan drafted and widely available although supporting legislation (NCL) remains in draft form.
Target 18: TRADITIONAL KNOWLEDGE and USE
1. Traditional use provisions included in the draft National Conservation Legislation.
Target 19: INFORMATION SHARING
1. DOE Monitoring Programmes in place and widely reported – data used to support legislative and policy recommendations.
2. Well-developed local GIS database available country-wide with significant technical capacity developed and utilised within the DOE.
Target 20: FINANCIAL SUPPORT FOR IMPLEMENTATION of STRATEGIC PLAN FOR BIODIVERSITY
1. The Draft National Conservation Law outlines the appropriate mechanisms for access to the Environmental Protection Fund currently in place since 1997 and includes provisions for the supplementing of the Fund through fees and penalties under the law.

Proportion of land area covered by forest:

The National Biodiversity Action Plan for the Cayman Islands (see www.DoE.ky), published in 2009, includes detailed habitat mapping of all major habitat types for the three islands. In the Cayman Islands, forest occurs in the forms of Mangrove forest (including buttonwood), and Dry forest and woodland.

Mangrove is defined as habitat and plant assemblages associated with Black mangrove *Avicennia germinans*, White mangrove *Laguncularia racemosa*, Red mangrove *Rhizophora mangle*, and Buttonwood *Conocarpus erectus*. Incorporates the following vegetation formations, as per Burton (2008):

- Seasonally flooded evergreen sclerophyllous forest I.A.5.N.c
- Tidally flooded mangrove forest I.A.5.N.e

- Seasonally flooded/saturated sclerophyllous evergreen woodland II.A.1.N.i
- Tidally flooded evergreen woodland II.A.1.N.e
- Seasonally flooded/saturated evergreen shrubland III.A.1.N.f
- Saturated sclerophyllous evergreen shrubland III.A.1.N.h
- Tidally flooded evergreen shrubland III.A.1.N.i

Forest and woodland is defined as a class of vegetation characterized by a closed tree canopy, with interlocking crowns generally providing 60–100 per cent cover. ‘Woodland’, by comparison, is characterised by an open canopy, with tree crowns constituting just 25–60 per cent cover. The canopy height of forest and woodland ranges from about 16m, down to about 4.5m in height, below which shrubland species dominate. Incorporates the following vegetation formations, as per Burton (2008):

- Lowland semi-deciduous forest I.C.1.N.a
- Seasonally flooded/saturated semi-deciduous forest I.C.1.N.c
- Xeromorphic semi-deciduous forest I.C.4.N.b
- Lowland/submontane drought-deciduous woodland II.B1.N.a
- Tropical or subtropical semi-deciduous woodland II.C.1.N.a

The tables below display the areas of forest in the Cayman Islands, as of 2006.

Proportion of Cayman Islands covered by forest (protected and unprotected)

HABITAT STATUS 2006 – MANGROVE												
Category	Total area (acres)			Area within protected areas / buffers (acres)			Area outside protected areas / buffers (acres)			% Habitat protected		
	GC	CB	LC	GC	CB	LC	GC	CB	LC	GC	CB	LC
Seasonally flooded mangrove shrubland / woodland	697.3	19.3	700.0	65.5	0.1	26.0	631.8	19.3	674.0	9.4	0.3	3.7
Seasonally flooded mangrove forest / woodland	12138.6	23.4	464.2	1467.2	0.1	9.6	10671.4	23.4	454.7	12.1	0.3	2.1
Tidally flooded mangrove shrubland / woodland	477.6	0.0	0.0	394.5	x	x	83.1	x	x	82.6	x	x
Tidally flooded mangrove forest / woodland	2802.0	0.0	19.0	1046.6	x	0.0	1755.4	x	19.0	37.4	x	0.0
TOTAL	16115.4	42.7	1183.2	2973.8	0.1	35.6	13141.7	42.6	1147.7	18.5	0.3	3.0
HABITAT STATUS 2006 – FOREST AND WOODLAND												
Category	Total area (acres)			Area within protected areas (acres)			Area outside protected areas (acres)			% Habitat protected		
	GC	CB	LC	GC	CB	LC	GC	CB	LC	GC	CB	LC
Seasonally flooded / saturated semi-deciduous forest I.C.1.N.c	164.3	0.0	0.0	59.1	x	x	105.2	x	x	36.0	x	x
Xeromorphic semi-deciduous forest I.C.4.N.b	0.0	4558.8	0.0	x	261.5	x	x	4297.3	x	x	5.7	x
Dry forest and woodland	7371.5	0.0	1926.6	491.2	x	71.3	6880.3	x	1855.3	6.7	x	3.7
TOTAL	7535.8	4558.8	1926.6	550.3	261.5	71.3	6985.5	4297.3	1855.3	7.3	5.7	3.7

Proportion of terrestrial and marine areas protected:

The Cayman Islands Department of Environment has established a well-structured network of marine protected areas. This system of protected areas celebrated its 25th anniversary in 2011. There is currently no legislation to enable establishment of a parallel system of Terrestrial National Protected Areas in the Cayman Islands, effectively paralyzing efforts to develop a National Parks system in the three Islands. Land-based protected areas are limited to Animal Sanctuaries (designated under the Animals Law 1976), and National Trust property. In the past, Animal Sanctuaries have been degazetted in the interests of facilitating development (e.g. Westerly Ponds and Saltwater Pond Animal Sanctuary (Cayman Brac)). Despite its 'inalienable' status, National Trust Property is currently subject to gazetted road corridors, which includes transgression of the 'Central Mangrove Wetland', the 'Mastic Reserve', the 'Salina Reserve', and Collier's Wilderness Reserve National Trust properties.

The most significant forest areas are within the Mastic region of Grand Cayman and the Bluff forest on Cayman Brac. The National Trust has purchased, and protects, a significant proportion of the Mastic forest within its expanding Mastic Reserve (c.998 acres with further purchases pending); however, the southern portion of this reserve is currently at threat from a proposed road corridor. The Trust also protects some 287 acres of the Bluff forest, in the form of the Brac Parrot Reserve. Shrubland is a biodiverse habitat and under-represented in the protected areas of the island. In Grand Cayman, approximately 624 acres of shrubland is protected within the National Trust Salina Reserve, and a further 190 acres was recently secured on a 99-year peppercorn lease from Cayman Islands Government. Both areas are currently under threat from a proposed road corridor. Both areas are of particular

importance for reptiles, particularly the Grand Cayman Blue Iguana, which is utilized locally as a charismatic flagship species for shrubland preservation.

Many reefs are protected in the form of Marine Parks, and associated Replenishment Zones, in which in-water activities are restricted. The Department of Environment is currently operating a Darwin Initiative and post Darwin-funded research grant; examining the effectiveness of the Marine Parks in the Cayman Islands. The study has produced practical recommendations for the enhancement and best management of these protected areas, including increasing protection as 'no-take' zones to 40–50 per cent of the near-shore shelf (0–200ft contour). Currently no-take protection stands at 15 per cent.

Summary of protected areas in Cayman Islands

	GRAND CAYMAN	LITTLE CAYMAN	CAYMAN BRAC			
TERRESTRIAL						
Total area (hectares)	19,685.47	2,886.81	3,847.43			
Protected areas						
Animal Sanctuaries	99.66	0.51%	4.58	0.16%	0.0	0.0
National Trust land	924.04	4.69%	141.98	4.92%	123.38	3.21%
Environmental Zone	647.70	3.29%	0.0	0.0	0.0	0.0
Total protected	1,671.40	8.49%	146.56	5.08%	123.38	3.21%
THREE ISLANDS TOTAL TERRESTRIAL PROTECTED AREAS	Of a total land area of 26,419ha, 1,941ha (7.35%) are protected					
MARINE						
Total shelf area to 80ft contour (hectares)	16,148.30	2,614.07	2,125.19			
Protected areas to 80ft contour (hectares)						
Environmental Zone	1,020.01	6.32%	0.0	0.0	0.0	0.0
Grouper Hole	256.51	1.59%	309.41	11.84%	200.92	9.45%
Marine Park	923.06	5.72%	277.93	10.63%	326.66	15.37%
No Dive Zone	263.25	1.63%	0.0	0.0	0.0	0.0
No SCUBA Zone	23.65	0.15%	0.0	0.0	0.0	0.0
Replenishment Zone	4,255.84	26.35%	710.40	27.18%	41.53	1.95%
Wildlife Interaction Zone	563.35	3.49%	0.0	0.0	0.0	0.0
Total no-take zones	2,530.07	15.67%	277.93	10.63%	326.66	15.37%
Total marine protected area to 80ft contour (hectares)	7,305.67	45.24%	1,297.74	49.64%	569.11	26.78%
THREE ISLANDS TOTAL MARINE PROTECTED AREAS (to 80ft contour)	Of a total shelf area of 20,887.56ha, 9,172.52ha (43.91%) are protected, of which 3,134.66ha (15.01%) are no-take zones.					
Total marine protected areas including areas outside 80ft contour (hectares)	8,103.78ha, of which 3,211.45ha are no-take	1,453.18ha, of which 277.93ha are no-take	668.40ha, of which 326.66ha are no-take.			
Total marine protected areas including areas outside 80ft contour (hectares)	In the Cayman Islands, a total of 10,255.36ha of marine areas are protected, of which 3,816.04ha are no-take zones.					
NOTE: where marine protected areas overlap, the higher designation is considered.						

Proportion of species threatened with extinction:

The Cayman Islands can boast some sound conservation success stories; most famously the work of Fred Burton and the Blue Iguana Recovery Programme (www.blueiguana.ky), in saving the Grand Cayman Blue Iguana *Cyclura lewisi* from extinction. Once the world's most endangered rock iguana, the Blue's have recently improved their IUCN status from

critically endangered to endangered thanks to the efforts of this remarkable captive-breeding programme. Re-discovery and commercial propagation of the Cayman Sage *Salvia caymanensis* in 2007 highlighted the role which the public can play in nature conservation, and resulted in 300 individual plants found and approximately 18,000 seeds collected. Seeds were transferred to the Millennium Seed Bank Project (Royal Botanic Gardens Kew), and also propagated in a Native Tree Nursery, and planted out in private gardens and native landscaping schemes around the island.

On the extinction front, however, good news stories are few and far between. There are over 415 species and varieties of plants native to the Cayman Islands; however none are protected under local legislation. The most serious threats to Cayman plant life are habitat destruction and invasive species. According to the *Threatened Plants of the Cayman Islands – the Red List* (Burton 2009), 46 per cent of all Cayman Islands' native plants rank as threatened with extinction.

Summary of the 2008 IUCN red listed species for the Cayman Islands

Critically endangered	Endangered	Vulnerable	Near-Threatened	Extinct(Extinct in the wild)	Lower risk/conservation dependent	Data deficient
6	7	20	17	1	1	20

Q11: What has been the contribution of actions to implement the Convention towards the achievement of the relevant 2015 targets of the Millennium Development Goals in your country?

The implementation of the National Conservation Law would directly meet relevant actions under Target 7 A and 7 B of the Millennium Development Goals.

Q12: What lessons have been learned from the implementation of the Convention in your country?

Implementation of the Convention is not a topic that is widely discussed.

ANNEX 1:

CAYMAN ISLANDS BIODIVERSITY-RELATED NATIONAL LEGISLATION: CURRENT AND PROPOSED ¹

Existing relevant legislation dealing with protected areas, species protection and conservation in the Cayman Islands are:

Animals Law (2011 revision):

Provides for the protection of the endemic Grand Cayman blue iguana *Cyclura lewisi* and Sister Islands Rock iguana *Cyclura nubila caymanensis* and all non-domesticated bird species. The Animals Law also describes designated Animal Sanctuaries within the three islands: brackish water pools and buffer vegetation protected, in the most-part, for their birdlife interest. Within Animal Sanctuaries, hunting is prohibited and it is an offence to disturb any flora or fauna. This law, however, offers no protection to native species of bats or any of the many other endemic species of animals. This list of protected species would be updated by the (draft) National Conservation Law.

Development and Planning Law (2011 revision):

Mandates the development of a Development Plan for Cayman Islands. This Plan delineates land-use zones on the island. However, this plan only covers Grand Cayman and it includes little or no environmental consideration. For example, the four proposed Conservation Overlays were removed from the last version of the Development Plan. There is also no legislated requirement for EIA in the Cayman Islands; any requirement for EIA currently falls to the discretion of the Central Planning Authority.

Endangered Species (Trade and Transport) Law, 2004:

Gives effect to the provisions of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

Marine Conservation Law (2007 revision) and subsequent Marine Conservation (amendment) Law 2013:

Provides protections for marine resources including closed seasons, size limits, catch limits, and restrictions on fishing methods for a variety of species and allows for the designation of restricted marine areas for the purpose of research and management (marine parks).

Marine Conservation (Marine Parks) Regulations (2007):

Designates marine protected areas within four categories and specifies the rules that apply to each zone:

1. Environmental Zones: removal or damage of any marine life, any in-water activity and anchoring are all prohibited.
2. Replenishment Zones: removal of conch and lobster is prohibited and fishing methods other than traditional line fishing are prohibited.
3. Marine Park Zones: all marine life is protected and anchoring of boats over 60ft forbidden.
4. Wildlife Interaction Zones: restricts interaction with marine species (e.g. fish feeding), to these designated zones; restricts fishing within these zones. Vessels visiting the popular Stingray City and Sandbar WIZ are required to be licensed and are subject to a variety of best practises in the form of licence conditions.

National Trust Law (1997 revision):

Outlines the purposes and powers of the National Trust for the Cayman Islands. This includes the capability to purchase and protect land through its being declared inalienable. Offences on Trust property include take of any flora or fauna.

A proposed (draft) National Conservation Law (NCL), first tabled in the Legislative Assembly in 2002, and again in 2007, would replace the Marine Conservation Law and relevant sections of the Animals Law. Several public consultation processes have been undertaken with key stakeholders and the general public. If passed, the Conservation Law would establish a National Conservation Council to administer the law and bring conservation actions closely in line with the CBD, other MEA commitments and the Environment Charter.

Relevant features of the NCL which would strengthen biodiversity conservation include:

- Establishment of protected areas on Crown Lands. The objectives and level of protection will be detailed in a management plan for each site. There is currently no legislation for National Parks or a system of Protected Areas on the islands.
- Provision for the protection of private lands through a government-financed lease agreement between landowners and the Governor which would restrict the use or development of land. The conservation agreement can be re-negotiated after a specified period.
- Protection of plant and animal species and establishment of conservation plans for each protected species. Currently, no plant species are protected in Cayman, and only iguanas and non-domestic birds other than game birds are protected. Until recently the current Animals Law (1976) protected the invasive green iguana, although recent amendments to the law have addressed this anomaly.
- Empowerment of Conservation Officers to enforce the provisions of the NCL.
- Introduction of EIAs as a requirement for development proposals which will need to be approved and reported to the National Conservation Council.
- The NCL also aims to establish a mechanism to operate the government's existing **Environmental Protection Fund** for its intended purpose of conservation and environmental projects in the Cayman Islands. In 1997, the Cayman Islands government began charging an environmental protection fee against the departure tax paid by travellers leaving the country. The fees collected now amount to CI \$45 million (approximately £34 million). Under the NCL, the Fund would also be able to receive money from grants and donations. Over the past six years the DoE has been able to access a small amount of funds from the existing fund to buy small pieces of land for protection but the fund has otherwise been inaccessible.
- Protected species in the Cayman Islands would be updated by the (draft) National Conservation Law, to include all those currently protected under local legislation, and MEAs to which Cayman is already a signatory. Endemic and some critically endangered local species would also be afforded appropriate protection under this (draft) legislation.

ANNEX 2:

CAYMAN ISLANDS NATIONAL ENVIRONMENTAL STRATEGIES¹

The Cayman Islands has a **Biodiversity Action Plan (BAP)** (see www.DoE.ky), published in 2009. Nineteen Habitat Action Plans and 41 Species Action Plans were developed out of the BAP process. However, these plans have no legal standing until the draft National Conservation Law can be enacted.

The **Cayman Islands Development Plan** is a zoning plan for the territory. However, this plan only covers Grand Cayman and it includes little or no requirement for environmental concerns to be considered in the planning approval process. All past attempts to correct this deficiency in the planning process have proven unsuccessful. For example, all four proposed Conservation Overlays were removed from the last version of the Development Plan. Even a proposal to assign land already owned and protected by the National Trust for the Cayman Islands as 'Conservation Zone' was removed from the final version of the plan. There is also no legislated process for Environmental Impact Assessment (EIA) in the Cayman Islands; any requirement for EIA currently falls to the discretion of the Central Planning Authority. This matter would be addressed by the (draft) National Conservation Law, which prescribes a full mechanism for EIA in the Cayman Islands.

The following information is based on an account supplied to us by the Government of Gibraltar. Additional information was obtained from the following sources:

- Pelembe, T. and Cooper, G. (eds). 2011. *UK Overseas Territories and Crown Dependencies: 2011 Biodiversity Snapshot*. Peterborough, UK: Joint Nature Conservation Committee.
- Cottam, M. (ed.). 2013. *The UK Overseas Territories Biodiversity Strategy – Review of Progress*. UKOTA, Joint Nature Conservation Committee.
- Cottam, M. (ed.). 2013. *Recent Conservation Achievements of UK Overseas Territories and Crown Dependencies and their Contributions to National Aichi Biodiversity Targets (2013)*. Peterborough, UK: Joint Nature Conservation Committee.

Part I: An update on biodiversity status, trends, and threats and implications for human well-being

Q1: Why is biodiversity important for your country?

Gibraltar is a small nation with limited natural resources and area. The British Gibraltar community and its politicians recognise that these natural resources are finite and as such must be protected from further degradation whilst being integrated into the socio-economic fabric of Gibraltar. The diverse natural resources within Gibraltar's EU Protected sites, such as the Gibraltar Nature Reserve, with its unique Barbary macaques and rich biodiversity, alongside the Southern Waters of Gibraltar with its rich marine biodiversity, are not only important natural features, but also an important economic resource which, if managed sustainably, will contribute to biodiversity conservation efforts.

Q2: What major changes have taken place in the status and trends of biodiversity in your country?

Table 1 summarises the status and trends of the main EU-listed Habitats in Gibraltar as determined in two separate classification exercises in 2007 and 2013. These were carried out in-line with the requirements of the EU Habitats Directive.

Table 1. Status of EU listed habitats found in Gibraltar 2007 - 2013

Habitat type	2007 Status	2013 Status	Reason for Change
Reefs	Unfavourable decreasing	Unfavourable stable	There is a genuine change: the overall conservation status improved due to natural or non-natural reasons (management, intervention, etc.)
Vegetated sea cliffs of the Mediterranean coasts with endemic <i>Limonium</i> spp.	Favourable	Favourable	No change
Dunes with <i>Euphorbia terracina</i>	Favourable	Unfavourable stable	There is a genuine change: the overall conservation status deteriorated due to natural or non-natural reasons (management, intervention, etc.)
Malcolmietalia dune grasslands	Unfavourable improving	Unfavourable stable	The change observed is due to more accurate data (e.g. better mapping of distribution) or improved knowledge (e.g. on ecology of species or habitat)
Arborescent matorral with <i>Laurus nobilis</i>	Unfavourable improving	Unfavourable stable	There is a genuine change: the overall conservation status deteriorated due to natural or non-natural reasons (management, intervention, etc.)
Low formations of <i>Euphorbia</i> close to cliffs	Unfavourable improving	Unfavourable stable	There is a genuine change: the overall conservation status deteriorated due to natural or non-natural reasons (management, intervention, etc.)
Calcareous rocky slopes with chasmophytic vegetation	Favourable	Favourable	No change
Caves not open to the public	Favourable	Favourable	No change
Submerged or partially submerged sea caves	Favourable	Unfavourable stable	There is a genuine change: the overall conservation status deteriorated due to natural or non-natural reasons (management, intervention, etc.)
<i>Olea</i> and <i>Ceratonia</i> forests	Favourable	Favourable	No change

Source: Department of the Environment 2013, Article 17 surveillance monitoring report 2007 -2013

Specific assessments of marine biodiversity have additionally been carried out in line with the requirements of the Marine Strategy Framework Directive (MSFD). The Initial Assessment carried out under the MSFD is available online at: <https://www.gibraltar.gov.gi/new/sites/default/files/docs/Marine%20Strategy%20Framework%20Directive%20-%20Initial%20Assessment%20of%20BGTW.pdf>.

The current legal conservation framework can be traced back to the publication of the Nature Protection Act (NPA) in 1991. This legislation deals with the protection of plants and animals in Gibraltar's terrestrial and marine habitats, including those that are rare and endangered. The NPA 1991 also caters for practices, such as fishing, that affect natural communities and their habitats. The NPA 1991 was drafted using the UK Wildlife & Countryside Act (1981), the EU Birds Directive, and early drafts of the EU Habitats Directive as guiding legislation.

Since its publication in 1991, other significant pieces of legislation have been drafted to strengthen conservation and biodiversity protection in Gibraltar, namely;

- The 'Nature Conservation Area (Upper Rock) Designation Order 1993'. More recently the extent of the nature reserve has been extended via the Nature Conservation Area (Extension of the Upper Rock) Designation Order 2011.
- The Marine Nature Reserve Regulations 1995, which came into effect on 1 January 1996, helped lay the foundations for the robust legal protection now afforded to marine species and habitats within British Gibraltar Territorial Waters. The Marine Nature Reserve Regulations 1995 (MNR) are being revised and a new set of regulations are being drafted, namely the Marine Protection Regulations (MPR) which bolster the legislative provisions of the MNR and make provisions for designating Marine Protected Areas and other necessary measures in British Gibraltar Territorial Waters .

More recent steps taken to protect biodiversity include:

- The designation of the Gibraltar Nature Reserve and the Southern Waters of Gibraltar as EU protected sites; these are classified as dual Special Areas of Conservation/Special Protected Areas (SAC/SPAs).
- The Development of the Rock of Gibraltar Management Plan.
- Revision and implementation of the Southern Waters of Gibraltar Management Scheme.
- Drafting legislation for licensing regimes for fishing, diving and other marine activities.
- The revision of Nature Protection Act.
- Marine research carried out for the EU Marine Strategy Framework Directive 2013.
- Continued habitat surveillance and data management in line with the requirements of the Habitats Directive.
- The on-going implementation of wildlife management plans including a Biodiversity Action Plan.

The Southern Waters of Gibraltar Management Scheme 2012 has been drawn up as a framework to enable the Relevant Authorities to carry out their responsibilities and functions in line with the requirements of the Nature Protection Act 1991 and the Marine Strategy Regulations 2011. These legislative provisions aim to protect both the habitats and species for which the Southern Waters of Gibraltar European Marine Site was designated, but extend to the whole of British Gibraltar Territorial Waters.

Following the publication of the 2012 Southern Waters of Gibraltar Management Scheme, H.M. Government of Gibraltar commissioned Dr Chris Tydeman (Chairman of the UK

Overseas Territories Conservation Forum (UKOTCF)) and Mrs Indrani Lutchman (fisheries scientist) to study the available marine data for Gibraltar, to set Gibraltar's marine environment in an international context and make recommendations for the continued conservation of habitats and species in British Gibraltar Territorial Waters. Recommendations were presented to H.M. Government of Gibraltar in the report 'The Management of Marine Living Resources in the Waters of Gibraltar' (available online: https://www.gibraltar.gov.gi/images/stories/PDF/environment/Management_of_marine_living_resources_in_the_waters_around_Gibraltar.pdf).

Q3: What are the main threats to biodiversity?

Main Marine biodiversity threats:

- Shipping lanes
- Marine water pollution & other forms of pollution
- Human intrusions and disturbances
- Professional active fishing
- Purse seining
- Demersal seining
- Diffuse pollution to surface waters via storm overflows or urban run-off
- Illegal net fishing
- Excessive long lining
- Uncontrolled scuba diving
- Uncontrolled spear fishing
- Illegal clam raking.

Main Terrestrial biodiversity threats:

- Discontinuous urbanisation
- Noise nuisance, and noise pollution
- Vandalism
- Introduction of invasive species
- Species composition change (succession)
- Habitat shifting and alteration
- Feral cat population
- Yellow-legged gulls
- Feral pigeons
- Urban development

General Biodiversity threats

Climate change is also regarded as a priority, with active political and stakeholder buy-in. The degree of climate change scepticism remains unclear. Potential climate change implications for temperature, precipitation and sea-level are the main concerns, although it is unclear whether the threats posed by climate change are largely regarded as intractable.

Preliminary climate change modelling and impact assessment undertaken in 2012/13 through the EU's Cities Adapt climate change project, highlighted zones of further research. Gibraltar-specific climate change risk analyses are therefore now being investigated.

In 2008, the Gibraltar climate change programme was published under guidance of the climate change committee steering group. The climate change forum includes representatives of the private and public sector alongside representatives of academia.

Flora

Of the 363 species of vascular plant that occur within the Upper Rock Nature Reserve in a wild state (Linares 2003), 24 species have been introduced from exotic environments.

Many of these species were originally introduced from other parts of the former British Empire. Thus, for example, South African plants (which are native to an environment that is very similar to that of the Mediterranean) stand out. Many of these introduced species pose little or no threat to local flora; they have poor reproductive and dispersal abilities and find it difficult to establish local populations. However, a number of introduced species of plants are to be found on the Upper Rock in a wild state (i.e. with a regularly occurring, self-sustained population). A number of these species pose a very real threat to our local flora.

The 'Nature Conservation Area (Upper Rock Nature Reserve) (Protection and Regulation) Regulations 1993' (L/N 52 of 1993) includes sections dealing with the introduction of fauna and floral species that are not indigenous to the Gibraltar Nature Reserve. Section 5.(1)(h) of L/N 52 of 1993 states that it is illegal to '*introduce any animal or plant which is of a kind which is not ordinarily resident or is not a regular visitor to Gibraltar in a wild state or does not grow in the wild in Gibraltar, as the case may be*'.

The enforcement of legislation continues to be one of the biggest challenges. Educational programmes, alongside public awareness campaigns, are helping inform the general public on local conservation issues of concern. Local NGOs also contribute and continue to drive environmental and biodiversity awareness. Political commitment and corporate awareness are strong throughout Gibraltar.

The implementation of active habitat management within the terrestrial and marine nature Reserves will bolster species diversity and also lead to the enhancement of the tourist product. In an effort to enhance biodiversity protection and increase natural tourist attractions, the Gibraltar Terrestrial SAC has been expanded by 15 per cent since 2012, supported by the requirement that all new developments must comply with the Gibraltar Development Plan and provide a minimum of 5 per cent of total floor area as permanent green areas. However the plan does not stipulate whether this should be done with native or exotic flora.

Q4: What are the impacts of the changes in biodiversity for ecosystem services and the socio-economic and cultural implications of these impacts?

Any significant changes in habitat and species composition of the Gibraltar Nature Reserve and the Southern Waters of Gibraltar Marine Protected Area can have adverse economic, socio-economic and cultural impacts. This is particularly the case where flagship species are affected such as the Barbary Macaque (*Macaca sylvanus*) which plays an important role in the sustainable development of Gibraltar's tourist product.

Part II: The national biodiversity strategy and action plan, its implementation, and the mainstreaming of biodiversity

Q5: What are the biodiversity targets set by your country?

H.M. Government of Gibraltar aims to halt all and any loss of biodiversity within its marine and terrestrial environments as required under the CBD and the Nature Protection Act 1991.

Q6: How has your national biodiversity strategy and action plan been updated to incorporate these targets and to serve as an effective instrument to mainstream biodiversity?

Numerous management plans have been drafted to help ensure that biodiversity targets are met. These include:

- *Gibraltar Nature Reserve Management Plan* (in prep.). To be completed by December 2014.
- *Upper Rock Nature Reserve: a Management and Action Plan*. 2005.
<http://www.gonhs.org/documents/UpperRockNatureReserveManagementActionPlan.pdf>
- *Southern Waters of Gibraltar Management Scheme: EU Natura 2000 Site Dual SAC/SPA*. 2012.
<https://www.gibraltar.gov.gi/new/sites/default/files/docs/Southern%20Waters%20of%20Gibraltar%20Management%20Scheme%202012.pdf>
- *The Management of Marine Living Resources in the Waters around Gibraltar*. 2012.
https://www.gibraltar.gov.gi/images/stories/PDF/environment/Management_of_marine_living_resources_in_the_waters_around_Gibraltar.pdf
- *Department of the Environment. Environmental Action and Management Plan*. 2013.
<https://www.gibraltar.gov.gi/new/sites/default/files/docs/Environmental%20Action%20and%20Management%20Plan%202013.pdf>
- *Biodiversity Action Plan, Gibraltar; Planning for Nature*. 2007.
<http://www.gonhs.org>
<http://www.gonhs.org/documents/BiodiversityActionPlan2006web.pdf>

It should also be noted that arising from the 2003 publication of the *Programme Memorandum for the Overseas Territories Programme*, the Government of Gibraltar agreed to:

- 1) Bring together Government departments, representatives of local industry and commerce, environmental and heritage organisations, the Governor's office, individual environmental champions and other community representatives in a forum to formulate a detailed strategy for action.
- 2) Ensure the restoration and protection of key habitats, species and landscape features through legislation and appropriate management structures and mechanisms, including a protected areas policy, and attempt the control and eradication of invasive species.
- 3) Ensure that environmental considerations are integrated within social and economic planning processes; promote sustainable patterns of production and consumption within the territory.
- 4) Undertake environmental impact assessments before approving major projects and while developing our growth management strategy.
- 5) Commit to open and consultative decision-making on developments and plans which may affect the environment; ensure that environmental impact assessments include consultation with stakeholders.
- 6) Implement effectively obligations under Multilateral Environmental Agreements already extended to Gibraltar and work to the extension of other relevant agreements.
- 7) Review the range, quality and availability of baseline data for natural resources and biodiversity.
- 8) Ensure that legislation and policies reflect the principle that the polluter should pay for prevention or remedies; establish effective monitoring and enforcement mechanisms.

- 9) Encourage teaching within schools to promote the value of our local environment (natural and built) and to explain its role within the regional and global environment.
- 10) Promote publications that spread awareness of the special features of the environment in Gibraltar; promote within the territory the guiding principles set out above.
- 11) Abide by the principles set out in the Rio Declaration on the environment and development and work towards meeting international development targets (now superseded by the Millennium Development Goals) on the environment.

Q7: What actions has your country taken to implement the Convention since the fourth report and what have been the outcomes of these actions?

Gibraltar was not part of the fourth report or any report prior to this. However, implementation of the *Strategic Plan for Biodiversity 2011-2020* (CBD 2010) and its Aichi Biodiversity Targets are covered in detail under Question 10.

Q8: How effectively has biodiversity been mainstreamed into relevant sectoral and cross-sectoral strategies, plans and programmes?

Biodiversity issues were considered as part of the Gibraltar Development Plan (<http://www.gibdevplan.gov.gi/>) and a strategic assessment (which included biodiversity issues) was carried out in 2009 (available from: <http://www.gibdevplan.gov.gi/pdf/environmentalreport.pdf>). This plan is now being reviewed in line with new legislative and management requirements.

Political will does not present any barrier to biodiversity conservation locally. Local politicians take a strong lead and active commitment on conservation issues, and public concerns regarding the environment are taken seriously by politicians, and translated into solid conservation action. Stakeholder involvement in our conservation strategies is very good, and extends beyond planning into active implementation.

Q9. How fully has your national biodiversity strategy and action plan been implemented?

Gibraltar has an adequate biodiversity action plan/conservation strategies, and these plans and strategies are all being gradually implemented. However, enforcement of the existing legislation is, in some instances, inadequate.

Part III: Progress towards the 2020 Aichi Biodiversity Targets and contributions to the relevant 2015 Targets of the Millennium Development Goals

Q10: What progress has been made by your country towards the implementation of the Strategic Plan for Biodiversity 2011-2020 and its Aichi Biodiversity Targets?

GIBRALTAR
Strategic Goal A: Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society
Target 1: AWARENESS
1. Yearly education programmes are run by Department of the Environment throughout all schools and age groups.
2. Quarterly environmental public awareness days held at town centre.

3. Quarterly environmental newsletter publication by Department of the Environment.
4. World Environment Day held yearly and hosted with participation of all schools and parents.
5. Clean-up the World Day is organised locally in conjunction with local NGOs, 100 per cent voluntary public participation.
Target 2: INTEGRATION
1. Gibraltar Biodiversity Action Plan (2005-15).
2. Upper Rock Nature Reserve – a Management and Action Plan (2005-15).
3. Southern Waters of Gibraltar Management Scheme (2012-15).
4. The management of marine living resources in the waters around Gibraltar (Report) 2013.
5. Nature Conservancy Council (comprises five council members who are nominated based on their expertise).
6. Gibraltar Environmental Action and Management Plan.
7. Gibraltar Climate Change Programme.
Target 3: INCENTIVES and SUBSIDIES
1. During 2012 Government of Gibraltar commissioned carbon footprint assessment and review of all government operations, with a view to quantifying and reducing carbon emissions as well as introducing green accounting policy into mainstream reporting.
2. Through the Development and Planning Commission all building developments are assessed on environmental rankings such as energy consumption, impact on biodiversity, emissions and efficiency of building materials used.
3. Air quality monitoring network set up across Gibraltar, with public access to live information via web-browser.
4. Water quality monitoring programmes assess coastal and ground water quality on a monthly basis.
5. Gibraltar-wide educational and infrastructure recycling programme has been rolled out during 2012.
6. The management of marine living resources in the waters around Gibraltar (Report) 2013.
Target 4: SUSTAINABLE PRODUCTION and CONSUMPTION
1. Scoping and feasibility study of renewable energy sources (photovoltaic and solar thermal) are being undertaken by the Gibraltar government for all public building energy requirements.
2. Import duty deduction on electric vehicle imports.
3. 90 per cent of all street cleaning operations are carried out by electric vehicles.
4. New power station to be constructed using best available technologies.
Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use
Target 5: HABITAT LOSS
1. There are two SACs / SPAs within Gibraltar and each has a management plan: (1) UKGIB0001 Rock of Gibraltar – Upper Rock Nature Reserve: Management & Action Plan, and (2) UKGIB0002 Southern Waters of Gibraltar – Southern Waters of Gibraltar Management Scheme. The overall direction is managed by the Department of the Environment and implemented through agents and contracted ecological specialists.
2. GIS terrestrial Habitat mapping project completed May 2013.
3. Protected Areas Strategy mapping project will identify key sites for protection.
4. Legislative requirement for Environmental Impact Assessments and more stringent Appropriate Assessments (in line with the Habitats Directive) of all projects that could impact protected areas.
Target 6: SUSTAINABLE FISHERIES
1. There is currently no commercial fisheries industry based in Gibraltar. However, illegal commercial fishing is known to take place by Spanish fishing fleets from neighbouring areas. This issue is adequately covered in the Southern Waters of Gibraltar Management Scheme and under the report produced by Tydeman & Lutchman (2013) <i>The management of marine living resources in the waters around Gibraltar</i> .
Target 7: SUSTAINABLE AGRICULTURE, AQUACULTURE and FORESTRY (No agriculture, aquaculture or forestry in Gibraltar.)
Target 8: POLLUTION
1. Environmental Action and Management Plan launched 2013, serves as the road map for the implementation of a myriad of green principles aimed at reducing pollution. It establishes general policy goals, identifies specific action points and sets out tentative timeframes for the achievement of these goals. Plan available from https://www.gibraltar.gov.gi/environment/environment#publications

2. Active and rigorous monitoring and enforcement of all marine commercial activities within British Gibraltar territorial waters.
3. Government support and involvement in numerous pollution reduction initiatives such as Clean up the World and World Environment Day.
4. Gibraltar wide environmental education programme has been in operation since 2006.
5. Waste Management Plan 2011 fulfils the requirements of the new EC Waste Framework Directive 2008/98/EC. The Plan provides a framework to enable decisions to be taken for efficient and sustainable waste management of all waste arising in Gibraltar and information on the different waste streams and treatment options including forecasts of waste streams in the future.
Target 9: ALIEN INVASIVE SPECIES
1. Invasive species control programme in place and managed through agents and contracted specialists. Programme also forms part of the MOD's Integrated Rural Management Plan for MOD estates in Gibraltar. The overall direction is managed by Department of the Environment.
2. Protection of endemic vegetation and restoration of natural habitats commenced in 2005 and on-going programme is in operation through contracted specialists.
Target 10: CLIMATE CHANGE
1. Preliminary climate change modelling and impact assessment undertaken in 2012/2013 under EU Cities Adapt climate change project.
2. The Gibraltar climate change programme published under guidance of Climate Change Committee Steering Group.
3. Climate change forum includes representatives of the private and public sector alongside representatives of academia.
4. Scoping and feasibility study underway for Gibraltar, specific climate change risk analysis in conjunction with University of Manchester.
Strategic Goal C: To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity
Target 11: PROTECTED AREAS
1. There are two SACs/SPAs within Gibraltar, each with their own management plan: (1) UKGIB0001 Rock of Gibraltar - Upper Rock Nature Reserve: Management & Action Plan and (2) UKGIB0002 Southern Waters of Gibraltar - Southern Waters of Gibraltar Management Scheme. The overall direction is managed by Department of the Environment and implemented through agents and contracted specialists.
2. National Plans of Action to protect key habitats and species; Southern Waters of Gibraltar - Southern Waters of Gibraltar Management Scheme & entirety of British Gibraltar Territorial Waters covered under Report 'The management of marine living resources in the waters around Gibraltar' 2013.
3. Wildlife (Gibraltar) Ltd have been contracted to monitor terrestrial habitats and species of community interest. The Department of the Environment is leading the process of surveillance monitoring for the Marine SAC. Surveillance monitoring of terrestrial and marine Annex 1 habitats includes: <ul style="list-style-type: none"> • Monitoring of Annex II & IV listed species. • Monitoring of non-EU listed species and endemic species
Target 12: EXTINCTION
1. Invasive species control programme in place and managed through agents and contracted specialists. Integrated Rural Management Plan for MOD estates also covers invasives and non-indigenous species. The overall direction is managed by Department of the Environment. This plan plays a pivotal role in the conservation of the Barbary Partridge (<i>Alectoris barbara</i>) which is under predation pressure from feral cats.
2. <i>Silene tomentosa</i> (Gibraltar Campion) was thought to be extinct by 1992. However it was re-discovered in 1994, when it was found growing in the Upper Rock Nature Reserve. Following this re-discovery, seeds were stored with the Millennium Seed Bank and many specimens are grown annually at the Gibraltar Botanical Gardens. The type of specimen is kept at the Royal Botanic Gardens, Kew in London. <i>Silene tomentosa</i> is currently found growing wild only on the rocky outcrops of the Rock of Gibraltar where it is extremely rare.
Target 13: GENETIC DIVERSITY (No cultivated plants or domestic animals with genetic diversity concerns in Gibraltar.)

Strategic Goal D:
Enhance the benefits to all from biodiversity and ecosystem services
Target 14: SAFEGUARDING ECOSYSTEM SERVICES
1. Southern Waters of Gibraltar Management Scheme (2012-15).
2. The management of marine living resources in the waters around Gibraltar (Report) 2013.
3. Gibraltar fully complies with the requirements of the EU Water Framework and Marine Strategy Framework Directives. These ensure the protection of coastal ecology and water quality, unique and valuable habitats, drinking water resources and bathing waters. There is no agriculture or forestry in Gibraltar.
4. Environmental Action and Management Plan launched 2013, serves as the road map for the implementation of the Government's key green principles. It establishes general policy goals, identifies specific action points and sets out tentative timeframes for the achievement of these goals.
5. Active and rigorous monitoring and enforcement of all marine commercial activities within British Gibraltar territorial waters.
Target 15: CARBON STOCKS
1. There is no deforestation, wetland drainage or other types of habitat change that could have a significant impact on carbon stocks in Gibraltar. A comprehensive urban tree planting scheme was launched by the Department of the Environment. To date, over 300 trees have been planted in urban areas since 2012. Another 400 trees are due to be planted in Autumn 2013.
Target 16: NAGOYA PROTOCOL
Strategic Goal E:
Enhance implementation through participatory planning, knowledge management and capacity building
Target 17: NATIONAL BIODIVERSITY ACTION PLAN
1. Gibraltar Biodiversity Action Plan (2005-15).
2. Upper Rock Nature Reserve – a management and Action Plan (2005-15).
3. Southern Waters of Gibraltar Management Scheme (2012-15).
4. The management of marine living resources in the waters around Gibraltar (Report) 2013.
Target 18: TRADITIONAL KNOWLEDGE and USE
Target 19: INFORMATION SHARING
1. Environmental Report is published annually by the Department of the Environment and can be downloaded as PDF documents from the Department of the Environment website.
2. Under EU Directive 2007/2/EC – Gibraltar has successfully converted all spatial, geographical and environmental data into GIS format. These are scheduled for publication in 2013 in line with Directive deadlines.
3. All air quality and bathing water quality research and findings are publicly available through web-browser application access, as well as being published on a yearly basis in the annual environmental report.
5. All Department of the Environment newsletters can be downloaded as PDF documents from the Department of the Environment website.
6. 'Nature News' and 'Gibraltar Birds Reports' can be downloaded from the GONHS website.
Target 20: FINANCIAL SUPPORT FOR IMPLEMENTATION of STRATEGIC PLAN FOR BIODIVERSITY
1. Limited external funding available currently. Most projects are funded locally by the Government of Gibraltar. Further potential funding sources will be sought in new round of Life+ funding during 2014.

Q11: What has been the contribution of actions to implement the Convention towards the achievement of the relevant 2015 targets of the Millennium Development Goals in your country?

Actions taken in the numerous plans highlighted as part of this report are consistent with the relevant MDG namely MDG 7 'ensuring environmental sustainability'. Fortunately, there are no issues with HIV/aids, extreme poverty, etc, in Gibraltar.

Q12: What lessons have been learned from the implementation of the Convention in your country?

Further research and funding is required to better understand some of the observed declines in biodiversity. In other areas, there is a clear conflict between the aims of the Convention and economic drivers (e.g. fisheries) and this will require stricter measures being included as part of the CBD.

The following information is based on an account supplied to us by the St Helena Government. Additional information was obtained from the following sources:

- Pelembe, T. and Cooper, G. (eds). 2011. *UK Overseas Territories and Crown Dependencies: 2011 Biodiversity Snapshot*. Peterborough, UK: Joint Nature Conservation Committee
- Cottam, M. (ed.). 2013. *The UK Overseas Territories Biodiversity Strategy – Review of Progress*. UKOTA, Joint Nature Conservation Committee.
- Cottam, M. (ed.) 2013. *Recent Conservation Achievements of UK Overseas Territories and Crown Dependencies and their Contributions to National Aichi Biodiversity Targets (2013)*. Peterborough, UK: Joint Nature Conservation Committee.

Part I: An update on biodiversity status, trends, and threats and implications for human well-being

Q1: Why is biodiversity important for your country?

St Helena has a high level of endemism, which defines its natural environment and is our greatest asset. The island's endemic flora consists of approximately 45 flowering plants (Lambdon 2012) and ferns and 26 bryophytes (mosses, liverworts and hornworts) (Aptroot 2012). The lichen flora is highly diverse with approximately 223 species occurring on the island, this includes nine endemic species.

Most of our endemic plant species and our endemic Wirebird are endangered, with some species having reached critical population levels. The degradation of their associated habitats has played a major role in this. In order to conserve these species more resources are needed to be put into species conservation. Without extra resources there is a real risk of species being pushed into bottlenecks that will require further resources to rescue.

St Helena has an exceptional diverse invertebrate fauna with over 400 of the 1000+ invertebrates being endemic. The most notorious, the endemic giant earwig *Labidura herculeana* and ground beetle *Aplothorax burchelli*, are thought to have been driven to extinction through destruction of habitat and human interference.

St Helena has only one endemic land bird species. This has become the island's national bird and is the critically endangered St Helena plover, or Wirebird, *Charadrius sanctaehelena*. When the island was discovered there were possibly between five and seven endemic bird species, which became extinct through the introduction of predators such as cats and rats.

There is a rich marine fauna and flora around St Helena; however several of the invertebrate groups have been poorly studied to date. There are eight species of fish endemic to St Helena, and a further 15 species which are endemic to St Helena and Ascension. There are also several endemic marine invertebrates including molluscs, crustaceans and sponges; and we are still in the process of discovering new species. With the potential large increase in tourism with the completion of the airport it is vital to protect the relatively pristine marine environment as an attraction for visitors to enjoy into the future.

Q2: What major changes have taken place in the status and trends of biodiversity in your country?

If current trends continue, extinction (functional or absolute) of some St Helena species is likely to occur by 2020. However, extinction is an ever-present threat and the lack of resources in conservation is probably going to exacerbate this threat. This is a serious concern to conservation on the island.

Species	IUCN status	In the wild
Redwood	Extinct in the wild	0
St Helena Olive	Extinct	0
Rosemary	Critically endangered	Declining
Large bellflower	Critically endangered	<30
Ebony	Critically endangered	5
False gumwood	Critically endangered	7
Bastard gumwood	Critically endangered	1
She cabbage	Extinct in the wild	0, Osbournes trees died
He cabbage	Critically endangered	<40
Whitewood ♂ + ♀	Endangered	<50
Dogwood ♂ + ♀	Endangered	<50
Diana's peak bogmoss	Critically endangered	Area smaller than a sofa
Spiky yellow woodlouse	Critically endangered	Area smaller than room
Golden sail spider	Endangered or CE	Unsure

Q3: What are the main threats to biodiversity?

Historic impacts

Before man's arrival in 1502, St Helena was a heavily wooded island. However, with overgrazing, deforestation for timber and fuel, alien plant introduction and clearance for cultivations, plantations and pasture, man and his animals ecologically transformed the island. This resulted in the disappearance of the island's original native vegetation zones and significant loss of native biodiversity (Cronk 1989; Ashmole & Ashmole 2000). Less than 1 per cent of the island is now covered in native habitat.

The island's native flora, from the species tolerant of arid sea cliffs to those of wet misty cloud forest habitat, have been pushed to their limits and now exist in drastically reduced, highly fragmented and threatened habitat. We have some knowledge of the island's more conspicuous habitats and ecosystems but much remains unknown about the original ecosystems which existed at middle altitudes and have now almost completely vanished. We also know little about the habitats of smaller organisms such as infaunal communities of marine and coastal soft sediments.

Endemic Species and Habitats at Critical levels

Most of our endemic plant species and our endemic Wirebird are endangered, with some species having reached critical population levels. The degradation of their associated habitats has played a major role in this. In order to save these species more resources are needed to be put into species conservation.

Commercial fisheries development

One of the key areas for development with the aim of making St Helena economically self-sufficient is development of commercial fisheries. Currently the fishing fleet is a small artisanal pole and line inshore fleet with catches regulated through ICCAT. Expansion of the fishery, including targeting further offshore and using different fishing methods will need to be carefully regulated to ensure it is managed sustainably and bycatch levels are kept to a minimum, and it will be necessary to ensure the resources (both equipment and personnel) are available to conduct the fisheries research.

Invasive Species

St Helena has a wide range of invasive species (both plants and animals) which encroach on our endemic species and out-compete them for resources. The EU-funded South Atlantic Invasive Species project, completed in 2009, has helped to increase the island understanding and capacity to reduce the impacts of invasive species, but it is now left to St Helena Government to take it further, and there are financial and (human) capacity constraints

Unfortunately, this good work has not been translated into practical conservation work. A major reason for this is a lack of funding. With core funding being inadequate and staff overstretched, St Helena Conservation Department has become increasingly dependent on seeking external funding from programmes such as Darwin Plus. These funding bids are competitive and there is little guarantee they will be successful. Moreover, the funding pots themselves could be reduced or stopped at short notice. High reliance on these funding streams offers an uncertain future.

In St Helena, satisfactory response to the impacts of Alien Invasive Species (IAS) will likely remain beyond our capacity for the foreseeable future. Whilst biosecurity at the point of entry is well managed, any problem species that slips through the safety nets is likely to be picked up only when it becomes a significant issue.

Climate Change

At present the extent to which St Helena's natural environment will be affected by climate change is uncertain. It would be beneficial for the island to assess the biological and ecological implications of climate change on native biota and ecosystems.

Tourism

At the moment the impact of tourism on St Helena's environment is minimal. However, as the tourism industry develops on the island, which will be much easier with air access, we will need to put in place measures to ensure its protection. Carrying capacity analysis of key sites will need to be conducted (e.g. the Peaks National Park National Conservation Area (NCA) could be severely degraded by increased and regular footfall). Under present staffing it would be difficult to restrict access to tourists; increased dive tourism, if not properly regulated, could result in damage to fragile species or habitats.

The Land Development Control Plan 2012 policies for tourism are explicitly geared to the policies for the three planning zones of Green Heartland, Coastal Zone and Intermediate Zone. Thus, whilst the overarching policy for tourism growth is to support it as the basis of the economic development of the island, provided it is sustainable, the goal for the Green Heartland is expressed in the primary policy: "There will be a presumption in favour of retaining the undeveloped nature of the Green Heartland and its natural ecology...." and the implementation policies for the Green Heartland follow through on that presumption. Similarly, in the Coastal Zone "There will be a presumption in favour of retaining the natural appearance and ecology of the Coastal Zone....." and again the implementation policies follow through on that presumption. Within the Land Development Control Plan also lies the

designation of the 23 National Conservation Areas, of which the National Parks are three, and it is the management plans for those that will prevent damage from increased footfall.

Air Access

Prosperous Bay Plain and specifically the Central Basin are unique desert environments that have a high diversity of rare endemic invertebrates inhabiting the area as well as being one of the main breeding sites for the endemic and critically endangered Wirebird.

A full Environmental Impact Assessment (EIA) was done (against the reference design) for the airport project and this is available at:

<http://www.sainthelenaaccess.com/application/documents/Environmental-Statement/>.

Through the EIA process, ecologically sensitive areas were identified and as far as possible were avoided at the detailed design stage. Where avoidance is not possible mitigation has been put in place to minimize negative impacts.

The EIA process is on-going throughout the design and build phase of the airport project and environmental issues are continuously assessed and considered alongside technical issues.

Commercial Development

It is probable that with air access and increased tourism potential inward investment will increase which will lead to increased commercial development and pressure on natural resources that are highly likely to impact on the environment in some way. Development of the island is currently controlled by the Land Development Control Plan 2012 (see Tourism section above). The planning regime that has been established is development friendly in so far as it is transparent and enabling, but it is regulated by Land Development Control Plan 2012 policies that are conservation orientated, by recognising that the key asset of the island is its natural and built heritage. The Land Development Control Plan was the subject of external Strategic Environmental and Social Assessment by consultants from Malta and their recommendations were included in the adopted policies.

Resources and Funding

This is a major issue facing the environmental sector on St Helena. At present, Overseas Territories are ineligible for many international funds, including the global environment facility (GEF) – the key funding mechanism for the Convention on Biological Diversity. Many of the European funds available to metropolitan UK are not available to the Overseas Territories. Whilst there are limited funds to tackle environmental issues there are also limited resources on island to carry out conservation work. Due to the island being part of the UK it limits the amount of potential funding opportunities that can be applied for.

The UK's Department for Environment, Food & Rural Affairs (Defra) has created a funding pot specifically for UKOTs, Darwin Plus, which St Helena organisations have successfully applied for. The problem with this type of funding is that it can be hard to sustain once the project cycle has finished. Government budget cuts on-island also contribute to a lack of resources within the environmental sector.

Q4: What are the impacts of the changes in biodiversity for ecosystem services and the socio-economic and cultural implications of these impacts?

The residents on St Helena are mainly employed by the government and through the commercial sector. St Helena has a high import dependency and relies heavily on financial aid, therefore most income is sourced through UK Aid, and this includes a shipping subsidy and development aid. The only significant export from the island is fish.

St Helena has focussed on nature conservation over the last 20 years, resulting in a present-day situation where around 40 people have either full-time or part-time nature conservation jobs. Most of this focus has been on endemic plant species and habitat restoration. There are a number of good success stories, such as the award-winning Millennium Forest. With the island in a period of change following the beginning of an airport construction project and a subsequent drive to develop a more self-sufficient economy, robust conservation frameworks need to be established. A road map for these is built into the National Environmental Management Plan, which includes Management Plans for the 14 National Conservation Areas that are primarily concerned with nature conservation. A Marine Management Plan is also being drafted for the island. A number of steps are being taken to address some of the gaps identified above.

The success of the National Conservation Areas is very much dependent on resources.

Optional question: What are possible future changes for biodiversity and their impacts?

This is dependent on how conservation is regarded by those that divide the money between the directorates and by the UK government. Presently, poor funding suggests conservation is a low priority. If this continues and the resources are cut in future budgets, as will happen for 2014–15, the changes for conservation and biodiversity will be negative.

Part II: The national biodiversity strategy and action plan, its implementation, and the mainstreaming of biodiversity

Q5: What are the biodiversity targets set by your country?

One of St Helena's National Goals is effective management of the environment. Our National Environmental Management Plan (NEMP) was published in September 2012 to facilitate this. The NEMP is a 10-year plan to ensure effective environmental management on St Helena. Objective D of the NEMP deals specifically with biodiversity: "Safeguard St Helena's environment, both terrestrial and marine, for future generations through effective environmental management including through improving the status of biodiversity by safeguarding ecosystems, species and genetic diversity."

We are also instilling the principles of the Aichi Biodiversity Targets into the NCA management plan process.

Q6: How has your national biodiversity strategy and action plan been updated to incorporate these targets and to serve as an effective instrument to mainstream biodiversity?

Objective C of the NEMP "Address the underlying causes of environmental degradation by mainstreaming environment across government and society".

Q7: What actions has your country taken to implement the Convention since the fourth report and what have been the outcomes of these actions?

Implementation of the *Strategic Plan for Biodiversity 2011-2020* (CBD 2010) and its Aichi Biodiversity Targets are covered in detail under Question 10.

There have been a number of externally funded environmental projects carried out on St Helena over the last five years. These include the establishment of monitoring programmes for seabirds, turtles, cetaceans and grouper; endemic plant propagation and species and habitat conservation; Wirebird conservation and establishing an environmental information system for St Helena.

Case Study: Enabling the people of St Helena to conserve the St Helena Wirebird (April 2006 – June 2007):

The project undertook research to better understand the Wirebird's ecology and assessed the extent of threats to this species and identified and tested solutions to address these.

Main outcomes: The culmination of the project works was a Species Action Plan for the Wirebird.

Other recent St Helena environmental projects:

Date	Project Title	Funder	Project Description
Dec 2006 – Dec 2009	Increasing regional capacity to reduce the impacts of invasive species on the South Atlantic UKOTs	European Union	Establishment of an effective management structure for a regionally coordinated invasive alien species programme. Assessment of existing invasive species and prioritisation of recommendation for action. Strengthening of local operational capacity to control the introduction and spread of invasive alien species. Key invasive species either controlled and/or eradicated effectively. Increase in awareness of the benefits of controlling and/or eradication of invasive alien species through a range of activities. Integration of control and management of invasive species into development plans, policies and legislation.
1 Apr 2007 – 30 Nov 2010	Conserving St Helena's Gumwoods	OTEP	To provide much needed investment for the conservation of the endemic Gumwood at Peak Dale and the Millennium Forest – to provide infrastructure and organisational management at these two key Gumwood sites to improve education and awareness
May 2008 – Oct 2010	Supporting critical species recovery and horticultural needs on St Helena	OTEP	Implementation of a capacity building programme to support critical species recovery and horticultural needs on St Helena. This will include specialist technical input from RBG Kew, recruitment of staff, upgrading of the nursery at the Agriculture and Natural Resources Department, and a skills development programme through training to address medium- to long-term species conservation and plant production requirements.
Apr 2008 – Sept 2010	Heart Shaped Waterfall – public access and amenities	OTEP	Clearance and control of invasives from the approach to the heart-shaped waterfall, cultivation of endemic plants, provision of information boards, ultimately creating access to one of St Helena's foremost geological features and landmarks of natural beauty.

Aug 2008 – Sept 2011	Mitigation for the impacts on the Wirebird population on St Helena	DFID (Air Access Mitigation Project)	Improved licensing system developed and implemented for crown pastures, suitable sites for restoration as potential Wirebird habitat identified and restored, significant progress made towards protecting from future development those sites restored and managed as Wirebird habitat; awareness and appreciation of the Wirebird is raised locally and internationally
Jul 2009 – Apr 2011	Illustrated field guides to the flora of St Helena	OTEP	Production of an illustrated higher plants guidebook and an illustrated lower plants guidebook. Promotion of the guidebook through local media and use of the guides to identify species
Apr 2010 – Mar 2011	Bastard Gumwood Recovery Project	JNCC	Save the Bastard Gumwood from the brink of extinction through mass production of trees, restoration of Bastard Gumwood forests and production of a species recovery plan.
Apr 2010 – Mar 2011	Pheasant Tail fern control programme	JNCC	Clearance of Pheasant Tail fern from priority areas in the Peaks National Park, development of effective control techniques and implementation of public awareness programme
Jun 2010- May 2011	St Helena Gumwood project	Flagship Species Fund (DEFRA/ Flora and Fauna International)	To increase species diversity and recreate a functional ecosystem in the Millennium Forest, to improve nursery capacity, to increase community engagement in the Millennium Forest planting project
Apr 2010 – Mar 2011	Laying the foundations for invertebrate conservation on St Helena	Darwin Initiative	To ensure that the requirements of invertebrates are integrated into the ongoing habitat-based conservation effort on St Helena through the following: Existing baseline knowledge of invertebrates collated and reviewed. Local training needs are identified. Priority sites for surveying identified. Information requirements at known hotspots of endemism identified. Opportunities to integrate invertebrates into conservation management and planning policies identified. Invertebrate and biodiversity education requirements identified and a draft action plan developed. Optimal invertebrate sampling techniques trialled and agreed. Taxonomic expertise and resource requirements for the processing of survey samples assessed.
Oct 2010 – Sept 2013	Increasing local capacity to conserve St Helena's threatened native biodiversity	Darwin Initiative	Delivery of a training programme to increase local capacity and skill base in the restoration and sustainable management of natural resources. Restoration of native habitats at High peak and Blue Point. Delivery of an education programme to increase awareness and appreciation of St Helena's natural resources. Research information on the importance and potential socio-economic value of St Helena's natural resources produced and disseminated.

April 2012 until April 2013: Rare Plant Census: Darwin Plus: complete census of all endemic and some important native plant species, from this undertake IUCN Red List assessments for those that have not yet been done and re-assess those already done.

September 2013 – September 2014: Threatened fern propagation project: JNCC: equip a fern propagation unit with tools for long-term fern propagation; develop successful propagation methods for 11 globally threatened ferns and produce protocol sheets for each species; train local conservation staff in experimental design, implementation and assessment of results.

November 2012– November 2014: Marine Biodiversity and Mapping Project: Darwin funded. Create species and habitat inventories for the island including maps of locations; train local staff in identification of species, surveys and appropriate scientific hardware and software; generate a Marine Management Plan for St Helena including long-term monitoring and protected areas.

Q8: How effectively has biodiversity been mainstreamed into relevant sectoral and cross-sectoral strategies, plans and programmes?

St Helena has not yet taken part in the current JNCC Environmental Mainstreaming Initiative, but is keen to do so. Political will is a significant barrier to biodiversity conservation locally. Local politicians tend not to take a strong lead on conservation issues. Stakeholder involvement in our conservation strategies is generally good, and extends beyond planning into active implementation. The local public generally regard biodiversity conservation as a serious issue, and have certainly become increasingly receptive to, and increasingly participate in, initiatives which benefit the environment.

The island's Sustainable Development Plan gives 'effective management of the environment' as one of the three national goals. Out of this the island's first National Environmental Management Plan was formed, which incorporates biodiversity and environmental mainstreaming in its targets.

Q9. How fully has your national biodiversity strategy and action plan been implemented?

National environmental strategies:

Again, our NEMP (see Question 5 above), also see table showing delivery of NEMP targets in Annex 2.

National environmental legislation:

St Helena has inadequate conservation legislation, and enforcement of existing legislation is also inadequate. Local Environmental legislation is rather fragmented with different aspects incorporated in at least 17 different ordinances (Annex 1). However, as part of the proposed revised institutional arrangements for Environmental Management on St Helena a new and comprehensive Environmental Management Ordinance is proposed.

New overarching legislation which is currently being drafted will supersede all the fragments of environmental legislation, and will set in place license and permitting systems for better enforcement.

The NCA plans incorporate biodiversity action plans; the (draft) native and endemic plant propagation, collection and distribution policy enables commercial growing of selected

species both for habitat restoration purposes and to increase local awareness and enthusiasm of native flora.

Marine biodiversity and mapping project funded by Darwin is providing baseline surveys to inform marine management plans.

Part III: Progress towards the 2020 Aichi Biodiversity Targets and contributions to the relevant 2015 Targets of the Millennium Development Goals

Q10: What progress has been made by your country towards the implementation of the Strategic Plan for Biodiversity 2011-2020 and its Aichi Biodiversity Targets?

ST HELENA
RESPONDENTS: St. Helena Government
Strategic Goal A: Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society
Target 1: AWARENESS
1. Annual environment week.
2. Annual marine awareness week.
3. Monthly newsletters.
4. Quarterly newsletters.
5. Communications strategy.
6. St Helena Science seminar
7. 'Nature conservation, St Helena' Facebook page
8. Species/ nature conservation pages on Wiki Village
Target 2: INTEGRATION
1. Effective management of the environment one of 3 national goals in the islands sustainable development plan.
2. Environment a key component of the National Economic development plan
3. First National environmental management plan created integrates biodiversity.
4. Environmental impact assessment built into the planning process.
5. Environmental assessments of policies and decisions required.
Target 3: INCENTIVES and SUBSIDIES
1. Import tax incentives for green products being considered.
Target 4: SUSTAINABLE PRODUCTION and CONSUMPTION
1. Green guidelines for all business sectors developed (will be signed off 2012/13).
Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use
Target 5: HABITAT LOSS
1. Network of 14 'natural' National Conservation Areas designated.
2. Wirebird species action plans formalised.
3. Environmental legal framework for species and habitat protection to be strengthened (new law being drafted).
4. EIA built into the planning process.
5. New government department created to manage the environment.
Target 6: SUSTAINABLE FISHERIES
1. Sustainable fisheries plan being developed.
2. Fisheries licenses being revisited.
Target 7: SUSTAINABLE AGRICULTURE, AQUACULTURE and FORESTRY
1. New agricultural policy developed.
Target 8: POLLUTION
1. Pollution incident reporting system set up.
2. Pollution incidents being followed up and addressed.

3. Pollution policy being developed.
4. Legislation for pollution in draft new environment law.
5. Monitoring pollution - funding being sought through this round of Darwin.
Target 9: ALIEN INVASIVE SPECIES
1. IAS regional strategy developed.
2. Biosecurity being strengthened and developed through new biosecurity policy.
3. IAS control being implemented in key restoration and research areas.
Target 10: CLIMATE CHANGE
1. Climate change policy being developed.
Strategic Goal C: To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity
Target 11: PROTECTED AREAS
1. 14 NCA boundaries delineated in 2012/13 area to be determined, but likely to be 17 per cent).
2. Marine MPA to be developed in the next year - baseline survey work for this being carried out.
Target 12: EXTINCTION
1. Red-listing project underway to assess species conservation status (Plants).
2. Invertebrate project underway to provide baseline for inverts.
3. Marine baseline survey underway.
Target 13: GENETIC DIVERSITY
Strategic Goal D: Enhance the benefits to all from biodiversity and ecosystem services
Target 14: SAFEGUARDING ECOSYSTEM SERVICES
1. Being developed through the NCA designation and management planning process.
Target 15: CARBON STOCKS
1. Being developed through Darwin community forest project.
Target 16: NAGOYA PROTOCOL
Strategic Goal E: Enhance implementation through participatory planning, knowledge management and capacity building
Target 17: NATIONAL BIODIVERSITY ACTION PLAN
1. National Environmental Management Plan signed off 2012/13.
Target 18: TRADITIONAL KNOWLEDGE and USE
1. Research permitting system created (needs to be formally approved).
2. Local knowledge projects instigated (marine local knowledge).
Target 19: INFORMATION SHARING
1. Information being made available online - SHG website.
2. St. Helena biological records database created.
Target 20: FINANCIAL SUPPORT FOR IMPLEMENTATION of STRATEGIC PLAN FOR BIODIVERSITY
1. Darwin funding sourced by Government and NGOs.
2. Government funds division and provides some funding to NGOs.

Proportion of terrestrial and marine areas protected

Under the Land Control Development Plan, 23 National Conservation Areas were designated – 14 for their natural features. These 14 'natural' NCAs equate to approximately 38 per cent of the island protected by this network. These NCAs include the Islands Nature Reserve, which are offshore islands used for breeding etc. by seabirds.

Marine biodiversity and mapping project, funded by Darwin, is conducting baseline surveys to inform creation of a marine protected area.

Proportion of species threatened with extinction

St Helena has only one endemic land bird species. This has become the island's National Bird and is the *Critically endangered* St Helena plover or 'Wirebird' *Charadrius sanctaehelenae*. When the island was discovered there were possibly between five and seven endemic bird species which became extinct through the introduction of predators such as cats and rats.

Rare plant census project underway to update existing Red List assessments, and inform new assessments for species not yet assessed. Of the 45 non-extinct endemic flowering plants and ferns less than half have been formally assessed.

The marine flora and fauna census is underway, most species have not been formally assessed.

See also table from Question 2 (species threatened with immediate extinction.)

Summary of the 2008 IUCN red listed species for St. Helena, Ascension and Tristan da Cunha

Critically endangered	Endangered	Vulnerable	Near-Threatened	Extinct(Extinct in the wild)	Lower risk/conservation dependent	Data deficient
18	15	27	10	38	1	21

Q11: What has been the contribution of actions to implement the Convention towards the achievement of the relevant 2015 targets of the Millennium Development Goals in your country?

Most relevant MDGs to this report are:

Target 7.A: *Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources.*

Target 7.B: *Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss.*

ANNEX 1:

ST HELENA BIODIVERSITY-RELATED NATIONAL LEGISLATION

See also Question 9.

St Helena's environmental legislation is rather fragmented with different aspects incorporated in various Ordinances these include (in alphabetical order) the following:

Animals' Trespass Ordinance: An ordinance to provide for the prevention of trespass by animals which includes prevention of dogs hounding other animals, earmarking cattle, sheep, donkeys, goats and swine. Shooting and impounding of trespassing animals, and penalties incurred for trespassing.

The Agriculture and Livestock Improvement Ordinance: An ordinance to make for the provision for the preservation and protection of the soil and for the control and improvement of crop production and livestock and the marketing thereof. It includes land usage and protection rules, rules on reporting, clearance and eradication of noxious weeds, Phormium crop protection and soil conservation rules. Rodent control and destruction rules, livestock improvement and donkey registration rules.

The Bees Ordinance: An ordinance for the control of pests and disease affecting bees which includes regulations of the importation of bees and associated products.

The Birds Protection Ordinance, 1996: An ordinance to protect game birds (partridges and pheasants) and non-indigenous bird species (excluding domestic birds).

The Conservation and Management of Fishery Resources Ordinance, 2003: An ordinance to provide for the implementation of the Convention on the Conservation and Management of fishery Resources in the South-East Atlantic Ocean.

The Endangered Species Protection Ordinance, 2003: An ordinance to provide for the protection of endangered, endemic and indigenous species of animals and plants and to regulate the trade in endangered species.

The Fishery Limits Ordinance (revised edition, as at 2001): An ordinance to define the fishery limits of St Helena and to make provision for the regulation of fishing within those limits and for other matters connected therewith.

The Forestry Ordinance (revised edition, as at 2001): An ordinance to provide for the constitution, management and protection of forests, for the preservation of tree growth and of indigenous trees and plants and for other purposes connected therewith.

The Harbours Ordinance (revised edition, as at 2001): An ordinance to provide for the regulation, management and control of harbours in St Helena, and of vessels therein, and for matters connected therewith or incidental thereto. Including regulation of removal of sand, landing of fish, discharging missiles at birds or wild animals, and removal of projections.

The High Seas Fishing Ordinance, 2001: An ordinance to make provision for the implementation of the Agreement to Promote Compliance with international Conservation and Management Measures by Fishing Vessels on the High Seas adopted by the Conference of the Food and Agricultural Organisation of the United Nations on the twenty fourth day of November 1993 and the Agreements for the implementation of the provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation of Straddling Fish Stocks and Highly Migratory Fish Stocks.

The Land Planning and Development Control Ordinance (2008): This is being superseded by the Land Planning and Development Control Ordinance 2013, partially implemented and to be fully in force from 1st December 2013. It stiffens the link between planning decisions and environmental impact and it places a duty on the Land Development Control Authority to make planning decisions in accordance with the adopted policies of the Land Development Control Plan. It also demands that planning decisions and appeal decisions are made in public. Critically, it also makes it the duty of all officers of SHG in planning any project of public investment to do so in accordance with the adopted policies unless there are planning considerations to the contrary. Thus for the first time the island has a policy-led planning system enforced on the private and public sectors alike.

The Merchant Shipping (Oil Pollution) (Overseas Territories) (Amendment) Order 1981 (Commencement) Order 1995: This Order brings into operation in St Helena and its Dependencies, Parts I and II of the schedule to the Merchant Shipping (Oil Pollution) (Overseas Territories) (Amendment) Order 1981. The order gives effect to the Protocol of 19.11.1976 to the International Convention on Civil Liability for Oil Pollution Damage of 29.11.1969 and the protocol of the 19.11.1976 to the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage of 18.12.1976.

The National Parks Ordinance, 2003: This Ordinance has not yet been brought into force but provides powers to permit the establishment of parks, nature reserves, sanctuaries and areas of historical interest, and generally for the conservation of the natural environment and ecology of St Helena and for purposes connected therewith.

Plant Protection Ordinance (revised edition, as at 2001): An ordinance for the protection of plants in St Helena including regulations on importation and exportation of plants and plant materials, prevention of plant diseases and seed regulations.

The Spear Guns Control Order, 2006: An ordinance to control the use of spear guns.

The St Helena National Trust Ordinance, 2001: An ordinance to establish and make provision for the St Helena National Trust.

The Whale Fisheries Ordinance, 1912: An ordinance to regulate Whale Fisheries in St Helena.

ANNEX 2:

Delivery of St Helena National Environment Management Plan targets 2012/13

Target No.	Target	End of year report May 2013	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
7	Links to social development										
7.1	Green guidelines for homes created and implemented by March 2015	Not due									
7.2	Footpaths maintained at least once a year	ESH issued SHNT with footpath maintenance contract									
7.3	Francis Plain sports field regularly maintained	Regular maintenance scheme in place									
7.4	Green spaces in districts maintained at least once a year	Fed into the development of Half-Tree Hollow CDA masterplan development									
7.5	Areas for off-road biking and driving and mountain biking formalised by 2016	Not due									
7.6	Healthy living public awareness campaign run annually	No update									
7.7	10 year agricultural production plan produced and implemented by 2013	Agricultural policy developed.									
7.8	2 new green spaces in Half Tree Hollow	see 7.4									
7.9	Included in the development brief of the Comprehensive Development Area	see 7.4									
7.10	Community garden – fresh food grown for the community by the Community	not yet due									
8	Links to economic growth goal										
8.1	Environmental review of the tourism strategy incorporated into an updated tourism strategy by March 2013	Review done but not incorporated.									

Target No.	Target	End of year report May 2013	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
8.2	Green Guidelines and best practice for large and small businesses produced by March 2013	Green guidelines drafted but not yet formally approved									
8.3	Green rating/certification system for businesses created and implemented by 2016	not yet due									
8.4	Green guidelines for procurement created and implemented by March 2015	not yet due									
8.5	Greening your business training programmes held every six months	will be initiated after 8.2 formalised									
9	People										
9.1	Create a communications and stakeholder engagement strategy by March 2013	completed									
9.2	Implement communications and stakeholder engagement strategy 2013-2022	ongoing - implemented through 2012/13									
10	Mainstreaming environment										
10.1	Environmental mainstreaming policy framework adopted by SHG by April 2013	Behind schedule									
10.2	Environmental decision-making framework adopted by SHG by April 2013	Behind schedule									
10.3	Environmental mainstreaming policy framework adopted by ESH, private sector & civil society by December 2014	not yet due									
10.4	Environmental decision-making framework adopted by ESH, Private Sector & Civil Society by December 2014	not yet due									

Target No.	Target	End of year report May 2013	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
11	Legislation										
11.1	Environmental legislation enacted and legislative framework adopted by SHG by December 2013	Preparatory work for environment law completed									
12	Airport										
12.1	Coordinate SHG environmental responsibilities under the airport project	Ongoing									
13	Environmental risk and disaster management										
13.1	Mainstream risk assessment of natural hazards by December 2014	not yet due									
14	Climate change										
14.1	Climate change policy created by December 2014	not yet due									
14.2	Develop data set and collect data relevant to climate change research. Work with the UK Meteorological Office and other international organisations to strengthen climate change predictions for St. Helena by March 2014	not yet due									
14.3	Energy generation strategy implemented	not yet due									
14.4	Environmental review of the island transport plan developed in 2012	not implemented									
15	Land and Land Use										
15.1	Continue to implement the requirements of the land development control plan for all planning applications	ongoing - implemented as required									

Target No.	Target	End of year report May 2013	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
15.2	Develop National Conservation Area Management Plans: Diana's Peak National Park by July 2012, Sandy Bay National Park by December 2012, Broadbottom Important Wirebird Area and Deadwood Plain Important Wirebird Area by December 2013. All NCA Natural Heritage management plans developed by 2016	behind schedule									
15.3	Implement prioritised species action plans for IUCN critically endangered species by 2015 and create new ones where required	not yet due									
15.4	Crown estates strategy to include provision for making best use of existing land and buildings	dd									
15.5	An environmental review of draft agricultural policy is undertaken	EMD inputted into agricultural policy development									
15.6	Create the solid waste management strategy and implement accompanying plan by December 2013	not yet due									
15.7	Implement priority areas of the invasive species strategy and develop biosecurity strategy by 2013	not yet due									
15.8	Review road policy to provide a framework for the management of the roads environment by 2015	not yet due									

15.9	Baseline data collection will be commissioned as required. Requirements for policies relating to footpaths, public rights of way, cultural heritage, archaeology and carrying capacity explored by December 2013	not yet due												
15.10	Carrying capacity study commissioned by 2012	behind schedule												
16	Sea and coastal zone													
16.1	Environmental review of the Commercial fishing policy by December 2012	behind schedule												
16.2	Create and implement a marine management plan by March 2015	not yet due												
16.3	Baseline data collection will be commissioned as required. Requirements for policies relating to marine archeology, marine pollution and carrying capacity explored by December 2013	not yet due												
16.4	Marine and coastal species action plans developed. At least 3 SAPs developed by 2015 for critically endangered species	not yet due												
17	Water													
17.1	water management best practice developed and implementation begins by 2016	not yet due												
17.2	Develop and implement a sewage policy by 2016	not yet due												
17.3	Research freshwater ecology by 2016	not yet due												
17.4	Create freshwater ecology management plan by 2017 to include habitat restoration	not yet due												
18	Air and sky													
18.1	Atmospheric pollution policy created and implemented by 2014	not yet due												
18.2	Noise Pollution policy	not yet due												

	created and implemented by 2014																		
18.3	Light Pollution policy created and implemented by 2014	not yet due																	
19.1 Financing																			
19.11	Funding sources for environmental projects sign-posted on SHG website by December 2013	not yet due																	
19.12	Green financing mechanism established by March 2014	not yet due																	
19.2 Human Resources																			
19.21	Environmental Training programme developed by March 2015	completed ahead of schedule																	
19.22	External expertise channel formalised by March 2014	completed ahead of schedule																	
19.3 Evidence Base																			
19.31	National Environmental Data management system created and implemented by March 2013	partially complete																	
19.32	Research projects commissioned and or undertaken by core staff	ongoing - research projects initiated																	
20 Assessment and monitoring																			
20.1	Environmental assessment and monitoring framework created and implemented by March 2013	behind schedule																	
20.2	Environmental standards established by March 2014	not yet due																	
21 Environmental Scrutiny Board																			
21.1	Environmental Scrutiny Board established with TORs and members by March 2013	behind schedule																	
21.2	Review of the NEMP	not yet due																	

The following information is based on an account supplied to us by Ascension Island Government. Additional information was obtained from the following sources:

- Pelembe, T. and Cooper, G. (eds). 2011. *UK Overseas Territories and Crown Dependencies: 2011 Biodiversity Snapshot*. Peterborough, UK: Joint Nature Conservation Committee.
- Cottam, M. (ed.). 2013. *The UK Overseas Territories Biodiversity Strategy - Review of Progress*. UKOTA, Joint Nature Conservation Committee.
- Cottam, M. (ed.). 2013. *Recent Conservation Achievements of UK Overseas Territories and Crown Dependencies and their Contributions to National Aichi Biodiversity Targets (2013)*. Peterborough, UK: Joint Nature Conservation Committee.

Part I: An update on biodiversity status, trends, and threats and implications for human well-being

Q1: Why is biodiversity important for your country?

As Ascension Island has no resident population and relies on communications and military for income generation, biodiversity does not contribute a great deal to the economy. The exception is the offshore marine fishery (mainly for big-eye and yellow-fin tuna), which raises significant revenues from licence fees. However, biodiversity is important for quality of life on the island and is used recreationally by many islanders for activities such as hiking, diving and fishing. There is also a limited amount of ecotourism drawn in by the wildlife (e.g. turtle and bird watching), with efforts underway to expand this sector.

At only one million years old, Ascension is a geologically young island and this, together with its isolation, explains its comparatively species-poor biodiversity. However, despite this, the degree of endemism of terrestrial and marine biodiversity is high, with at least 55 endemic species of plants, fish and invertebrates. The Island also supports the largest green turtle and seabird nesting colonies in the tropical Atlantic.

The relative lack of diversity of marine species compared to other tropical islands is compensated by its unusual community structure, representing a potentially unique assemblage of western and eastern Atlantic flora and fauna. Following the recent expeditions by the Shallow Marine Survey Group, 168 fish species are listed from Ascension Island, of which 129 are considered 'coastal fish species'. Eleven of these (8.5 per cent) appear to be endemic to the island, and a further 16 species (12.4 per cent) appear to be shared endemics with St Helena.

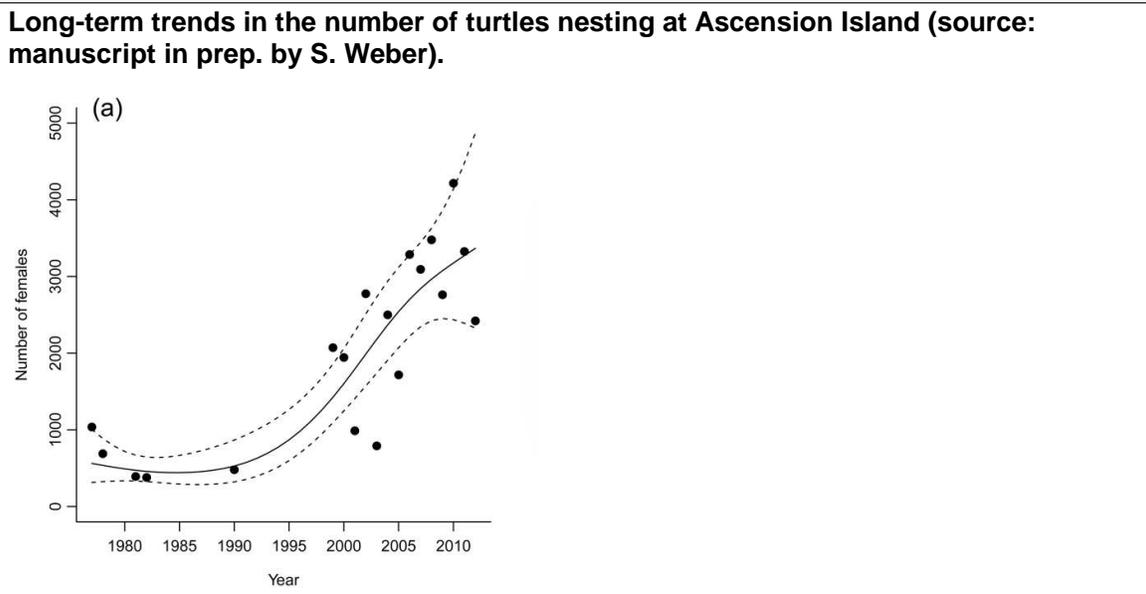
Q2: What major changes have taken place in the status and trends of biodiversity in your country?

If current trends continue, it is unlikely that any Ascension Island species will suffer extinction (functional or absolute) by 2020. We expect significant loss of key habitats to occur by 2020, however we also expect significant improvement and safeguarding of eco-system services. Overall, in Ascension, the gap between conservation action and the loss of species and habitats is closing.

Ascension Island was formerly home to large seabird colonies, but the introduction of cats in the 1800s led to rapid population declines. Relict populations survived on inaccessible cliff ledges and offshore stacks, the largest of which is Boatswain Bird Island. In 2001, a feral

cat eradication programme was initiated by the RSPB, and the last known feral cat was removed from the mainland in March 2004. Seabird re-colonisation of the mainland was first recorded in May 2002 and numbers have increased steadily since. By 2011, six out of the 11 species of seabird found at Ascension were nesting on the mainland once again and in 2012, the first two pairs of endemic frigate birds were observed nesting on the mainland after a 180 year absence – a landmark in Ascension’s conservation efforts. Provided that there are no major changes in marine productivity, and with on-going efforts to control the rat numbers on the Island, we anticipate that seabird numbers will remain stable or increase in coming years.

Ascension Island has the second largest nesting population of the green turtle in the Atlantic Ocean and the largest nesting population of any marine turtle species in all of the UK Overseas Territories (the green turtle is classified as Endangered on the IUCN Red List of Threatened Species). The population has been the subject of a long-term population monitoring programme spanning 35 years, and we are pleased to be able to report that the 2012/13 green turtle nesting season was the biggest since records began in 1977, with an estimated total of 34,500 nests between December 2012 and June 2013. This is an encouraging trend, and charts the recovery of the green turtle population on Ascension following the cessation of harvesting for meat in the 1930s.



However, native and endemic plants are faring less well, with two of the seven endemics (*Euphorbia organoides* and *Asplenium ascensionis*) listed on the IUCN Red List of Threatened Species as having declining populations, and three species (*Anogramma ascensionis*, *Ptisana purpurascens*, and *Pteris adscensionis*) listed as critically endangered with unknown population trends. These plants are threatened due to competition with invasive weeds and grazing by introduced mammals, as detailed below.

Q3: What are the main threats to biodiversity?

Invasive species

Ascension is more heavily impacted by invasives than almost any other island on Earth – 95 per cent of plant species are introduced. All habitats have been subject to encroachment by introduced species to a considerable extent, and virtually nothing still exists that could be described as truly ‘native habitat’, with the possible exception of some areas of extremely barren coastal desert and some relict fragments of upland vegetation on exposed, misty

slopes. In Green Mountain National Park, non-native vegetation dominates; a legacy of the eminent botanist Joseph Hooker who initiated the development of this man-made cloud forest by introducing over 220 exotic plant species from diverse parts of the world. This area is enjoyed by island residents and visitors and has attracted attention worldwide. Work continues in the National Park to create some restoration areas for the endemic ferns that once dominated so that they are not entirely out-competed and some balance can be created between the new and the native vegetation.

However, in some areas, introduced vegetation is becoming a large problem, for example the Mexican thorn *Prosopis juliflora* has been particularly destructive to native vegetation. The exact date of introduction of *P. juliflora* is uncertain, though its presence was recorded in the 1960s and possibly a decade earlier. It has since spread extensively across the drier lowlands of Ascension and is now the dominant plant species in these areas. An important vector for spread has been Ascension's feral donkeys that ingest the seed, scarify and deposit it with a supply of nutrients. The boundaries of the *Prosopis* population are now pushing up into the lower slopes of the Green Mountain National Park and down onto the island's important turtle nesting beaches. Other problematic introduced plant species that are spreading at an alarming rate include the tree tobacco *Nicotiana glauca* which has exploded in numbers in the lowland areas in less than 20 years, the tropical heliotrope *Heliotropium curussavicum* that has advanced particularly quickly around the coasts and is now locally dominant and mid altitude plants such as the yellowboy (*Tecoma stans*), buttonweed, guava (*Psidium guajava*) and tungy.

In terms of introduced mammals, Ascension Island has been free of goats since the 1940s, but hosts large populations of rats, rabbits, feral sheep and around 50 donkeys. These animals have devastating effects on both the native flora and fauna, including browsing on the plant life, spreading the seeds of invasive plants in their faeces and preying on the eggs and young of seabirds and turtles. The Conservation Department supports the introduction of tighter control measures of these introduced mammals, such as castration of the donkeys and eradication of the sheep but at the present time this cannot happen due to public objection.

Satisfactory response to the impacts of Alien Invasive Species (IAS) will likely remain beyond our capacity for the foreseeable future. Ascension Island seeks support in containing the rampant advance of invasive species that are crowding out biodiversity. Research and strategies for response are needed, but local capacity and resources are extremely limited.

Climate change

Little is known about the potential impacts of climate change on biodiversity in Ascension. Current climate change research is pulling together global circulation model data and meteorological data from Ascension to try and assess the likely outcomes.

In Ascension, climate change is regarded as a priority, with active political and stakeholder buy in. Climate change is not generally regarded with scepticism; however the threats posed by climate change are largely regarded as intractable.

Illegal fishing

Illegal fishing is also a threat to marine life in terms of damage to the fisheries stocks and also by-catch of non-target and threatened species such as sea turtles, sea birds, sharks and cetaceans. Ascension Island is currently extremely data-poor with respect to fisheries and oceanography, but Ascension Island Government recognises the need to develop its fisheries management. There are five recognised fisheries on Ascension Island, including a recreational shore fishery, a recreational boat fishery for fish and lobsters, a charter boat sport fishery, a small-scale commercial fishery (part-time and full-time fishers) and an

offshore licenced tuna longline fishery. There is also thought to be an Illegal, Unreported and Unregulated (IUU) fishery operating in the Ascension Island EEZ. An understanding of population dynamics, age, growth and reproductive biology of exploited fish species are particularly lacking. Catch and effort data are also completely lacking within these fisheries, and this needs to be addressed urgently if these fisheries are to be monitored and managed sustainably. In terms of the offshore fishery, there is a complete lack of control, monitoring, compliance or an observer programme which could be provided by a well-conceived Fisheries Unit. Other concerns include the unknown level and types of incidental mortality within the offshore fishery and this need to be assessed with utmost importance. With this in mind, Ascension Island Government Conservation Department is seeking resources to form a Fisheries Unit on Ascension that will enable us to move towards meeting our commitments under multilateral agreements relating to the marine environment.

Q4: What are the impacts of the changes in biodiversity for ecosystem services and the socio-economic and cultural implications of these impacts?

As Ascension Island has no resident population and is primarily a base for the UK and US military and a communications hub, it is difficult to fully address this question.

Optional question: What are possible future changes for biodiversity and their impacts?

Part II: The national biodiversity strategy and action plan, its implementation, and the mainstreaming of biodiversity

Q5: What are the biodiversity targets set by your country?

Ascension Island Government Conservation Department is currently developing a National Biodiversity Action Plan (NBAP) under a Darwin Initiative project ('Developing and Initiating a BAP for Ascension Island'), which will set formal targets for biodiversity conservation. The NBAP is being developed as a collaborative exercise with all of the stakeholders involved in the preservation of Ascension Island's biodiversity. Several guiding principles for the NBAP were established at the inception of the project:

- The targets and objectives set in the NBAP should be aligned with the Aichi Biodiversity Targets and other relevant multilateral environmental agreements (e.g. The Global Strategy for Plant Conservation, CITES, Convention on Migratory Species), as well as the Ascension Island Environment Charter.
- A formal set of criteria should be established for identifying priority species for the NBAP. Provisional criteria include: (1). The species is endemic to Ascension Island; (2). The species is threatened globally according to the *IUCN Red List of Threatened Species*, and/or appears in the Appendices of multilateral environmental agreements (MEAs) ratified by the UK, including CITES and the Bonn Convention; (3). Ascension Island supports a significant proportion of the global population of the species for a least some stage in its life-cycle (native species only); (4). A fourth criterion is also in place for invasive species with known detrimental effects on native and endemic species, based on evidence from Ascension or elsewhere in the world. Additionally, separate criteria are currently being developed for selecting habitats for inclusion in the BAP and individual species that do not qualify under the above conditions for a SAP could still be included in the BAP through habitat management plans that encompass species

assemblages. For example, HAPs for semi-desert and native grassland would include many native plants and invertebrates and a HAP for coastal marine would include many native fishes.

- Targets set in the NBAP should be SMART (Specific, Measurable, Achievable, Relevant and Time-limited), although this framework should not exclude ongoing conservation action which needs to be continued indefinitely

The actions proposed in the SAP have been divided into four categories: policy and legislation, safeguards and management (e.g. *ex situ* conservation, habitat restoration, and invasive species control), research and monitoring, and communication and awareness-raising.

Q6: How has your national biodiversity strategy and action plan been updated to incorporate these targets and to serve as an effective instrument to mainstream biodiversity?

See above. Conservation efforts on Ascension were formally initiated in 2001 when the Foreign and Commonwealth Office (FCO) funded a Seabird Restoration project, which then led to the establishment of the Ascension Island Government Conservation Department. In this year, AIG and the UK Government also signed up to an Environment Charter for Ascension with the aim of conserving its natural heritage. The conservation team has since established its identity on Ascension and has made steady progress in conserving and promoting the Island's biodiversity through the guiding principles of the Environment Charter and the development of management plans for some key species such as the green turtle and the endemic plants (Annex 2). The department and its overseas collaborators were aware of the need for a national biodiversity action plan, but it wasn't until 2012 that the necessary funds and expertise were secured to carry out such a project. However, this has made it easier to prepare this plan in line with the biodiversity targets rather than have to revise an older plan to incorporate them.

Q7: What actions has your country taken to implement the Convention since the fourth report and what have been the outcomes of these actions?

Implementation of the *Strategic Plan for Biodiversity 2011-2020* (CBD 2010) and its Aichi Biodiversity Targets are covered in detail under Question 10.

Summaries for the projects mentioned in Question 10:

Flora and Fauna International Flagship Species Grant – Operation Land Crab (2013–2014): The land crab *Johngarthia lagostoma* is a near-endemic of Ascension Island and the only large, native terrestrial animal remaining on the island. However, very little is known about its conservation status, distribution and ecology, and public appreciation of its unique role within the Island's original ecosystem is often lacking. Operation Land Crab aims specifically to address these issues through a combination of research and awareness-raising activities.

Darwin Initiative funded Biodiversity Action Plan Project (2012–2014): This project aims to produce and implement the first national Biodiversity Action Plan (BAP) for Ascension Island. The BAP will be broken down into a series of separate action plans for habitats (Habitat Action Plans – HAPs) and species (Species Action Plans – SAPs). We will also be including action plans for how to tackle the threats posed by invasive species on Ascension (e.g. the black rat and the Mexican thorn bush). These plans will be aspirational but also realistic and will rely heavily on co-operation between many different organisations. By

drawing together such expertise and working collaboratively we will be able to produce a much stronger plan to protect the Island's biodiversity.

Darwin Initiative funded Shallow Marine Survey Group Expedition: Assessing Ascension Island's Shallow Marine Biodiversity (2012–2013): During a 3-week expedition, the team carried out an extensive survey of Ascension's intertidal and sub-tidal habitats. This resulted in the development of faunal and floral species inventories, habitat descriptions and maps, a field guide to marine invertebrates, algae and fish, a report on the status of marine endemics, and a report on the potential impacts of climate change.

OTEP funded Green Mountain National Park Education and Visitors Centre (2009–2011): The main objective of this project was to provide an education and visitors centre in the Green Mountain National Park for the public, visitors, researchers, scientists and school children from Ascension and overseas. The ground floor of the centre has an exhibition centre, an office, workshop and storage area and the first floor has been converted into a lecture theatre and classroom facility.

EU funded South Atlantic Invasive Species Project (2008–2010): The aim of this project was to increase the territories' capacity to tackle invasive species that have a negative impact on economy, environment and quality of life. The project began with an island-wide botanical survey to assess the state of both native and endemic plant life on Ascension. Work was carried out on the invasive species to eradicate them where possible (e.g. the bull grass and wild mango) and to attempt to control others (e.g. the Mexican thorn that has invaded most of the island's lower areas in the past 40 years).

OTEP funded Endemic Plants Project (2007–2009): All seven of Ascension's endemic plants are threatened with the risk of extinction. This project, carried out in collaboration with the Royal Botanic Gardens, Kew, resulted in the development of a management plan for the endemic plants, improved seed bank collections and the updating of the IUCN Red List statuses for these species. In addition, horticulture protocols for each species were outlined and used to improve local collections and further develop ex-situ plant collections. While this project ended in 2009, the AIG conservation team continue to propagate endemic and native plant species that are reintroduced both into restoration areas and the wild. The wild populations of the endemic and native plants are visited regularly to clear invasive species and carry out an annual plant census.

OTEP funded Environmental Education Project (2005–2007): The aim of this project was to raise environmental awareness in two Overseas Territories in the South Atlantic – the Falkland Islands and Ascension Island. Environmental resources for schools were produced, some focusing on island-specific issues and native wildlife. As part of this project, an environment-themed summer school was initiated for children on the island called 'Ascension Explorers', which is still being run at present. Also, a campaign was launched to encourage local volunteers to take part in wildlife surveys and monitoring. The outputs of this project have been incorporated into the education delivery system in both islands.

OTEP funded project, Improving Access to Green Mountain National Park (2005–2007): This project worked to remove invasive vegetation from the historical paths, tunnels, buildings and structures in the national park so that they could be fully enjoyed by residents and visitors.

Case study: Protected Areas Management:

This OTEP-funded project ran up till 2005. Green Mountain is a site of natural beauty and an important habitat for Ascension's endemic species of plants. The project focused on improving management planning for the Park, endemic plant protection and restoration as well as improved public awareness.

Main outcomes:

- The development of a park management plan.
- Improved public access.
- Provision of a pilot for future protected areas on Ascension.
- Protection of wild endemic plant colonies.
- Creation of an endemic plant nursery.
- Public awareness campaign.

Q8: How effectively has biodiversity been mainstreamed into relevant sectoral and cross-sectoral strategies, plans and programmes?

Ascension has not yet taken part in the current JNCC Environmental Mainstreaming Initiative, but is interested in doing so, and a government representative attended the meeting in the Falklands as an observer. Political will does not present a significant barrier to biodiversity conservation locally. Local politicians will occasionally take a strong lead on conservation issues, and public concerns regarding the environment are generally taken seriously by politicians, and translated into solid conservation action. Stakeholder involvement in our conservation strategies is generally good, and extends beyond planning into active implementation, however, whether the local public regard biodiversity conservation as a serious issue remains unclear.

Ascension Island Government as a whole is currently working towards ISO 14001 accreditation. This standard sets out the criteria for an effective environmental management system and demonstrates AIG's commitment to improve efficiency, reduce waste and drive down costs across all of its developments. Also, as Ascension's offshore fishery programme expands under the management of AIG, aspirations for MSC accreditation for sustainable fishing will be central to this development.

The Conservation Department also maintains links with the other main users of the island – the RAF and their Interserve contractors, the US military, the BBC and their Babcock contractors and Sure telecommunications. We are generally the first point of contact for matters relating to the environment on Ascension and work to encourage these companies to adopt high standards of environmental management.

Q9. How fully has your national biodiversity strategy and action plan been implemented?

Ascension has seven ordinances that are relevant to the environment, including the recently enacted Wildlife Protection Ordinance, 2013, that lists all of the endemic plants, 11 seabirds, two marine turtles, 13 fish, five invertebrates and also provides enabling legislation for the marine environment such as the designation of areas and seasons closed to fishing (see Annex 1 for details).

Ascension Island Government (AIG) signed an Environmental Charter in 2001 that outlines a number of commitments that both the AIG and the UK government have agreed to. There are five other biodiversity conservation related-strategies for Ascension (see Annex 2).

A 2.5-year project, funded by the Darwin Initiative, to design and implement a national Biodiversity Action Plan (NBAP) for Ascension Island began in July 2012. The NBAP will comprise of a number of Species and Habitat Action Plans that will identify current knowledge gaps, highlight threats, and detail achievable targets for the coming years. Implementation of existing conservation action plans and strategies in Ascension is generally good. It is envisaged that the NBAP will guide future conservation work on Ascension, such that all activities undertaken by AIG Conservation Department, external organisations and visiting researchers can be linked to one or more NBAP objectives (e.g. through annual AIG reporting and research permit applications of visiting scientists). The NBAP will be a live document that can be continually reviewed and updated as targets are met, new research becomes available, and new actions are added. To facilitate this, the NBAP will be hosted in an accessible web-based format within the [Conservation Department pages of the new AIG website](#). Each Species Action Plan (SAP) and Habitat Action Plan (HAP) will be allocated its own web page that can be easily updated and navigated by interactive section headings, as well as being available for PDF download. See also answers to Questions 5 and 6.

Part III: Progress towards the 2020 Aichi Biodiversity Targets and contributions to the relevant 2015 Targets of the Millennium Development Goals

Q10: What progress has been made by your country towards the implementation of the Strategic Plan for Biodiversity 2011-2020 and its Aichi Biodiversity Targets?

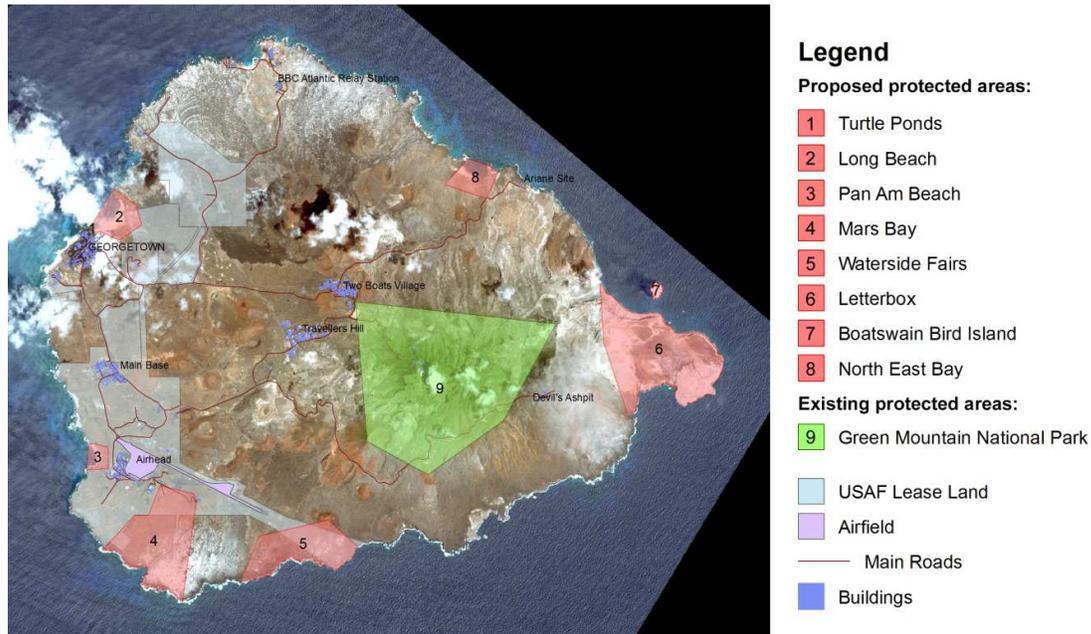
ASCENSION ISLAND
RESPONDENTS: Ascension Island Government.
Strategic Goal A:
Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society
Target 1: AWARENESS
1. OTEP-funded Environmental Education Project (2005-2007).
2. OTEP-funded Green Mountain National Park Education and Visitors Centre (2009-2011).
3. Darwin Initiative funded Shallow Marine Survey Group Expedition (2012-13).
4. Darwin Initiative Biodiversity Action Plan Project (2012-2014).
5. Flora and Fauna International Flagship Species Grant – Operation Land Crab.
Target 2: INTEGRATION
1. Darwin Initiative Biodiversity Action Plan Project (2012-2014).
2. Marine Biodiversity and Fisheries project (proposal to be submitted to Darwin Initiative Sept. 2013).
Target 3: INCENTIVES and SUBSIDIES
Target 4: SUSTAINABLE PRODUCTION and CONSUMPTION
1. Marine Protection Ordinance 2013 as part of the Darwin BAP Project.
Strategic Goal B:
Reduce the direct pressures on biodiversity and promote sustainable use
Target 5: HABITAT LOSS
1. Endemic Plant Restoration Projects (2 x OTEP funded projects and now part of core activities).
2. Removal of invasive plants from turtle nesting beaches (core activity).
3. EU-funded South Atlantic Invasive Species Project.
Target 6: SUSTAINABLE FISHERIES
1. Marine Protection Ordinance 2013 as part of the Darwin BAP Project.
2. Marine Biodiversity and Fisheries project (proposal to be submitted to Darwin Initiative Sept. 2013).
Target 7: SUSTAINABLE AGRICULTURE, AQUACULTURE and FORESTRY
<i>(No agriculture, aquaculture or forestry on Ascension Island)</i>
Target 8: POLLUTION
<i>(No industry or farming on Ascension – pollution comparatively low)</i>

Target 9: ALIEN INVASIVE SPECIES
1. EU-funded South Atlantic Invasive Species Project.
2. Core Activities.
3. Rat and Myna Bird Control Programmes (AIG Environmental Health Department core activities).
4. MSc student project: Diet and distribution of the invasive ship rat on Ascension (part of Darwin BAP project).
5. Biocontrol on the Mexican thorn, prickly pear and lantana (CABI).
6. Biosecurity on planes and ships identified as an important area for future work.
Target 10: CLIMATE CHANGE
1. Turtle nesting beach temperature monitoring (2002 – present).
2. Sea temperature monitors (deployed 2012 as part of Darwin SMSG project).
Strategic Goal C: To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity
Target 11: PROTECTED AREAS
1. National Protected Areas Ordinance (2003).
2. Designation of Green Mountain National Park (2005).
3. South Atlantic Overseas Territories Protected Areas Workshop hosted on Ascension (2013).
4. Improving Ascension Island's Protected Areas Network – Draft legislation submitted as part of Darwin BAP project (see below)
Target 12: EXTINCTION
1. <i>Anogramma ascensionis</i> (Ascension parsley fern) rediscovered in the wild (2010) and in cultivation at Kew and on-Island.
2. Critically endangered endemic plants all in cultivation and seed banks have been created.
3. Green turtle nesting population increasing at a significant rate (2012/13 was the biggest nesting season on record).
4. Endemic frigatebird <i>Fregata aquila</i> (vulnerable on IUCN Red List due to restricted nesting habitat) nesting back on mainland (2012).
Target 13: GENETIC DIVERSITY (<i>No farmed or domesticated animals, no agriculture or cultivated plants on Ascension.</i>)
Strategic Goal D: Enhance the benefits to all from biodiversity and ecosystem services
Target 14: SAFEGUARDING ECOSYSTEM SERVICES (<i>Not applicable – Ascension Island was largely barren and any ecosystem services now come from introduced species e.g. erosion prevention and water catchment on Green Mountain.</i>) Possible exception is our fish stocks:
1. Marine Protection Ordinance 2013 as part of the Darwin BAP Project.
2. Marine Biodiversity and Fisheries project (proposal to be submitted to Darwin Initiative Sept. 2013).
Target 15: CARBON STOCKS (<i>Not applicable – as above. Carbon sequestration largely associated with introduced species.</i>)
Target 16: NAGOYA PROTOCOL (<i>Not applicable – no genetic research for commercial applications conducted on Ascension.</i>)
Strategic Goal E: Enhance implementation through participatory planning, knowledge management and capacity building
Target 17: NATIONAL BIODIVERSITY ACTION PLAN
1. Darwin Initiative Biodiversity Action Plan Project (2012-2014).
Target 18: TRADITIONAL KNOWLEDGE and USE (<i>No indigenous population however there is a local recreational fishery.</i>)
Target 19: INFORMATION SHARING
1. OTEP-funded project: Reassessing the size of the green turtle nesting population on Ascension (2011-2012).
2. OTEP-funded Endemic Plant Project – IUCN listings for all 7 of our endemic plants (2008-2010).
Target 20: FINANCIAL SUPPORT FOR IMPLEMENTATION of STRATEGIC PLAN FOR BIODIVERSITY
1. Access to Darwin Plus and other funding bodies.

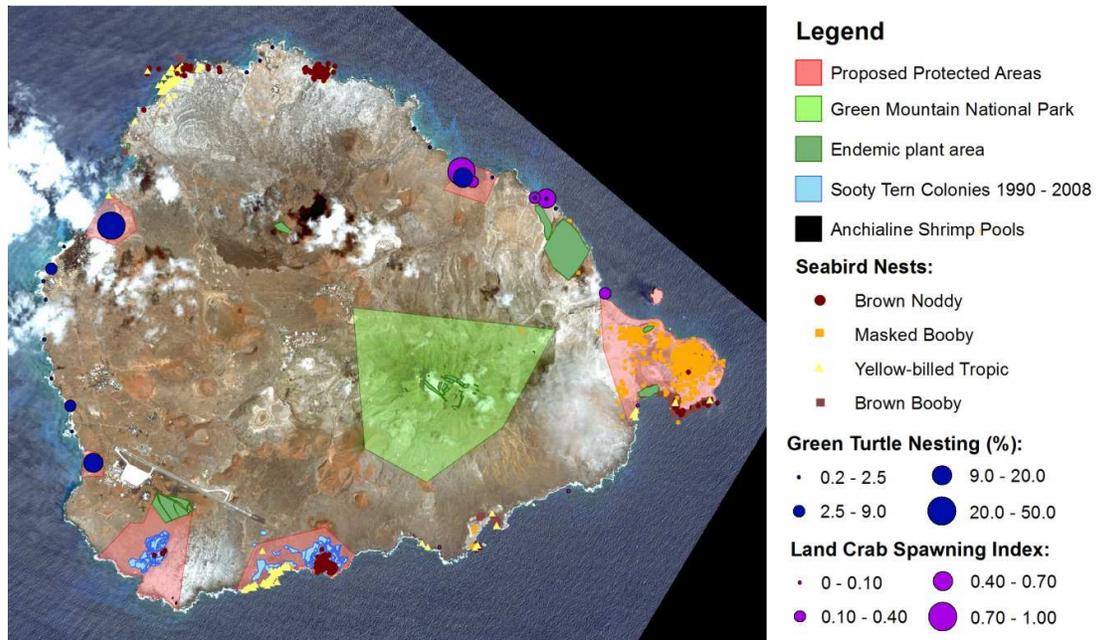
Protected areas:

Currently, Green Mountain National Park is the only protected area on Ascension Island (approximately 10 per cent of terrestrial area), leaving most of the island’s key biodiversity sites, including turtle nesting beaches and seabird colonies, with no legislative protection. Draft proposals for both terrestrial and marine protected areas were prepared and put forward to the Island council in 2004 under the leadership of former Conservation Officer, Tara Pelembe. However, these legislative changes were stalled due to the disbanding of the Island Council. One of the aims of the current Darwin Initiative project is to review and update the environmental legislation on Ascension and as we currently have a stable Island Council and the support of the Administrator and Crown Counsel, we are pushing ahead with this aspect of the project. In 2013, a policy document entitled ‘Improving Ascension Island’s Protected Areas Network’ was submitted to the Island Council for consideration. The proposal calls for the designation of six new nature reserves and one seabird sanctuary under the National Protected Areas Ordinance, encompassing the most important turtle and seabird nesting sites, endemic plant habitat and land crab spawning sites, along with other high value biodiversity features (e.g. endemic shrimp pools). Councillors were briefed on the proposal by AIG Conservation Department, and early indications suggest that there is strong support. We hope that by the end of 2014 new protected areas legislation designating at least some of the proposed sites will have been drafted.

Proposed protected areas compared to existing infrastructure and political boundaries:



Proposed protected areas compared to key biodiversity sites:



Q11: What has been the contribution of actions to implement the Convention towards the achievement of the relevant 2015 targets of the Millennium Development Goals in your country?

Most relevant MDGs to this report are:

Target 7.A: *Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources.*

Target 7.B: *Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss.*

ANNEX 1:

ASCENSION ISLAND NATIONAL ENVIRONMENTAL LEGISLATION

1. Dogs and Cats Ordinance (2000): Provides for the control of dogs and cats.
2. Endangered Species Control (1976): Provides for the control of exports and imports of endangered species from/ to Ascension.
3. Fishery Limits Ordinance (1978, revised 2007): Defines the fishery limits of Ascension and makes provision for the regulation of fishing within those limits.
4. Green Mountain Protection Ordinance (1955): Provides for the protection of the natural resources of Green Mountain, Ascension Island.
5. Harbours Ordinance (2005): Provides for the regulation, management and control of harbours and their vessels in Ascension.
6. National Protected Areas Ordinance (2003): Provides for the designation of protected areas. Areas can be designated Sanctuaries, Nature Reserves or National Parks.
7. Wild Life Protection Ordinance (1944) and Regulations (1967) prohibits the killing or capture of any wildlife within Ascension. Repealed in 2013 with the enactment of the Wildlife Protection Ordinance, 2013: Provides for the protection and preservation of the wildlife and habitat of Ascension Island.

ANNEX 2:

ASCENSION ISLAND NATIONAL ENVIRONMENTAL AND BIODIVERSITY-RELATED STRATEGIES

- The 2001 Environment Charter
<http://www.ukotcf.org/pdf/charters/ascension.pdf>
- An Ascension Island Management Plan was developed in 1999, setting out major priorities for the island including the eradication of feral cats, and control of exotic plants.
- The Management Plan for the Marine Turtles of Ascension Island
<http://www.seaturtle.org/mtrg/projects/ascension/mplan.shtml>
- 2005–2010 Green Mountain Action Plan and its related lists of flora and fauna of Green Mountain is an important document outlining biodiversity conservation priorities of Ascension Island.
- In 2009 a plan for the conservation of endemic and native flora of Ascension Island was developed. This document gives a comprehensive outline of the flora of Ascension and clear priorities for conservation. This plan takes a 'site-lead approach' to native and endemic flora conservation due to the level of threat of many flora species and the need to restore areas where functional communities of flora can co-exist.
- Following enactment of the 2003 National Protected Areas Ordinance a document outlining 14 proposed areas for designation was submitted to the island Council, however to date, only the Green Mountain National Park has been established. A revised document is currently with the Island Council (details above) that proposes the expansion of Ascension's protected areas network from 9.4 km² to 17.3 km², representing 17.8 per cent of the Island's land area and including the majority of key biodiversity sites for terrestrial plants, land crabs, seabirds and marine turtles. We anticipate significant progress on this to be made over the coming year.
- Development of the first national Biodiversity Action Plan for Ascension Island – a Darwin Initiative funded project. For more details, see:
www.ascension-island.gov.ac/government/conservation/projects/bap/.

The following information is based on an account supplied to us by the Tristan da Cunha Government. Additional information was obtained from the following sources:

- Pelembe, T. and Cooper, G. (eds). 2011. *UK Overseas Territories and Crown Dependencies: 2011 Biodiversity Snapshot*. Peterborough, UK: Joint Nature Conservation Committee.
- Cottam, M. (ed.). 2013. *The UK Overseas Territories Biodiversity Strategy – Review of Progress*. UKOTA, Joint Nature Conservation Committee.
- Cottam, M. (ed.) 2013. *Recent Conservation Achievements of UK Overseas Territories and Crown Dependencies and their Contributions to National Aichi Biodiversity Targets (2013)*. Peterborough, UK: Joint Nature Conservation Committee.

Part I: An update on biodiversity status, trends, and threats and implications for human well-being

Q1: Why is biodiversity important for your country?

The islands of the Tristan da Cunha archipelago are of high significance in terms of global biodiversity. Gough and Inaccessible Islands are a natural World Heritage Site (one of only two natural sites in the UK Overseas Territories) due to their exceedingly high importance for seabirds. The economy of Tristan depends largely on income from a well-managed lobster fishery with sustainability certification (Marine Stewardship Council). It is clear that any negative impact on this fishery could have dramatic negative impacts on the people of Tristan.

Owing to their isolated location in the South Atlantic and with finite resources on island (the population is only 264 people), Tristan requires assistance from the UK and internationally to support them in protecting the environment.

Q2: What major changes have taken place in the status and trends of biodiversity in your country?

Since the last CBD COP, there have not been major changes in the status of biodiversity on Tristan. However, the ongoing impact of invasive species, especially rodents and plants, means that the status of some species continues to decline. This is particularly true for burrowing seabirds and albatrosses on Gough Island, as well as Gough bunting. Northern rockhopper penguin numbers were affected by the oil spill following the wreck of the *MS Oliva* in 2011, and the breeding success of these birds remains low, perhaps due to global change (research into the cause is underway). Many groups of taxa (plants, lichens, invertebrates) are not well documented, and the status of many species is unclear – there could be further declines that are not known.

Tristan da Cunha has a well run Conservation Department (with 4 staff) which takes the lead on bio-security and bio-diversity on the islands. However Tristan da Cunha does not have the same level of resources as the UK or other far larger Overseas Territories, and reversing some of these negative trends will be difficult without more resources. For example, the Tristan government does not have sufficient resources to maintain a constant staff presence on Gough: this is vital to continue invasive plant control work.

The staff of 4 are required to monitor all the islands and all taxa – Tristan has more globally threatened species than the UK.

The Tristan da Cunha government is working with key partners such as the RSPB to look at innovative ways to mitigate threats to wildlife on the islands such as the proposals of eradicating mice from Gough Island. Biodiversity projects are given a high priority by the government.

Q3: What are the main threats to biodiversity?

Invasive species

Invasive species have had a major impact on biodiversity. Rats and mice have been responsible for the disappearance of a large proportion of the indigenous bird life. The capacity to respond to the threat from many Alien Invasive Species (IAS) is limited due to the level of resources available and lack of external funding. Improving biosecurity and minimising the arrival of new species is also a high priority – it would be catastrophic if cats were re-introduced on Tristan da Cunha or rats or mice were to reach the rodent-free islands of Nightingale and Inaccessible, and this was feared after the wreck of the *MS Oliva*. The arrival of new marine invasive species is also of great concern, and Tristan has had two recent shipwrecks both of which brought new additions to the marine fauna. It is still not known what impact these new species may have.

Over/illegal fishing

Long-line fishing is a major threat to some of the Procellariiform seabirds on the island, most notably the Spectacled petrel, Tristan albatross, Atlantic yellow-nosed albatross and Sooty albatross. Large-scale mortality of the former two species has been recorded off the South American continental shelf near southern Brazil. Illegal fishing in the Tristan Exclusive Economic Zone (EEZ) may also contribute significant mortality, however this is unquantified.

Location and finite capacity

Owing to the remote location, logistical difficulties, lack of profile in the UK and internationally, and costs involved, Tristan does not always receive the support it deserves.

The Conservation Department is growing slowly but requires funds from NGOs to support their activities. Without that vital support, conservation activity would not occur. The weather is also a significant issue and one that dictates whether conservation work on the islands can commence. Projects can be delayed by at least a year due to the weather. The harbour is not fit for purpose and requires constant repairs. Owing to this the harbour can only be used for a minimal time during the year. The lack of berths available to visit the island also limit the number of external researchers that can visit.

Q4: What are the impacts of the changes in biodiversity for ecosystem services and the socio-economic and cultural implications of these impacts?

The declines in biodiversity that have occurred recently have not been severe enough to have an impact on ecosystem services, except that due to the low numbers of breeding rockhopper penguins, the traditional (sustainable) harvest of penguin eggs has been suspended. The lobster fishery was also closed for several years after the wreck of the

MS Oliva, but this has recently re-opened and Tristan da Cunha will be monitoring the situation closely to see what the long-term impact will be.

The people of Tristan have a strong identification with the natural environment and are proud of their amazing wildlife. The rockhopper penguin, Tristan albatross and Atlantic yellow-nosed albatross are all iconic species and feature on many souvenirs and artworks related to the island. When many penguins were oiled following the 2011 shipwreck, the whole island community rallied to save them, with everyone from young children to pensioners involved. The community swimming pool was converted into a rehabilitation centre. Unfortunately, it was too late to save many of the birds, but the community's efforts were rewarded when they received a medal from the RSPB (a large UK-based conservation charity) in 2012.

Declines in biodiversity at Tristan will affect the fishery, the island income, and the islanders' sense of identity. It is clear that this community is closely linked to nature.

Optional question: What are possible future changes for biodiversity and their impacts?

There are several potential changes. Tristan has a very small economy and cannot fund the conservation work without external assistance. Unless the UK HMG and NGOs provide increased financial and resource support, biodiversity will suffer on the islands, with an increased rate of extinction highly likely.

Part II: The national biodiversity strategy and action plan, its implementation, and the mainstreaming of biodiversity

Q5: What are the biodiversity targets set by your country?

Tristan's Biodiversity Action Plan (BAP) sets out the key objectives for biodiversity conservation. Targets have been established in relation to each of these, but they are too extensive to reproduce here. However, the overall goal of the BAP and the main objectives are listed below.

Overall Goal

The overall goal is to conserve the native biological diversity of Tristan da Cunha so that the people of Tristan da Cunha continue to benefit from it and the entire world community is enriched by it.

To this end, the plan seeks to halt, and in some cases reverse, the rate of biodiversity decline on Tristan da Cunha.

The plan will enable the people of Tristan da Cunha to contribute actively to the conservation of biodiversity on their islands and to benefit from it.

Objectives

The Plan has the following main objectives:

1. Conservation is integrated into all Government programmes, policies and plans (both those of Tristan Government and those of the UK that affect Tristan),
2. Support for biodiversity conservation is strengthened on Tristan,
3. Tristanians have the capacity to manage biodiversity effectively,
4. The impact of invasive alien species is reduced or eliminated,

5. The sustainable use and management of the marine environment is enhanced, and
6. The knowledge of Tristan's key habitats and species is increased."

It is hoped that the revised BAP will soon be available online. Until then, it is available on request from the Tristan da Cunha Conservation Department.

Q6: How has your national biodiversity strategy and action plan been updated to incorporate these targets and to serve as an effective instrument to mainstream biodiversity?

Tristan's biodiversity action plan (BAP) was updated in 2012. The targets it contains have been agreed with the Island Council and Conservation Department. It is intended to be a useful and practical document. A goal on integration of conservation into other government programmes is included in the BAP.

Q7: What actions has your country taken to implement the Convention since the fourth report and what have been the outcomes of these actions?

Implementation of the *Strategic Plan for Biodiversity 2011-2020* (CBD 2010) and its Aichi Biodiversity Targets are covered in detail under Question 10.

In addition to its core work in environment, the Tristan da Cunha Conservation Department has undertaken (or assisted with) a number of externally funded environmental projects over the last five years. These include: clearance of invasive Logan Berry plants at Sandy Point; completion of the EU-funded South Atlantic Invasive Species project; assessment of the feasibility of eradicating mice from Gough and continued research into this; development of the Tristan Biodiversity Action Plan and revising the management plans for Gough and Inaccessible; development of a management plan for Nightingale Island; tracking and monitoring of northern rockhopper penguins; tracking of albatrosses; work on Wilkins' bunting on Nightingale; implementation of marine surveys; assessment of the feasibility of rodent eradication from Tristan; gaining Marine Stewardship Council certification for the lobster fishery; continuing to minimise the impact of the fishery on other wildlife; control and eradication of invasive plants at all the islands; responding to the aftermath of the oilspill following the *MS Oliva* wreck and working to rehabilitate penguins; botanical surveys of Tristan da Cunha. These actions have resulted in positive gains for biodiversity on Tristan, as well as socioeconomic benefits for the community. For example, the school vegetable garden that was started during the South Atlantic Invasive Species project has been continued and has led to the development of more local horticulture with freshly grown vegetables now available in the Island Store; the certification of the lobster fishery will lead to increased market access, including in the UK which could increase income; the invasive plant control work has almost succeeded in eradicating New Zealand flax from Nightingale and almost clearing it from Inaccessible.

Q8: How effectively has biodiversity been mainstreamed into relevant sectoral and cross-sectoral strategies, plans and programmes?

Tristan da Cunha has not taken part in the current JNCC Environmental Mainstreaming Initiative: remoteness, resources and scale mean that this process may not be as appropriate as it is for other Territories. Local people are already interested in, and participate in, conservation work. However, due to the remoteness and access issues around Tristan, many struggle to access more remote areas and some may not be aware of conservation issues outside the Settlement Plain and Patches.

Tristan’s sustainable development plan highlights that the environment and conservation are key for the island. The Conservation team work closely with Tourism, the Post Office, Fisheries and Agriculture. Environmental impact assessments will be carried out prior to new major developments.

Due to the very small size of the Tristan settlement and its community, mainstreaming is almost endemic – and many people including several Head Islanders have carried out contract work in the Conservation team; the Head of Police has even written a book called “Rockhopper Copper”!

Q9. How fully has your national biodiversity strategy and action plan been implemented?

Significant progress was made in most areas in Tristan’s last BAP. As described above, the Tristan Conservation Department, Agriculture team, and Fisheries Department have all undertaken work in relation to the implementation of the BAP. However, and also as described above, Tristan simply does not have sufficient resources in-Territory to take all of the management actions necessary to conserve the remarkable biodiversity of the islands. Per capita incomes are low on Tristan, and owing to the small population, the level of resources already being allocated by the Tristan government to conservation is extremely significant. It will be necessary for Tristan to continue to work with external partners (NGOs, UK government, Universities and others) to meet the objectives contained in the revised BAP.

Part III: Progress towards the 2020 Aichi Biodiversity Targets and contributions to the relevant 2015 Targets of the Millennium Development Goals

Q10: What progress has been made by your country towards the implementation of the Strategic Plan for Biodiversity 2011-2020 and its Aichi Biodiversity Targets?

TRISTAN DA CUNHA
Strategic Goal A: Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society
Target 1: AWARENESS
1. When the container ship MS Oliva ran aground at Nightingale in 2011, oil and soya were spread around the islands, causing an impact on seabirds and the marine environment. Many islanders were involved in the rehabilitation of penguins and the oil clean up, raising the profile of Tristan's unique biodiversity on island. Media articles raised awareness of Tristan around the world, and resulted in more than £75,000 being raised for conservation work in the islands.
2. Tristan Biodiversity Action Plan 2012–2016 was updated with input from Tristan Government

heads of departments. One of the plan's actions is to mainstream biodiversity issues through all government programmes, policies and plans.
3. Tristan Studies which covers study of the Tristan da Cunha's native flora and fauna and issues of conservation, biodiversity and sustainability, is integrated into the school curriculum.
4. Island tourism leaflets were updated following the <i>Oliva</i> incident and were distributed at the UK's Birdwatching Fair in a joint effort with Ascension Island and St Helena to raise public awareness of these three Territories and their biodiversity.
Target 2: INTEGRATION
1. The Tristan Strategic Sustainable Development Plan (2009) aims to ensure that the conservation of biodiversity is mainstreamed into future activities when reviewed.
2. Objective 1 of the Tristan BAP 2012-2016 aims to integrate conservation into all Government programmes, policies and plans.
3. Objective 1.4.1 of the Tristan BAP aims to produce policies that require infrastructure/development projects to undergo environmental impact assessments.
Target 3: INCENTIVES and SUBSIDIES
Target 4: SUSTAINABLE PRODUCTION and CONSUMPTION
1. The commercial Tristan Rock Lobster fishery received Marine Stewardship Council (MSC) certification in 2010 and annual audits commenced in 2012. Total Allowable Catch (TAC) quotas are in place and regularly reviewed with input from Marine Resource Assessment and Management (MARAM) at the University of Cape Town.
Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use
Target 5: HABITAT LOSS
1. An OTEP-funded Baseline Vegetation Survey of the island of Tristan was carried out in 2011/12 to assess the distribution and abundance of native and introduced plant species, to inform future conservation management of the island's habitats.
2. Invasive plant management for selected priority species is implemented at all the four main islands of Tristan da Cunha.
Target 6: SUSTAINABLE FISHERIES
1. Marine Stewardship Council certification for the Tristan Rock Lobster fishery was achieved in 2010.
2. Quotas for Total Allowable Catch (TAC) are in place, applied and regularly reviewed.
Target 7: SUSTAINABLE AGRICULTURE, AQUACULTURE and FORESTRY
1. An agricultural advisor visited Tristan in 2012 to assess and advise on agricultural practices.
2. Training was given to agriculture department staff on island as well as one member of staff receiving training in the Isle of Man.
Target 8: POLLUTION
Target 9: ALIEN INVASIVE SPECIES
1. Some invasive alien plant species are controlled (e.g. NZ Flax (<i>Phormium tenax</i>) at Nightingale and Inaccessible, and NZ Christmas Tree (<i>Metrosideros excelsa</i>) on Tristan).
2. Work to combat invasive mice on Gough Island is ongoing – a programme of research into the feasibility of eradicating mice should be complete in 2014.
3. Improving biosecurity on Tristan is a high priority, to prevent any further introductions. Biosecurity systems are in place on the smaller islands of Nightingale and Inaccessible, and are regularly reviewed.
Target 10: CLIMATE CHANGE
Strategic Goal C: To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity
Target 11: PROTECTED AREAS
1. Gough Island and Inaccessible Island were designated as Ramsar Wetlands of International Importance in 2008.
2. Some 44 per cent of the land area of Tristan da Cunha has been set aside for conservation and a joint 'Gough and Inaccessible Islands World Heritage Site Management Plan April 2010–March 2015' came into effect in 2010.
Target 12: EXTINCTION
1. Studies into the breeding biology and ecology of Northern Rockhopper Penguin (<i>Eudyptes</i>

<i>moseleyi</i>) were carried out in 2012/13, and in 2013/14 will continue in order to inform conservation management for this Endangered species.
2. The Critically Endangered Tristan Albatross (<i>Diomedea dabbenena</i>) is threatened by predation from House Mouse (<i>Mus musculus</i>) on Gough Island. A <i>Feasibility Study for the Eradication of House Mice from Gough Island</i> (the principal breeding site of this endemic species) was published in 2008 and logistics for a potential eradication will be trialled and assessed in 2013.
Target 13: GENETIC DIVERSITY
Strategic Goal D: Enhance the benefits to all from biodiversity and ecosystem services
Target 14: SAFEGUARDING ECOSYSTEM SERVICES
1. Objective 1.5. in the Tristan BAP aims to monitor the sheep stock levels and to reduce the number of feral sheep on the Base on Tristan. Erosion of soil and changes in vegetation composition caused by the impacts of feral sheep may affect the long-term hydrology of the island.
Target 15: CARBON STOCKS
Target 16: NAGOYA PROTOCOL
Strategic Goal E: Enhance implementation through participatory planning, knowledge management and capacity building
Target 17: NATIONAL BIODIVERSITY ACTION PLAN
The original Tristan Biodiversity Action Plan was reviewed and updated for the years 2012–2016 and is being implemented.
Target 18: TRADITIONAL KNOWLEDGE and USE
Target 19: INFORMATION SHARING
1. Objective 6 of the Tristan BAP aims to increase knowledge in Tristan's key habitats and species.
Target 20: FINANCIAL SUPPORT FOR IMPLEMENTATION of STRATEGIC PLAN FOR BIODIVERSITY
1. Funding was received from the UK government for projects including: Biodiversity Management Planning 2010-12; Baseline Vegetation Survey of Tristan 2011-12; Marine and fisheries project (2013-2015), planned census of Atlantic Yellow-nosed albatrosses on Tristan in 2014/15; deep water marine survey at Gough (2013); feasibility assessment of mouse eradication from Gough.
2. The South African government has supported two/three ornithologists to remain on Gough throughout the year to carry out ornithological research in 2013/14.
3. The RSPB raised almost £80,000 to support conservation work on Tristan da Cunha following the wrecking of the <i>MS Oliva</i> on Nightingale in 2011. A settlement with the insurers of the <i>Oliva</i> has secured resources to carry out penguin monitoring as from 2015.

Proportion of terrestrial and marine areas protected

Gough and Inaccessible Islands World Heritage Site and all breeding colonies of the Northern Rockhopper Penguin *Eudyptes moseleyi* on the Main Island, Tristan, have been declared Nature Reserves under the Conservation Ordinance 2006.

In total, some 44% of the land area of the Tristan da Cunha Islands is set aside for conservation.

Q11: What has been the contribution of actions to implement the Convention towards the achievement of the relevant 2015 targets of the Millennium Development Goals in your country?

Actions being taken to implement the Convention have certainly assisted in slowing the rate of biodiversity loss at Tristan. However, it is clear that further resources are needed

if loss of biodiversity and environmental resources is to be achieved (see MDGs 7.A and 7.B). There is good integration of the principles of sustainable development into Tristan's policies – indeed with a small, static human population, Tristan could aim to be a model sustainable community.

Q12: What lessons have been learned from the implementation of the Convention in your country?

The Tristan government and its partners have achieved an immense amount during the last decade. A new Conservation Department has been established and has grown from a staff of one to four full-time personnel. Many new programmes and projects have been started, and everyone has been involved – from school children to the oldest members of the community.

The main lessons we have learned is the value of working in international partnerships with NGOs, government, universities and others – as the remotest inhabited island in the world, Tristan has been visited by a huge range of experts from Canada, South Africa, New Zealand, Germany, the UK and elsewhere.

Integration of biodiversity considerations into other policies and recognising the financial value provided by biodiversity is very important. We need to increase investment in Tristan's biodiversity and enhance recognition of the global value of our biodiversity assets.

Although protecting our biodiversity will involve some huge challenges such as the possible eradication of mice from Gough Island, we are confident that together with our international partners we can meet these challenges and can secure the future of Tristan's remarkable wildlife, for the benefit of the islanders, and the world.

ANNEX 1

TRISTAN DA CUNHA BIODIVERSITY-RELATED LEGISLATION and NATIONAL ENVIRONMENTAL STRATEGIES ¹

Conservation Ordinance: The first Protection Ordinance was passed at Tristan in 1950, with several subsequent additions. The latest revision to the Conservation Ordinance was agreed by the Tristan Island Council in June 2005, and approved by the Attorney General in St Helena in January 2006. The objectives of this comprehensive legislation are the maintenance of fauna, flora, geological, scenic and historical features of the islands.

Fisheries Limits Ordinance: The Tristan da Cunha Fisheries Limits Ordinance of 1983, as amended in 1991, 1992, 1997 and 2001, defines the fisheries limit around each of the islands as 200 nautical miles, and makes provision for fishing within these limits.

Agricultural Ordinance: Land management on Tristan, and the export and import of livestock and fresh goods is controlled by the Agricultural Ordinance of 1984.

Important biodiversity related strategies include:

The 2001 Environment Charter

The Tristan da Cunha Biodiversity Action Plan 2006-2010 was developed through a Darwin project in 2006, this is now due for revision.

http://www.rspb.org.uk/Images/TristanBiodiversityActionPlan2_tcm9-180968.pdf

Wildlife monitoring manuals have been developed for the Tristan Islands.

<http://www.rspb.org.uk/ourwork/projects/details/227979-tristan-da-cunha-programme>

A **Management Plan for Gough and Inaccessible Islands 2010–2015** was developed through an OTEP project in 2010. These islands are a World Heritage Site.

The following information is based on an account supplied to us by the Isle of Man Government. Additional information was obtained from the following sources:

- Pelembe, T. and Cooper, G. (eds). 2011. *UK Overseas Territories and Crown Dependencies: 2011 Biodiversity Snapshot*. Peterborough, UK: Joint Nature Conservation Committee
- Cottam, M. (ed.). 2013. *Recent Conservation Achievements of UK Overseas Territories and Crown Dependencies and their Contributions to National Aichi Biodiversity Targets (2013)*. Peterborough, UK: Joint Nature Conservation Committee.

The UK's ratification of the Convention was extended to the Isle of Man in August 2012.

Part I: An update on biodiversity status, trends, and threats and implications for human well-being

Q1: Why is biodiversity important for your country?

Manx biodiversity contributes to the quality of life for islanders, while the marine life provides profitable fisheries (queen and king scallops, crabs and lobsters). Biodiversity is important to the Island as it brings visitors, to see the marine life (basking sharks and cetaceans, as well as for diving), to birdwatch and to walk the coastal path. Some of this value has been quantified. Our hills, plantations, glens and coast provide recreational and tourism services worth nearly £29 million a year, as well as water management services (flooding avoidance, quality and quantity) worth more than £13 million per year (Brander and McEvoy 2012). The value of our seafood based on Isle of Man scallop production was valued at £3,563,230 per year based on first sale landings data for 2011 (Mead *et al* 2013). Basking shark related tourism in Peel has been valued at £87,273 per year in 2009 (Clarke 2009), while the media coverage for charismatic species, using estimated advertising equivalent for 2008/2009 is worth £425,429 per year (Mead *et al* 2013).

Manx biodiversity has a cultural and social significance also, such as beech woods painted by William Hoggat, and the herring which was an important fishery and source of Manx kippers. Some animal and plant species have particular significance in Manx folklore and tradition (e.g. peregrine falcon, wren, elder), and this is of interest to historians and students of the Manx language.

The Isle of Man is notable for the wide variety of habitats in a small area (572km²). These include upland streams, rivers reservoirs and other wetlands. One, the Ballaugh Curragh, a mosaic of lowland peatland habitats, has been designated as a Ramsar site since 2006. The centre and south west of the island is made up of uplands with heather moorland with upland birds (including hen harriers). The coastline is diverse with cliffs and nesting sea birds, caves with nesting choughs, dunes, saltmarsh, sandy bays and shingle ridges.

As with all islands the terrestrial species diversity is less than on the adjacent land masses. The Flora of the Isle of Man (Allen 1984) noted that "*in every plant and animal order (except the wholly freshwater ones) that has so far been adequately worked, with striking consistency Man proves to have two-thirds of the Irish total and two-fifths of the British*". Islands, lacking some of the species common elsewhere, can also have

unusual ecosystems, with some rarer species thriving in the absence of competitors. The marine diversity is of particular interest and forms part of the wider Irish Sea ecosystem. The significant marine biotopes are horse mussel and Ross worm reefs, maerl beds and small seagrass beds.

It is also a feature of the island that some species are only found at single sites and are therefore highly vulnerable. These include such plants as lesser twayblade (*Listera cordata*), bee orchid (*Ophrys apifera*), and spring sandwort (*Minuartia verna*). The lesser mottled grasshopper (*Stenobothrus stigmaticus*) at its only British Isles station, occurs on one peninsular, Langness, within the Area of Special Scientific Interest.

Q2: What major changes have taken place in the status and trends of biodiversity in your country?

Changes in bird diversity are being monitored since the baseline survey in 2005 (Manx Bird Atlas) and annual repeat surveys are already showing some trends. In three years the repeat survey of breeding birds on the whole island should have been completed. For over 40 terrestrial species significant temporal variation was identified from the data available.

Table comparison of breeding birds between the first (1998–2005) and the second breeding bird Atlas (2006–2012)

Breeding birds	number of species	Number of schedule 1 specially protected species (%) in brackets	Notable increases (index >2) or decreases (index <0.5)	Number of species in 15 (4%) squares or less (out of 359)
Species declining significantly	13	4 (31%)	4 (31%)	2 (15.5%)
Species increasing significantly	27	5 (18.5%)	8 (29.5%)	4 (15%)

Declines in species occurring at low frequencies are rarely statistically significant but for the species concerned the losses are highly significant.

No other species are being systematically monitored, although there is potential to use butterfly transects, bat road transects, roadside mammals and bird and plant monitoring for biodiversity indicators.

The monitoring of biodiversity between now and the next reporting date should be easier because biodiversity indicators are being developed and the unified database has been established. We know species are being lost in the wild. Corncrake (*Crex crex*) and redshank (*Tringa totanus*) no longer breed here. Breeding yellowhammers (*Emberiza citrinella*) and hen harriers (*Circus cyaneus*) have declined greatly. Several orchids have not been recorded for more than two decades. Other species have increased and there have been new arrivals; Comma (*Polygonia c-album*) and speckled wood (*Pararge aegeria*) butterflies. We are working on a list of Priority Species associated with the Biodiversity Strategy and Delivery Plan.

Q3: What are the main threats to biodiversity?

Habitat loss

A repeat habitat survey is needed to quantify habitat loss and change (first undertaken in 1991–1994). Lowland semi-improved neutral grassland has significantly reduced in area due to developments and changes in grassland management since then, and ponds and wetlands have been lost through infilling and drainage. Natural limestone grassy slope and low cliff on the coast has been lost under an airport runway extension in 2009.

Invasive species

There are a number of species considered to be non-native and invasive in the British Isles and elsewhere in Europe although some may not yet have shown indications of being invasive on the Isle of Man. Coarse fish have been moved between ponds, while some species; Japanese knotweed, *Falopia japonica* and Wireweed, *Sargassum muticum*, are spreading of their own accord. The project to eradicate brown rats on the Calf of Man (2012/13) is expected to benefit burrow-nesting sea birds such as Manx shearwater, puffin and storm petrel (breeding suspected not proven in the latter case).

Summary of known invasive species in the Isle of Man

Plants	Invertebrates	Reptiles	Fish	Birds	Mammals	Amphibians
35 +3 marine	8 + 2 marine	2	9	7	9	3

Climate change

Currently DEFA is contributing to work by the Marine Biological Association on rocky shore invertebrates which are marine indicators of climate change. No analysis has been done on which habitats could be affected by climate change, but sea-level rise and increased storminess could threaten our saltmarshes and dune systems, as well as the soft cliffs in the north of the Island. No analysis has been done on which species could be affected by climate change but the only alpine plant, dwarf willow (*Salix herbacea*) on Snaefell could be affected.

Development, both terrestrial & marine

This does not just cause habitat loss, but, also direct mortality, barriers to migration, change in predator/prey relationships, noise disturbance, increased risk of vessel strike, and increased opportunity for spread of invasive species.

Q4: What are the impacts of the changes in biodiversity for ecosystem services and the socio-economic and cultural implications of these impacts?

The main economic sectors for the Isle of Man include financial services (37 per cent of GDP), construction (6 per cent), manufacturing (7 per cent), professional services (21 per cent), tourism (5 per cent), farming and fishing (1 per cent) (2007/8 figures). E-gaming is now 5 per cent (2011). In 2012, the Manx economy expanded by 3 per cent in real terms against an average of 1.4 per cent across the OECD. The local economy is projected to grow at a faster rate in 2013, by around 4 per cent, considerably higher than the OECD average of 1.4 per cent expected this year.

Japanese knotweed, already mentioned, must have added significant costs to some developments. Sharks and choughs are probably having positive impact on ecotourism, changes in hen harriers perhaps negative, though no evidence to support this.

As elsewhere such as the Clyde, damage to marine habitats has been shown to reduce the target species productivity. Similar fisheries changes have been seen in Manx waters, however this has not been quantified.

Optional question: What are possible future changes for biodiversity and their impacts?

Part II: The national biodiversity strategy and action plan, its implementation, and the mainstreaming of biodiversity

Q5: What are the biodiversity targets set by your country?

There are 39 strategic actions under seven objectives in the draft Biodiversity Strategy. These include:

Strategic action number	Details
13	By 2015 the Island and its waters put forward to UNESCO as a proposed Biosphere Reserve.
14	By 2020 at least 17 per cent of land and inland water and 10 per cent of our marine ecosystem will be conserved through effectively managed, ecologically representative and well-connected protected areas and other effective area-based conservation measures. On land, at least 10 per cent of this will be in highly protected designations (percentages are based on the proportion of semi-natural habitat on the Isle of Man).
15	By 2014 DEFA and other Departments promote and operate a policy 'no net loss' for key Manx habitats and species and ensure that unavoidable loss is replaced or effectively compensated for.
16	By 2017 repeat the land use and habitat (phase 1) survey to understand rates of habitat loss, and help prioritise habitat and species conservation.
28	By 2015 draw up and begin implementing an Invasive Non-native Species Strategy.
36	By 2015 assess the viability of Marine Stewardship Council accreditation of all major Manx sea fisheries, with an aim of accreditation by 2018, implementing appropriate legislation, and the necessary training and science programmes.

Q6: How has your national biodiversity strategy and action plan been updated to incorporate these targets and to serve as an effective instrument to mainstream biodiversity?

The draft of the Island's first Biodiversity Strategy was completed in 2013 and refers to the Aichi Biodiversity Targets. It is out to public consultation, due to end 30 September 2013. Following the approval of this document and laying before Tynwald (the Isle of Man Parliamentary body), an action/delivery plan will be drafted.

Q7: What actions has your country taken to implement the Convention since the fourth report and what have been the outcomes of these actions?

Implementation of the *Strategic Plan for Biodiversity 2011-2020* (CBD 2010) and its Aichi Biodiversity Targets are covered in detail under Question 10.

Although the island only became party to the CBD in August 2012, there have been many actions which have been undertaken to meet the CBD objectives (see the full report provided before becoming party to the convention in 2012).

In addition to its core work, the Isle of Man has undertaken a number of marine and terrestrial projects over the last five years, including the marine spatial planning project, Point of Ayre gravel pit restoration project, the basking shark project, a native wildflower nursery, bat survey road transects and designation of a Marine Nature Reserve.

Q8: How effectively has biodiversity been mainstreamed into relevant sectoral and cross-sectoral strategies, plans and programmes?

The Department of Environment Food and Agriculture (DEFA) is the lead organisation in the Isle of Man Government for biodiversity.

Under section 36 of the Wildlife Act all departments, boards and offices have a duty to have regard for “*the conservation and enhancement of the natural beauty and amenity of the countryside, the protection of wildlife habitat, and the conservation of flora and fauna and geological or physiographical features of interest*”. DEFA work with these bodies to improve consideration of biodiversity in their activities.

Biodiversity considerations are integrated into the Isle of Man Strategic Plan: ‘towards a sustainable island’ (<http://www.gov.im/media/633491/modifieddraftwrittenstatement.pdf>). This is likely to be reviewed in the light of the economic situation.

DEFA has integrated biodiversity officers and responsibilities into the directorates of agriculture, forestry fisheries and environmental protection. The integrated work is encapsulated in the DEFA service delivery plan.

Q9. How fully has your national biodiversity strategy and action plan been implemented?

It is too early to report on implementation of the draft Biodiversity Strategy and the delivery plan is not yet written. However we do already have some national legislation and we are implementing many aspects of the strategy (see Question 10).

The Isle of Man now has at least eight wildlife laws the most important of which is the Wildlife Act 1990. This Act protects birds, other animals and plants, controls introductions to the wild, enables marine and terrestrial site protection and controls the keeping of certain birds.

Part III: Progress towards the 2020 Aichi Biodiversity Targets and contributions to the relevant 2015 Targets of the Millennium Development Goals

Q10: What progress has been made by your country towards the implementation of the Strategic Plan for Biodiversity 2011-2020 and its Aichi Biodiversity Targets?

ISLE OF MAN
RESPONDENTS: Department of Environment, Food and Agriculture, IOM.
Strategic Goal A:
Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society
Target 1: AWARENESS
1. We held three Bioblitzes in 2011 and 2012.
2. Marine biodiversity course is now accredited.
3. Regular marine lectures and public marine touch tank events.
4. New Environmental Education Network established 2012.
5. Regular news releases, newsletter and website www.manxbiodiversity.org and Facebook page.
6. Biodiversity education offered to all Island schools, with about 3,000 children per year taught about Manx biodiversity.
7. The new gov.im website incorporates designated (ASSI) site details and maps.
Target 2: INTEGRATION
1. Marine biodiversity objectives integrated into draft Manx Marine Plan, based on the ecosystem approach.
2. Biodiversity team members moved into the environment, fisheries, forestry, agricultural and environmental protection divisions of Department of Environment Food and Agriculture to integrate delivery of biodiversity objectives.
3. Biodiversity continues to be a material consideration in planning applications.
4. Sector discussion groups contributed to the draft biodiversity strategy, engaging partners in the issues.
Target 3: INCENTIVES and SUBSIDIES
1. Countryside Care Scheme (single farm payment scheme for farmers) has cross compliance requirement not to destroy habitats without DEFA permission.
2. Fishermen allowed to fish within fisheries management zone of Marine Nature Reserve if can show it is sustainably managed.
3. Agri-environment Scheme (value £150,000 in 2012) has been reviewed in last two years.
Target 4: SUSTAINABLE PRODUCTION and CONSUMPTION
1. EIA assessments implemented as good practice on land and marine planning proposals would make EIA necessary for most developments in the sea.
Strategic Goal B:
Reduce the direct pressures on biodiversity and promote sustainable use
Target 5: HABITAT LOSS
1. Countryside Care Scheme for farmers controls habitat loss on participating farms.
2. Survey of a sample of undesignated sites of nature conservation importance, in lowlands, taking place 2012-13, to ascertain the level of habitat loss, change and deterioration.
3. Planning system recognises the importance of biodiversity in planning decisions (Island Strategic Plan – towards a sustainable Island).
Target 6: SUSTAINABLE FISHERIES
1. Now 4 per cent of the sea is in marine protected area, either as Marine Nature Reserve, closed area to dredging and trawling gear, or areas for ranched shellfish production.
2. MSC accreditation for Manx Queenies (queen scallops).
3. Shellfish conservation measures in place (size, season and gear).
4. Members of shark family being tagged and tracked; tope and basking sharks.

Target 7: SUSTAINABLE AGRICULTURE, AQUACULTURE and FORESTRY
1. Area in tiers 2 and 3 of agri-environment scheme (active conservation management) 5,028ha or 12,422 acres – 11 per cent of farmland.
2. Plans are being developed that review the use of conifer plantations and take account of recreational and biodiversity value.
Target 8: POLLUTION
1. Water Pollution Act 1991 fully enacted, pollution events investigated and cautions and prosecutions progressed.
2. In 2012 a record number of rivers classified as "good" and "excellent". 94 per cent of Manx rivers are of "good" or better chemical water quality and 98 per cent are "fair" or "better"
3. 89 per cent of bathing water passed the standards laid down in 1976 EC Bathing Water Directive.
Target 9: ALIEN INVASIVE SPECIES
1. Dutch Elm Disease on any land and sudden oak death and Japanese knotweed being controlled by Dept of Environment, Food and Agriculture on own land (costing £300,000 in 2012).
2. The schedule of plant species which are invasive and need to be prevented from spreading in the wild through the Wildlife Act has been revised. Also changes being made to take a more rounded and less draconian legal approach to weeds such as ragwort, with biodiversity benefits.
3. Giant Hogweed mostly destroyed following work over the last 10–20 years.
4. Alien freshwater fish surveys were undertaken and measures taken to avoid further imports.
Target 10: CLIMATE CHANGE
1. Government has set target that by 2050 the island will reduce levels of CO ₂ emissions to 80% of their 1990 level.
Strategic Goal C: To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity
Target 11: PROTECTED AREAS
1. 2,677ha (6,607 acres) or 4.55 per cent of land is designated Area of Special Scientific Interest (2013). Designation continues with an annual target.
2. Now 4 per cent of the sea is in marine protected area, either as Marine Nature Reserve, closed area to dredging and trawling gear, or areas for ranched shellfish production.
3. Area in tiers 2 and 3 of Manx Agri-environment Scheme (active conservation management) 5,028ha or 12,422 acres – 11 per cent of farmland (2013).
4. 1,012–1,214ha (2,500–3,000 acres) of land in Manx National Heritage ownership and protected under the Manx Museum and National Trust Act
Target 12: EXTINCTION
1. Manx Plant Conservation Audit completed in 2012
2. Manx Birds of Conservation Concern listed and about to be published.
3. Conservation project centred on basking sharks (DNA and tracking).
4. Wildflowers of Mann project has been rescuing and propagating endangered plant species for reintroduction into safe and suitable sites.
5. Return of a viable population of juniper is planned as a part of a new project to extend and join together woodlands in the Ramsey area; Ramsey Forest Project.
Target 13: GENETIC DIVERSITY
1. Wildflowers of Mann project promotes use of native wildflower species and provides local genotypes.
2. Product of Designated Origin for Loaghtan sheep has conserved genetic type.
3. The Noah's Ark project is providing British rare livestock breeds with isolation from most diseases on the Isle of Man.
Strategic Goal D: Enhance the benefits to all from biodiversity and ecosystem services
Target 14: SAFEGUARDING ECOSYSTEM SERVICES
1. Drain blocking on some areas of Manx moorland has ensured peat oxidation is reduced and healthy moorland habitats restored or maintained.
Target 15: CARBON STOCKS

1. Carbon stocks in soils assessed. The total amount of C stored in Isle of Man soils is 4.76 million tonnes. This is equivalent to 17.45 million tonnes of CO ₂ .
Target 16: NAGOYA PROTOCOL (Not applicable.)
Strategic Goal E: Enhance implementation through participatory planning, knowledge management and capacity building
Target 17: NATIONAL BIODIVERSITY ACTION PLAN 1. Draft of first Strategy is out for public consultation until 30 September 2013. Action plan to follow by July 2014.
Target 18: TRADITIONAL KNOWLEDGE and USE
Target 19: INFORMATION SHARING 1. Three main biological databases have been merged into one and made available in and outside government through an NGO. 2. Gaps in knowledge being identified and specialist being brought in to train and increase knowledge, (recently have trained in lichens, moths, ferns and fungi).
Target 20: FINANCIAL SUPPORT FOR IMPLEMENTATION of STRATEGIC PLAN FOR BIODIVERSITY 1. Baseline funding availability has been quantified. DEFA £463,000 (2012). MNH not yet available. £50,000 so far available in the national Biodiversity Fund for biodiversity work which is not a government responsibility. Fund to be built up before grants offered.

Proportion of terrestrial and marine areas protected

Under the Wildlife Act government may designate; Areas of Special Scientific Interest (ASSI) (currently 16 designated); National Nature Reserves (currently one designated); Marine Nature Reserves (currently one designated); Areas of Special Protection for Birds, Plants or Animals (currently one designated).

The Island is aiming to have at least 10 per cent of the land area protected by ASSI designation with 2,677ha (6,607 acres) or 4.55 per cent of land currently designated. The Draft Biodiversity Strategy target is for 17 per cent of land and inland water to be conserved through effectively managed, ecologically representative and well-connected protected areas and other effective area-based conservation measures.

Among the most important areas are the Ayres, Ballaugh Curragh and the Calf of Man.

- The Ayres National Nature Reserve is wardened and managed for its conservation interest, especially breeding birds; little tern (*Sternula albifrons*), curlew (*Numenius arquata*), oystercatcher (*Haematopus ostralegus*) and ringed plover (*Charadrius hiaticula*). There are also rare invertebrates on the reserve; lesser bee fly (*Bombylius minor*), scarce crimson and gold moth (*Pyrausta sanguinalis*) and grayling butterfly (*Hipparchia semele*).
- In 2006 the Ballaugh Curragh was designated as a Ramsar site. It is an area of nearly 200 hectares of lowland deep peat with willow scrub, wet heath, pools and streams. It has legal protection through being an Area of Special Scientific Interest. Much of it is also Manx National Heritage and Manx Wildlife Trust land.
- The Calf is owned and managed by Manx National Heritage and is important for nesting seabirds including a recovering population of Manx Shearwater (*Puffinus puffinus*); Razorbill (*Alca torda*) and Shag (*Phalacrocorax aristotelis*). Storm Petrel (*Hydrobates pelagicus*) and Puffin (*Fratercula arctica*) may breed there again if the current rat removal is successful. Chough (*Pyrrhocorax*

pyrrhocorax) and Hen Harrier (*Circus cyaneus*) also breed on the calf, and migrant birds are monitored and recorded by the Calf of Man Bird Observatory staff who are present 8–9 months each year.

- The Government designated a Marine Nature Reserve in 2011 and envisages a network of marine protected areas as well as fisheries management measures which will conserve the seabed and its biodiversity including fish and shellfish stocks. The draft Biodiversity Strategy target is 10 per cent of our marine ecosystem will be conserved through effectively managed, ecologically representative and well-connected protected areas and other effective area-based conservation measures.

Other land protected through ownership includes Manx Wildlife Trust reserves the glens owned by DEFA and land owned by Manx National Heritage.

Isle of Man terrestrial protected areas with legal status (note some of these areas may overlap).					
Area of Special Scientific Interest	Ramsar site	Area of Special Protection for birds	National Nature Reserve	Land protected under the Manx Museum and National Trust Act	Bird Sanctuaries
2,175ha 5,367 acres	193ha 478 acres	4ha 10 acres	272ha 673 acres	1,012–1,214ha 2,500-3,000 acres	397ha 981 acres

Q11: What has been the contribution of actions to implement the Convention towards the achievement of the relevant 2015 targets of the Millennium Development Goals in your country?

Too early to report

Most relevant MDGs to this report are:

Target 7.A: *Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources.*

Target 7.B: *Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss.*

Q12: What lessons have been learned from the implementation of the Convention in your country?

Too early to report.

ANNEX 1:

ISLE of MAN BIODIVERSITY-RELATED NATIONAL LEGISLATION:

The earliest wildlife legislation was the 1867 Sea Gull Preservation Act, which conserved seagulls from those wishing to exploit their feathers, in appreciation for their role in cleaning up the sea from fisheries waste.

- The Wild Birds Protection Act 1932
- Protection of Birds Act 1955
- Manx Museum and National Trust Act 1959
- Destructive Imported Animals Act 1963
- Wild Animals (Restriction on Importation) Act 1980
- Endangered Species (Import and Export) Act 1981
- Wildlife Act 1990
- Endangered Species Act 2010

Of these, the most important is the Wildlife Act 1990. This Act protects birds, other animals and plants, controls introductions to the wild, enables marine and terrestrial site protection, and controls the keeping of certain birds.

The following information is based on an account supplied to us by the Government of Jersey. Additional information was obtained from the following sources:

- Pelembe, T. and Cooper, G. (eds). 2011. *UK Overseas Territories and Crown Dependencies: 2011 Biodiversity Snapshot*. Peterborough, UK: Joint Nature Conservation Committee.
- Cottam, M. (ed.). 2013. *The UK Overseas Territories Biodiversity Strategy – Review of Progress*. UKOTA, Joint Nature Conservation Committee.
- Cottam, M. (ed.). 2013. *Recent Conservation Achievements of UK Overseas Territories and Crown Dependencies and their Contributions to National Aichi Biodiversity Targets (2013)*. Peterborough, UK, Joint Nature Conservation Committee.

Part I: An update on biodiversity status, trends, and threats and implications for human well-being

Q1: Why is biodiversity important for your country?

The Channel Island's geographic location, sheltered by the bay of St Malo and warmed by the Gulf Stream, creates a temperate climate providing the conditions required for many species, especially plants, more likely to be found in more southern European regions.

The States of Jersey's Strategic Plan, states five key visions, one of which is 'protecting our Environment', recognising the importance of the environment to islanders.

With a population density of over 850 people per square kilometre, the natural environment is important for leisure and recreation, health and wellbeing. A public consultation exercise on the ageing population identified that the overwhelming majority of residents wish to protect the natural and farmed environment over development.

Sites of ecological interest are protected through designation under the Planning & Building (Jersey) Law 2002. Such sites include the sand dunes of Les Blanchés Banques and the heathlands of Les Landes and Les Lande du Ouest.

The island's marine environment, important for leisure and the fishing industry, is increasingly protected from over exploitation, with the designation of RAMSAR sites and other closed areas for mobile fishing gear. The quality of the natural environment is also highly important for the small, but significant Tourism industry.

Q2: What major changes have taken place in the status and trends of biodiversity in your country?

Butterflies

- 2013 is the 10th year of the Jersey Butterfly Monitoring Scheme. A report will be produced next year by the Department of the Environment on the findings of the 10 year survey.
- Surveys are showing that areas which are managed (for example under the Countryside Enhancement Scheme) are proving important habitats for butterflies.

Birds

- Overall trends in bird populations are showing a general decline. Surveys have been carried out on garden birds, wading birds and the Breeding Bird Survey is also carried out in Jersey.
- In 2011, a Red List of bird species in Jersey was produced by Durrell, Societe Jersiaise and the States of Jersey, titled 'Conservation Status of Jersey's Birds'. The list sets out criteria to designate Jersey's bird species into red, amber and grey lists.
- The Birds on the Edge partnership between Durrell, States of Jersey and The National Trust for Jersey in 2010. The aims of the project involve restoring coastal habitats and the re-introduction of the red-billed chough (*Pyrrhocorax pyrrhocorax*) to Jersey. Earlier this year (2013) the release programme for these birds began.

Bats

- The number of bats species recorded in Jersey has recently increased from 10 to 12 known species. In the summer of this year a Greater Horseshoe Bat (*Rhinolophus ferrumequinum*) was detected and there are further investigations ongoing into this discovery (last known record was in 1959). Serotines (*Eptesicus serotinus*) have also been confirmed to roost in Jersey recently.
- Bats are currently being monitored by the Department of the Environment using the iBats methodology. The results have yet to be analysed. The Jersey Bat Group survey various buildings across the Island and maintain a roost register.

Amphibians

- Amphibians are monitored by the Jersey sub-group of the National Amphibian and Reptile recording Scheme, led by the Department of the Environment. The Jersey NARRS Report 2010 has stated that toad numbers are thought to be declining. The toadwatch campaign helps to monitor numbers. Palmate newts were once thought to be widespread however this may not be the case and needs further investigating.
- Jersey is the only location in the British Isles where the agile frog exists. They breed at only two sites on the Island. The Department of the Environment have been collecting spawn from these sites to be held at Durrell. Durrell and States of Jersey staff then release the froglets back to their original site.

Reptiles

- Reptiles are monitored by the Jersey sub group of the National Amphibian and Reptile recording Scheme, led by the Department of the Environment. The Jersey NARRS Report 2010 has stated that the occupancy of green lizards in Jersey is good. Wall lizards have been confirmed in two more locations, on the North Coast. The use of refugia for the detection of slow-worms will hopefully improve the results of their occupancy. Grass snakes are also rare in Jersey, with the records occurring mainly in the south west of the Island. A Grass snake PhD will begin in 2014

BAPS

- There are currently 52 action plans covering plants, insects, mammals, birds, amphibians, reptiles, fish and a mollusc. More recently, two habitat types have been added. The BAPs came out of the report produced in 2000 titled, 'Biodiversity; a strategy for Jersey'.

Q3: What are the main threats to biodiversity?

Invasive species:

Many of the species introduced to Jersey over the years have settled into the native flora and fauna and have found niches that do not conflict with the natives. However, a number are or are becoming problematic due to prolific reproduction or vegetative spread. A few native plant species such as bracken *Pteridium aquilinum* agg. and western gorse *Ulex europeaus* are very invasive in a range of habitats and are economically of the greatest impact. However, invasive alien species such as Hottentot fig *Carpobrotus edulis* cover extensive areas of coastline to the detriment of the native flora and fauna, but due to the terrain, are extremely difficult to manage. Many alien species are already or are becoming highly invasive and a strategy for their management is currently being produced.

Development:

Habitat loss is a threat to connectivity of semi-natural habitats and the small incremental development, erodes the robustness of the remaining semi-natural habitat. The Jersey Island Plan is a robust development control policy and aims to reduce this impact. In addition the implementation of mitigation in developments aims to reduce the impact of development on biodiversity.

Agriculture:

The intensive potato industry is production led and due to the small field sizes is not sympathetic to biodiversity. Various initiatives, including funding mechanisms, aim to reduce inputs and encourage good practice. The single area payment is also now conditional on good environmental practice.

Q4: What are the impacts of the changes in biodiversity for ecosystem services and the socio-economic and cultural implications of these impacts?

International business (banking, insurance along with fund, company and trust administration) accounts for 50 per cent of Jersey's economic activity with tourism, agriculture and fisheries, retail, construction, manufacturing, utilities, transport and other business activities contributing to the other 50 per cent.

The loss of breeding populations of yellow hammer and the decline in meadow pipits and other species is a cultural loss to the residents of Jersey. The locally iconic Toad *Bufo bufo* ('Crapaud' in Jersey French), continues to decline in distribution and numbers through habitat loss, which loss is of great local significance.

Water quality is impacted by the intensive agricultural industry, leading to a reduction in biodiversity.

Jersey's only snake, the Grass snake *Natrix natrix* survives in low population numbers. A PhD has been commissioned to investigate the reasons for the decline of this species.

Optional question: What are possible future changes for biodiversity and their impacts?

Part II: The national biodiversity strategy and action plan, its implementation, and the mainstreaming of biodiversity

Q5: What are the biodiversity targets set by your country?

The 'Biodiversity Strategy for Jersey' lists five objectives;

To conserve and where practicable, to enhance;

- a. The overall populations and natural ranges of native species and range of wildlife habitats and ecosystems;
- b. Internationally important species, habitats and ecosystems;
- c. Species, habitats and natural and managed ecosystems that are characteristic of local areas;
- d. The biodiversity of natural and semi-natural habitats where this has been diminished over recent past decades;
- e. Increase public awareness of, and involvement in, conserving biodiversity, and to contribute to the conservation of biodiversity on a European and global scale.

These objectives do not currently have targets, which intend to be set in the revised Policy during 2014/2015.

In addition, a 'Protected Areas Policy' is currently in draft which will set targets for protecting a range of habitats in Jersey.

Q6: How has your national biodiversity strategy and action plan been updated to incorporate these targets and to serve as an effective instrument to mainstream biodiversity?

Biodiversity Action Plans for habitats and species are produced and implemented through diverse means, the 'Biodiversity Strategy for Jersey' is proposed for revision during 2014.

Q7: What actions has your country taken to implement the Convention since the fourth report and what have been the outcomes of these actions?

Implementation of the *Strategic Plan for Biodiversity 2011-2020* (CBD 2010) and its Aichi Biodiversity Targets are covered in detail under Question 10.

Terrestrial projects:

- Energy Efficiency Study
- Hydrocarbons Pipelines Feasibility Study
- Jersey Deep Groundwater Investigation Report
- Jersey Energy Sector Review
- Natural Resources Study
- Draft Energy White Paper: The Challenge Ahead: Policy 34 Participating in climate change studies and adapting to the predicted effects of climate change.

Marine projects:

The MEA undertake Research and Development projects each year to provide data to inform the management of various commercial species and the wider marine

environment. Projects include stock assessment and habitat assessment and routine monitoring:

- Whelk (*Buccinum undatum*) (see Fisheries and Marine Annual Report 2009; Morel and Bossey 2004)
- Lobster (see Fisheries and Marine Annual Report 2009)
- Ormer (see Fisheries and Marine Annual Report 2009)
- Ray (see Fisheries and Marine Annual Report 2009)
- Scallop (see Morel and Bossey 2011)
- Skate (see Ellis *et al* 2010)

Case Study: Protecting the Agile frog (Late 1980's – ongoing):

The agile frog *Rana dalmatina* is distributed widely throughout much of southern and central Europe, but is found in only a few northern locations including Jersey – the frog is not found anywhere else in the British Isles. The Jersey population of the agile frog has been declining in both range and numbers since the early 1900s. By the 1970s only seven localities were listed where the frog could still be found, and by the mid-1980s this had fallen to only two sites.

Main outcomes: In the late 1980s, The Agile Frog Group (AFG), now known as JARG – Jersey Amphibian & Reptile Group – was formed to try to stop the potentially terminal decline of the agile frog in the wild, through a program of captive-breeding, re-introduction to the wild and careful management of suitable habitat. Significant progress has been made in the areas of habitat management, captive breeding and re-introductions to the wild. However, the future of Jersey's agile frog is still far from secure as the factors which probably played a key role in the frogs decline are still very much in evidence

Q8: How effectively has biodiversity been mainstreamed into relevant sectoral and cross-sectoral strategies, plans and programmes?

The States of Jersey's Strategic Plan, states five key visions, one of which is 'protecting our Environment', recognising the importance of the environment to islanders.

An initiative 'EcoActive' provides five themes for local business and individuals to join up to, providing guidance on key issues such as sustainability, energy use, biodiversity mainstreaming, etc.

There is still some way to go before biodiversity is mainstreamed into all Departmental Government Policies.

Q9. How fully has your national biodiversity strategy and action plan been implemented?

National environmental legislation: Jersey has at least 23 laws that relate directly to the environment and/or biodiversity conservation (see Annex 1).

National environmental strategies: Jersey has at least 13 strategies that provide a policy framework for its environment and biodiversity. This includes a Biodiversity Strategy and associated Biodiversity Action Plans (see Annex 2).

The legal protection of habitats is provided for under the **Planning and Building (Jersey) Law 2002**, which designates buildings or places of ecological, zoological, botanical or geological value as Sites of Special Interest. This is the only existing form of habitat protection available to the States of Jersey and forms an essential part of local environment policy to enable the island to comply with international commitments.

A Coastal National Park is currently in development.

The **Conservation of Wildlife (Jersey) Law 2000** protects a large number of local species. It is currently under review to ensure a strong legislative framework for species protection.

The **Biodiversity Strategy for Jersey** is the main policy document for habitat and species conservation in Jersey. The strategy identifies 10 key habitats and provides a format for the production of Species Action Plans for species of conservation concern. A phase 1 habitat survey was carried out in 2011.

Part III: Progress towards the 2020 Aichi Biodiversity Targets and contributions to the relevant 2015 Targets of the Millennium Development Goals

Q10: What progress has been made by your country towards the implementation of the Strategic Plan for Biodiversity 2011-2020 and its Aichi Biodiversity Targets?

JERSEY
RESPONDENTS: States of Jersey, Department of the Environment.
Strategic Goal A: Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society
Target 1: AWARENESS
1. The Jersey Conservation Volunteers has been developed into a group which meet monthly to carry out conservation projects.
2. Eco-Active is a departmental, public awareness initiative with several themes (energy, waste, etc) which includes biodiversity.
3. Proposed changes, later this year, to our Development Control (Planning) system, will ensure that biodiversity is addressed better in terms of mitigation of impacts.
4. School groups (mainly Primary) continue to carry out site visits with the Natural environment Team to learn about local biodiversity issues.
Target 2: INTEGRATION
1. The 'State of Jersey' is a five-yearly report which provides progress on a number of measures including biodiversity issues.
2. Proposals in place to develop a local ecosystem services study, but nothing in progress at present.
3. Currently working on an amended development control process which takes better account of biodiversity issues and requires comprehensive mitigation. <i>(Hoping to do a local evaluation of ecosystem services in next few years).</i>
Target 3: INCENTIVES and SUBSIDIES
1. Single area payments to agriculturalists are now linked to conditionality (for positive biodiversity measures). <i>(The local agricultural industry is dependant upon the 'Jersey Royal' potato. This is a very hungry and unsustainable crop. The reduction of impact on ecosystem services is very important locally.)</i>

Target 4: SUSTAINABLE PRODUCTION and CONSUMPTION
1. Sustainable lobster fishery in local waters.
2. Food security strategy being developed.
3. New (reduced pollution) energy from waste plant constructed to deal with Island's waste.
4. Target of 36 per cent set for recycling materials.
5. Investigations into renewal energy production in local waters are ongoing.
Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use
Target 5: HABITAT LOSS
1. Currently working on an amended development control process which takes better account of biodiversity issues and requires comprehensive mitigation.
2. Protected area strategy in draft.
3. National Park management plan in draft.
Target 6: SUSTAINABLE FISHERIES
1. Sustainable lobster fishery in local waters.
2. Food security strategy being developed.
<i>(Sustainable consumption is a difficult target, not likely to be met in the current global economic model. It is not likely to be politically acceptable. It is unrealistic to expect a small island community with a very high standard of living to be sustainable in current economic models.)</i>
Target 7: SUSTAINABLE AGRICULTURE, AQUACULTURE and FORESTRY
1. The local agricultural industry is dependant upon the 'Jersey Royal' potato. This is a very hungry and unsustainable crop. The reduction of impact on ecosystem services is very important locally.
<i>(It is unlikely that agricultural support would be sufficient to offset negative impacts of agriculture, though efforts continue to be made to reduce inputs.)</i>
Target 8: POLLUTION
1. Efforts are continuing to be made to reduce nitrates in ground water.
2. Successful enforcement work against agrochemical pollution of surface and ground water ongoing.
3. Educational / enforcement of legislation and scheme for catchments in addition to codes of good agricultural practice ongoing.
Target 9: ALIEN INVASIVE SPECIES
1. NNS strategy in development.
2. Management and eradication programmes ongoing for various species.
3. Proposals for cross administrative region working to support NNS management.
Target 10: CLIMATE CHANGE
1. Energy efficiency programme well-funded.
2. Energy policy in draft.
3. Low carbon nuclear power is main source of electricity.
4. Proposals to develop local tidal / wave / wind electricity generation.
Strategic Goal C: To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity
Target 11: PROTECTED AREAS
1. Protected area strategy in draft - implementation will be developed.
2. National Park management plan in draft.
3. Habitat corridors proposals in development.
Target 12: EXTINCTION
1. Ongoing work to support the most threatened species locally.
Target 13: GENETIC DIVERSITY
1. Island herd of Jersey cattle well managed, but greater need to stop importation of 'wild plants' which erode genetic integrity of native provenance.
Strategic Goal D: Enhance the benefits to all from biodiversity and ecosystem services
Target 14: SAFEGUARDING ECOSYSTEM SERVICES

Target 15: CARBON STOCKS
Target 16: NAGOYA PROTOCOL
Strategic Goal E: Enhance implementation through participatory planning, knowledge management and capacity building
Target 17: NATIONAL BIODIVERSITY ACTION PLAN
1. Updated policy proposed for 2014.
Target 18: TRADITIONAL KNOWLEDGE and USE
1. Marine Resources Strategy out for public consultation (<i>less relevant for Jersey, however, traditional industries such as fishing are well supported</i>).
Target 19: INFORMATION SHARING
(<i>Rather like Target 1, this is unclear and difficult to implement.</i>)
Target 20: FINANCIAL SUPPORT FOR IMPLEMENTATION of STRATEGIC PLAN FOR BIODIVERSITY
1. Funding for nature conservation has been improved following successful bids in 2013.
2. Capital funds for site management sourced from 2014 – 2016.

Proportion of terrestrial and marine areas protected

Jersey has 16 terrestrial protected areas, which are designated under local legislation as Site of Special (ecological) Interest (SSI), and a further 21 geological SSI's. In addition there are four designated Ramsar sites.

There are currently no legally protected marine conservation areas; however, in the marine environment, there are also the following restrictions:

- No Trawl/Dredge areas – St. Aubin's bay and East Coast
- No mobile gear in 0–3 mile limit if vessel's engine is $\geq 225\text{Kw}$
- Regulated area for Beam Trawling
- Les Minquiers Parlour pot-free zone
- Pot limitation Scheme
- Spider Crab seasonal ban
- Granville Bay Zone Access Permit Scheme

Proportion of species threatened with extinction

A large proportion of Jersey's flora has been introduced over the past few centuries, and a number of species of our flora and fauna have become locally extinct, including in the past 20 years; the stoat *Mustela erminea*, Cirl bunting *Emberiza cirlus* and the yellow hammer *Emberiza citronella*.

Q11: What has been the contribution of actions to implement the Convention towards the achievement of the relevant 2015 targets of the Millennium Development Goals in your country?

Most relevant MDGs to this report are:

Target 7.A: *Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources.*

The Jersey Island Plan 2011, details our development control policies and makes the protection of the Islands natural habitats and protected species key material issues

Target 7.B: *Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss.*

The development of local mitigation initiatives through development control is slowing the impact of development and habitat loss on local biodiversity.

Funding mechanisms such as the Countryside Enhancement Scheme (Jersey's Agri-environment scheme) enable more biodiversity friendly farming practices.

Q12: What lessons have been learned from the implementation of the Convention in your country?

- It can be beneficial to have external scrutiny in order to drive environmental gains
- It feels supportive to be part of an international affiliation such as CBD
- It is important to ensure that adequate resources are in place for implementation
- It is important to ensure that the correct skills are available to enable implementation
- That support is available from other organisations is important

ANNEX 1:

JERSEY BIODIVERSITY-RELATED NATIONAL LEGISLATION

Planning and Building (Jersey) Law 2002: A Law to provide the means to establish a plan (the Island Plan) for the sustainable development of land and to control development in accordance with that plan, to prescribe the functional requirements of buildings and to provide the means to enforce those requirements, to provide the means to protect, enhance, conserve and to use wisely the natural beauties, natural resources and biodiversity of Jersey and to preserve and improve Jersey's general amenities, to confer powers to acquire land for the purposes of the Law, and to make other provisions such as inter alia protection to sites designated as ecological or geological Sites of Special Interest (SSI) and to the protection of trees.

Drainage (Jersey) Law 2005: A Law to consolidate and revise the law relating to sewerage, drainage and flood defence, and for consequential and incidental matters.

Sea Beaches (Removal of Sand and Stone [Jersey]) Law 1963: A Law to regulate the removal of sand, stone, gravel, shingle, clay or loam.

Agricultural Land (Control of Sales and Leases) (Jersey) Law 1974: A Law to control the sales and leases of agricultural land.

Protection of Agricultural Land (Jersey) Law 1964: A Law for the protection of agricultural land.

Animal Welfare (Jersey) Law 2004: A Law to ensure the welfare of animals and the prevention of suffering by animals, to regulate the keeping and use of animals, and for connected purposes.

Conservation of Wildlife (Jersey) Law 2000: A Law relating to the conservation of wild animals, wild birds and plants in Jersey Part 1 (Article 2([1])), Protected Wild Animals extends protection to dolphins, porpoises and whales Cetacea; seals Pennipedia; and marine turtles Chelaonidae and Dermochelyidae.

Conservation of Wildlife (Protected Plants) (Jersey) Order, 2009: An Order under the Conservation of Wildlife (Jersey) Law 2000 that lists plants which are to be protected.

Disease of Animals (Jersey) Law 1956: A Law to prevent the introduction and spreading of diseases of animals.

Plant Health (Jersey) Law 2003: A Law to control the spread of pests and diseases of plants and trees.

Pesticides (Jersey) Law 1991: A Law to provide for the regulation of pesticides and substances, preparations and organisms prepared or used for the control of pests or for protection against pests.

Weeds (Jersey) Law 1961: A Law to provide for preventing the spreading of injurious weeds.

Sea Fisheries (Jersey) Law 1994: A Law to make provision for the regulation of sea fishing and the conservation of sea fish; to make provision for the regulation of mariculture, for the licensing of fishing boats, for the appointment and duties of fisheries officers and for connected matters. There are numerous regulations which fall under this Law to assist in the protection, identification, marketing, and transportation of aquaculture animals, including the provisions regarding import/export licences and disease control.

Fisheries Management Agreement 1996: This Management Agreement sets out main aspects of arrangements for fisheries between the UK and Jersey Governments. All UK fishing vessels require a licence from DEFRA. There are reciprocal arrangements between Jersey and the UK for Jersey registered and licensed vessels to fish in UK waters, and UK vessels to fish within the Extended Territorial Sea.

The Granville Bay Treaty 2000 as amended: This Treaty sets fisheries management between Jersey and France providing exclusive rights for French and Jersey vessels within the Granville Bay area. The Joint Management Committee (JMC) manages level of fishing effort across jointly regulated waters, and the Joint Advisory Committee (JAC) acts as a forum and advisory panel to the JMC.

Food and Environmental Protection Act 1985 (Jersey) Order 1987: An Order to control the deposit of substances and articles in the sea and to make provision for the control of the deposit of substances and articles under the sea-bed.

Shipping (Jersey) Law 2002: A Law to make provision in respect of shipping.

Waste Management (Jersey) Law 2005: A Law to provide for the control and management of waste operations within Jersey; to regulate the transboundary movement of wastes, as far as they involve Jersey, in accordance with certain international agreements relating to such movement; and for related purposes.

Memorandum of Understanding (MoU) (2010): A Memorandum of Understanding between the Planning and Environment Department and the Economic Development Department for the prevention and control of pollution of the Island's territorial seas and coastal waters.

Water Pollution (Jersey) Law 2000: A Law to provide the control and prevention of pollution in Island waters (internal and coastal) and implements the provisions of The 'OSPAR' Convention. This law embodies current thinking on pollution protection based on: Best Available Techniques, the Precautionary principle, and the 'Polluter Pays' principle.

Water Pollution (Code of Good Agricultural Practice) (Jersey) Order 2009: The Code of Good Agricultural Practice for the Protection of Water (The Water Code) Jersey is the Statutory Code for Jersey and takes priority over the DEFRA Water code.

Water Resources (Jersey) Law 2007: A Law to provide for the protection, management and regulation of water resources in Jersey; the promotion of the conservation of the fauna and flora that are dependent on inland waters and of the habitats of such fauna and flora to the extent that those habitats are themselves dependent on inland waters; the conservation and enhancement of the natural beauty and amenity of inland waters; and for related purposes.

ANNEX 2:

JERSEY NATIONAL ENVIRONMENTAL STRATEGIES

Air Quality Strategy (in progress): The aim of the Air Quality Strategy is that everyone in Jersey should have access to outdoor air without significant risk to their health and that there should be no negative impacts from air pollutants on the environment of Jersey or our neighbours.

An Environmental Monitoring Strategy for Jersey, 2004

Aquaculture Strategy: The Aquaculture Strategy for Jersey has a principal focus on promoting sustainable and responsible aquaculture production without adverse impact on Jersey's marine environment. It considers the needs of the Island as a whole including other marine stakeholders as well as helping to ensure the continued sustainable and responsible development of the aquaculture sector both onshore, intertidally and offshore in Jersey.

Biodiversity Action Plans: One of the commitments from the biodiversity strategy is to produce local biodiversity action plans to achieve recovery of our most threatened species and habitats. The first set of action plans tackle 51 species that are protected, rare, declining or significant in Jersey. Over time, the project will address all threatened or protected species and habitats.

Biodiversity Strategy, 2000: The aim of the Biodiversity Strategy is to conserve and enhance biological diversity in Jersey and to contribute towards the conservation of global biodiversity when appropriate.

Countryside Character Appraisal, 1999: The Countryside Character Appraisal was produced as part of a wider Island Plan Review process and played a significant contribution to the 2002 Island Plan. The Countryside Character Appraisal provides a more sophisticated assessment/definition of the diverse and distinctive character areas which comprise the Island's countryside whilst ensuring that planning policies are appropriate for the future protection and enhancement of the Island's countryside; to inform development control decisions; and to help ensure that any necessary new development respects or enhances the distinctive character of the countryside.

Countryside Renewal Scheme: The aim of the Countryside Renewal Scheme (CRS) is to conserve and enhance the environment and landscape of Jersey.

Draft (Jersey) Island Plan: The Draft (Jersey) Island Plan's core aim is "Working together to meet the needs of our community" by maintaining a strong, environmentally sustainable and diverse economy; limiting population growth; maintaining and developing the Island's infrastructure; protecting and enhancing our natural and built environment whilst adequately housing the population.

Energy Policy Green Paper 'Fuel for Thought': A consultation paper proposing the overall goal of secure, affordable, sustainable energy through decreased energy use, making sustainable energy choices, preparing for the effects of climate change and ensuring that local energy supplies are secure and resilient.

Integrated Coastal Zone Management Strategy: Making the Most of Jersey's Coast: The Integrated Coastal Zone Management Strategy aims to bring together all parties that develop, manage or use the coast to ensure that the coast is sustainably managed in an integrated way.

Rural Economy Strategy 2011–2015: The Rural Economy Strategy (RES) is a five-year strategy designed to grow the rural economy in line with the objectives of the States Strategic Plan, whilst safeguarding Jersey's countryside, its character and the environment.

Rural Habitat Statement (to be finalised by year end 2010).

Ramsar Management Plans: Contracting parties to the Ramsar Convention are obliged to nominate wetlands that comply with the Convention's criteria for Wetlands of International Importance. The south east coast was designated as a Wetland of International Importance in 2000. Once wetlands have been designated, the nominating countries are required to prepare management plans for the wetlands which will promote their wise use and the conservation of their ecological character.

St Ouen's Bay Planning Framework: The St Ouen's Bay Planning Framework has been produced to provide a robust planning policy and land management tool to guide the future development of St Ouen's Bay. The Framework takes a holistic approach to the management of the Bay, presenting a coherent set of objectives, policies and proposals with an overriding aim of sustaining and enhancing the unique character of the natural and built environment of St Ouen's Bay.

The States Strategic Plan, 2009–2014: The Strategic Plan sets the overall direction for Jersey, concentrating on long-term policy aims and priorities, taking into account the challenges and strengths of Jersey today, and in the future. The Plan addresses a range of social, environmental and economic priorities in order to maintain Jersey's special way of life.

The State of Jersey: a Report on the Condition of Jersey's Environment, 2005: The "State of Jersey" is a cohesive environmental strategy for the Island and a gauge with which to measure environmental policy. It outlines current and future responsibilities towards the Island's environment by identifying five 'environmental priorities', key actions needed to address these priorities – and establishes how actions can be monitored.

Turning Point: The ECO-ACTIVE guide to the Science and Impacts of Climate Change in Jersey, 2009: 'Turning Point – the Eco-Active guide to the science and impacts of climate change' aims to present the scientifically endorsed facts on the way the world's climate is changing and interpret what that means for Jersey: a companion publication to the Guernsey book 'Planet Guernsey – Towards a Sustainable Future'.

Urban Habitat Statement: This statement draws attention to and emphasises the importance of wildlife habitats in Jersey's urban environment.

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Fifth National Report to the United Nations Convention on Biological Diversity: United Kingdom

Appendix 5: UK Biodiversity Indicators

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For further information about JNCC visit: <http://jncc.defra.gov.uk/default.aspx?page=1729>

Fifth National Report to the United Nations Convention on Biological Diversity: United Kingdom

Appendix 5: UK Biodiversity Indicators

Assessing indicators

Each indicator is composed of one or more measures that show trends over time. Each measure is summarised or assessed separately using a set of 'traffic lights'. The traffic lights show 'change over time'. They do not show whether the measure has reached any published or implied targets, or indeed whether the status is 'good' or 'bad', although where targets have been set, these are identified in the indicator text.

The traffic lights are determined by identifying the period over which the change is to be assessed and comparing the value of the measure in the base or start year with the value in the end year.

-  Improving
-  Little or no overall change
-  Deteriorating
-  Insufficient or no comparable data

Where possible the assessment has been made by evaluating trends using statistical analysis techniques. The assessment may be made by Defra statisticians in collaboration with the data providers, or undertaken by the data providers themselves. A green or red traffic light is only applied when there is sufficient confidence that the change is statistically significant and not simply a product of random fluctuations.

For some indicators, it is not possible to formally determine statistical significance, and in such cases the assessment has been made by comparing the difference between the value of the measure in the base or start year and the value in the end year against a 'rule of thumb' threshold. The standard threshold used is 3 per cent, unless noted otherwise. Where the data allow it, a three-year average is used to calculate the base year, to reduce the likelihood of any unusual year(s) unduly influencing the assessment. Where an indicator value has changed by less than the threshold of 3 per cent, the traffic light has been set at amber. The choice of 3 per cent as the threshold is arbitrary, but is commonly used across other Government indicators; use of this approach is kept under review.

The traffic lights only reflect the overall change in the measure from the base to latest year and do not reflect fluctuations during the intervening years.

Where data are available, two assessment periods have been used:

- **Long-term:** an assessment of change since the earliest date for which data are available; if the data run is for less than ten years, a long-term assessment is not made.
- **Short-term:** an assessment of change over the latest five years (however, for some indicators, the short-term change is over a longer time-period as a result of the frequency of update of the data upon which the indicators are based).

The UK Biodiversity Indicators (grouped by Strategic Goal)

The indicators have all been assigned to one of the Strategic Goals of the *Strategic Plan for Biodiversity 2011-2020*. Therefore, indicators prefixed with an 'A' are considered to be most direct relevance to Strategic Goal A, and indicators prefixed with a 'B' are considered to be most relevant to Strategic Goal B. However, although the indicators are nominally associated with a Goal, they may be of relevance to targets within other goals.

The latest information available on the indicators is summarised below.

Strategic Goal A: Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society.

<p>Indicator A1. Awareness, understanding and support for conservation http://jncc.defra.gov.uk/page-6177 <i>Indicator under development – no interim measures available</i> <i>It is anticipated that this indicator will have UK coverage</i></p>
<p>Public understanding and opinion on the value of biodiversity has strong implications for the acceptance and adoption of conservation measures.</p> <p>The 7th UK Biodiversity Indicators Forum proposed an indicator covering <i>Connection/Concern</i> – i.e. the proportion of people who feel connected to the biodiversity within their environment or are concerned about biodiversity loss. The indicator may also cover <i>Awareness</i> – the proportion of people who are aware of the term biodiversity and its meaning; and <i>Behaviour/Response</i> – the proportion of people that are taking action to support and protect biodiversity.</p> <p><i>Relevant CBD question(s): Q1 – Why is biodiversity important for your country?</i></p>

<p>Indicator A2. Taking action for nature: volunteer time spent in conservation http://jncc.defra.gov.uk/page-4253 <i>This indicator has UK coverage</i></p>	<p>Assessment of change for each measure</p>																													
<p>Graph of change over time:</p> <table border="1"> <caption>Data for Graph of change over time</caption> <thead> <tr> <th>Year</th> <th>Index (2000 = 100)</th> </tr> </thead> <tbody> <tr><td>2000</td><td>100</td></tr> <tr><td>2001</td><td>82</td></tr> <tr><td>2002</td><td>104</td></tr> <tr><td>2003</td><td>103</td></tr> <tr><td>2004</td><td>110</td></tr> <tr><td>2005</td><td>118</td></tr> <tr><td>2006</td><td>123</td></tr> <tr><td>2007</td><td>135</td></tr> <tr><td>2008</td><td>132</td></tr> <tr><td>2009</td><td>134</td></tr> <tr><td>2010</td><td>133</td></tr> <tr><td>2011</td><td>138</td></tr> <tr><td>2012</td><td>128</td></tr> </tbody> </table>	Year	Index (2000 = 100)	2000	100	2001	82	2002	104	2003	103	2004	110	2005	118	2006	123	2007	135	2008	132	2009	134	2010	133	2011	138	2012	128	<p>Long term</p> <p>2000–2012</p> <p>✓</p>	<p>Short term</p> <p>2007–2012</p> <p>✗</p>
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<p><i>Index of volunteer time spent in selected UK conservation organisations, 2000 to 2012.</i></p>																														

Summary of change of indicator

- The amount of time people spend volunteering to assist in conservation in part reflects society's interest in and commitment to biodiversity.
- The work undertaken by conservation volunteers includes: assisting with countryside management, carrying out surveys and inputting data (for more information about 'citizen science' in the UK, see Defra 2013), assisting with administrative tasks, and fundraising.
- Between 2000 and 2012, the amount of time contributed by volunteers has increased by 27 per cent, but in the five years to 2012 it decreased by 6 per cent.
- To give some idea of the extent of volunteering in the UK, in 2012 the index was calculated using data from 13 organisations covering nearly 9 million hours of volunteers' time. The decline in the index over the past two years is partly due to a number of large projects coming to an end.

Relevant CBD question(s): Q1 – Why is biodiversity important for your country?

Indicator A3: Value of biodiversity integrated into decision making

<http://jncc.defra.gov.uk/page-6178>

Under development, no interim measures available

It is anticipated that this indicator will have UK coverage

Integrating the value of biodiversity use as part of mainstream decision making is important to allow us to continue to enjoy the benefits from biodiversity that we currently achieve. Work is now underway to develop options for a new indicator on how the value of biodiversity has been integrated into public and business decision making.

Relevant CBD question(s): Q8 – How effectively has biodiversity been mainstreamed into relevant sectoral and cross-sectoral strategies, plans and programmes?

Indicator A4: Global biodiversity impacts of UK economic activity / sustainable consumption

<http://jncc.defra.gov.uk/page-6179>

Under development, no interim measures available

It is anticipated that this indicator will have UK coverage

Production and consumption in the UK has an impact on the natural environment beyond our shores through the range of imports and exports of goods and services. In particular, the UK is heavily reliant on imported goods and services to satisfy demand. This demand, combined with recent and continued liberalisation of global trade, has resulted in a complex network of supply chains that cause pressure on biodiversity and ecosystems (beyond the UK's borders). Each of the countries of the UK has introduced or is introducing policies to promote sustainable production and consumption and thereby reduce our impact on biodiversity and promote sustainable use of natural resources.

Research has been undertaken to assess how patterns of UK consumption impact on the key drivers of biodiversity change overseas and identify options for mitigating those impact. This includes:

- Analysis and modelling of trade pathways and supply chains for goods and services to identify important sources of production; and
- Identification of the potential impact of key production systems and products on biodiversity.

Relevant CBD question(s): Q8 – How effectively has biodiversity been mainstreamed into relevant sectoral and cross-sectoral strategies, plans and programmes?

Indicator A5: Integration of biodiversity considerations into business activity

<http://jncc.defra.gov.uk/page-6180>

Under development, no interim measures available

It is anticipated that this indicator will have UK coverage

Decisions made by businesses of any size within key sectors such as agriculture, forestry, industry, housing and infrastructure development, water supply and fisheries can have significant biodiversity impacts.

Two measures are proposed for this indicator:

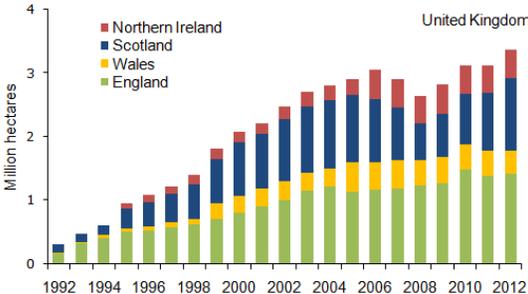
1. Measuring the number of businesses with an Environmental or Sustainable Management System (EMS); and
2. Measuring how widely the environment is considered in the supply chain of businesses.

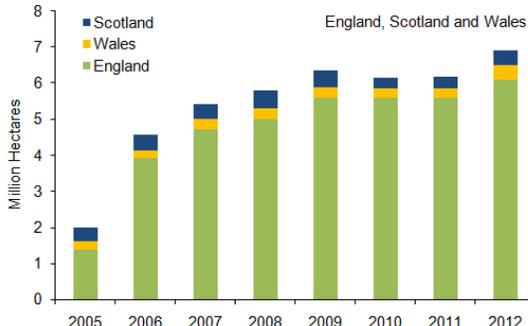
Relevant CBD question(s): Q8 – How effectively has biodiversity been mainstreamed into relevant sectoral and cross-sectoral strategies, plans and programmes?

Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use

Indicator B1: Agricultural and forest area under environmental management schemes		
Graph of change over time	Measure	Assessment of change for each measure
		Long term

B1a: Area of land in agri-environment schemes
<http://jncc.defra.gov.uk/page-4242>
Higher-level schemes have UK coverage; entry-level schemes are GB only

 <p><i>Area of land covered by higher-level or targeted agri-environment schemes, 1992 to 2012.</i></p>	<p>Higher-level/ targeted schemes</p>	<p>✓ 1992–2012</p>	<p>✓ 2007–2012</p>
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 <p><i>Area of land covered by entry-level type, whole-farm agri-environment schemes, 2005 to 2012.</i></p>	<p>Entry-level type, whole- farm schemes</p>	<p>⊖</p>	<p>✓ 2007–2012</p>
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Summary of change of indicator:

- Agri-environment schemes require farmers to implement environmentally-beneficial management and demonstrate good environmental practice on their farm, in return for financial incentives.
- In 2012 the total area of land in higher-level or targeted agri-environment agreements in the UK was just less than 3.4 million hectares. In the individual countries the proportion of agricultural land managed under higher-level schemes amounts to 16 per cent in England; 45 per cent in Northern Ireland; 20 per cent in Scotland; and 24 per cent in Wales.
- In 2012 the total area of land in entry-level type schemes in England, Scotland and Wales was 6.9 million hectares. In the individual countries the proportion of agricultural land managed under entry-level schemes amounts to 68 per cent in England; 26 per cent in Wales; and 7 per cent in Scotland.

B1b. Area of forestry land certified as sustainably managed

<http://jncc.defra.gov.uk/page-4243>

This indicator has UK coverage

<p>United Kingdom</p> <p>Percentage of woodland area certified as sustainably managed, 2001 to 2013.</p>	<p>2001–2013</p>	<p>2008–2013</p>
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Summary of change of indicator:

- Certification of woodlands promotes responsible forest management to safeguard forests' natural heritage and protect threatened species.
- Within the UK in 2013, the percentage of woodlands certified as sustainably managed was 27 per cent in England, 46 per cent in Wales, 57 per cent in Scotland and 58 per cent in Northern Ireland.
- In 2013, the proportion of woodland certified as sustainably managed has increased to 44 per cent (1.4 million of a total of 3.1 million hectares) from 36 per cent in 2001. It was stable between 2012 and 2013.

Relevant CBD question(s):
 Q8 – How effectively has biodiversity been mainstreamed into relevant sectoral and cross-sectoral strategies, plans and programmes?
 (Also Q7 – What actions has your country taken to implement the Convention since the fourth report and what have been the outcomes of these actions?)

Indicator B2: Sustainable fisheries: <http://jncc.defra.gov.uk/page-4244>

This indicator has UK coverage

Graph of change over time:	Assessment of change for each measure	
	Long term	Short term
<p>United Kingdom</p> <p>Percentage of fish stocks harvested sustainably and at full reproductive capacity, 1990 to 2011.</p>	<p>1990–2011</p>	<p>2006–2011</p>

<p>Summary of change of indicator:</p> <ul style="list-style-type: none"> • In 2011, 47 per cent of the 15 assessed fish stocks around the UK were at full reproductive capacity and were being harvested sustainably. • The proportion of assessed fish stocks harvested sustainably and at full reproductive capacity varied between 7 per cent and 29 per cent in the period 1990 to 1999, before increasing to between 27 and 40 per cent since 2000. The highest proportion of fish stocks harvested sustainably was in 2011. The indicator is assessed as improving in both the long- and short-term. • International Council for Exploration of the Sea advice in 2012 showed that most of the UK indicator stocks considered to be harvested sustainably and at full reproductive capacity in 2011 were also being fished at or below the rate providing long-term maximum sustainable yield (MSY), meaning that harvesting is both sustainable and delivering the largest possible catches, on average, that the stocks can provide under the prevailing environmental conditions.

Relevant CBD question(s): Q8 – How effectively has biodiversity been mainstreamed into relevant sectoral and cross-sectoral strategies, plans and programmes?

<p>Indicator B3: Climate change adaptation http://jncc.defra.gov.uk/page-6567 Under development, no interim measure(s) available <i>It is anticipated that this indicator will have UK coverage</i></p>
<p>Of the indicator options shortlisted for consideration, and reviewed through the 6th UK Biodiversity Indicators Forum, two were chosen for further development: water stress in protected areas, and gains and losses in coastal habitats (including intertidal and saltmarsh).</p>
<p><i>Relevant CBD question(s): Q3 – What are the main threats to biodiversity?</i></p>

<p>Indicator B4: Pressure from climate change (Spring Index) http://jncc.defra.gov.uk/page-4247 <i>This indicator has UK coverage</i></p>		
<p>Graph of change over time:</p>	<p>Assessment of change for each measure</p>	
	<p>Long term</p>	<p>Short term</p>
<p>United Kingdom</p> <p>Spring Index (day number)*</p> <p>1890 1900 1910 1920 1930 1940 1950 1960 1970 1980 1990 2000 2010</p>	<p>Not assessed</p>	<p>Not assessed</p>
<p><i>Index of the timing of biological spring events (number of days after 31 December) in the UK, 1891 to 1947 and 1999 to 2012.</i></p>		

Summary of change of indicator

- This is a contextual indicator showing how changes in climate, particularly temperature, are associated with changes in the timing of biological events.
- Since 1999, the annual mean observation dates have been around 7.5 days in advance of the average dates in the first part of the 20th century. The Index shows a strong relationship with mean temperature in March and April, and it advances more rapidly when the mean temperature exceeds 7°C. The mean observation dates in 2011 were the earliest for which there are records, being 0.2 days earlier than the previously most advanced dates in 1945. The warmest April in the Central England Temperature series (1659 onwards) occurred in 2011 and was almost certainly influential.

Relevant CBD question(s): Q3 – What are the main threats to biodiversity?

Indicator B5: Pressure from pollution

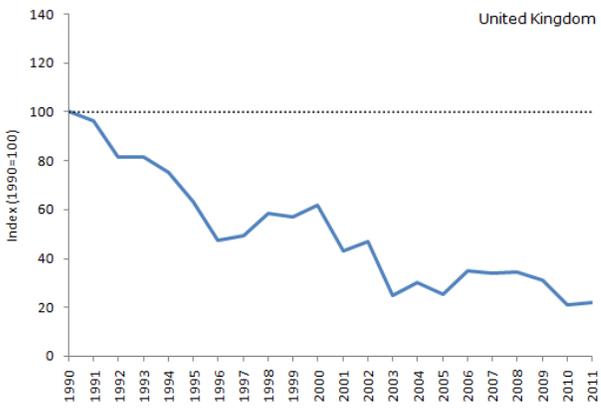
B5a. Air pollution: <http://jncc.defra.gov.uk/page-4245>

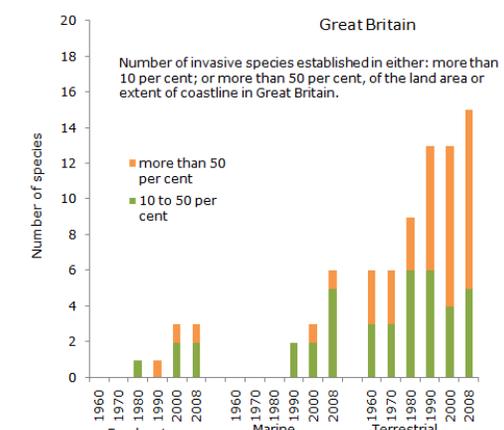
This indicator has UK coverage

Graph of change over time:	Measure	Assessment of change for each measure	
		Long term	Short term
<p>United Kingdom</p> <p>Area of sensitive UK habitats exceeding critical loads for acidification and eutrophication, 1996 to 2010.</p>	Area affected by acidity	1996–2010	2005–2010
	Area affected by nitrogen	1996–2010	2005–2010

Summary of change of indicator

- Critical loads are thresholds for the deposition of pollutants causing acidification and/or eutrophication above which significant harmful effects on sensitive UK habitats may occur
- In 1996, acid deposition exceeded critical loads in 73 per cent of the area of sensitive habitats. This declined to 49 per cent in 2010. There has also been a decrease in the area affected over the short term, since 2005.
- In 2010, nitrogen deposition exceeded critical loads in 68 per cent of sensitive habitats. This was a decrease from a level of 75 per cent in 1996. There was also a decrease between 2005 and 2010.

B5b: Marine pollution: http://jncc.defra.gov.uk/page-6183 This indicator has UK coverage		
Graph of change over time:	Assessment of change for each measure	
	Long term	Short term
 <p>United Kingdom</p> <p>Index (1990=100)</p> <p>1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011</p> <p>Combined input of hazardous substances to the UK marine environment, 1990 to 2011.</p>	<p>1990–2011</p> <p>✓</p>	<p>2006–2011</p> <p>✓</p>
<p>Summary of change of indicator</p> <ul style="list-style-type: none"> The indicator shows the combined input of six of the most hazardous substances to the UK marine environment. Levels of all six substances declined over the period 1990 to 2011. In the case of three substances (cadmium, lindane and mercury) inputs have declined by more than 75 per cent over this time period, and in the case of copper, lead and zinc inputs have declined between 60 and 65 per cent. Levels of all six substances have also declined between 2006 and 2011, with levels of lead decreasing at the highest rate over this period, declining by over 60 per cent. <p>Relevant CBD question(s): Q3 – What are the main threats to biodiversity?</p>		

Indicator B6: Pressure from invasive species http://jncc.defra.gov.uk/page-4246 This indicator has GB coverage			
Graph of change over time:	Measure	Assessment of change for each measure	
		Long term	Short term
 <p>Great Britain</p> <p>Number of invasive species established in either: more than 10 per cent; or more than 50 per cent, of the land area or extent of coastline in Great Britain.</p> <p>Number of species</p> <p>more than 50 per cent</p> <p>10 to 50 per cent</p> <p>1960 1970 1980 1990 2000 2008</p> <p>Freshwater Marine Terrestrial</p> <p>Changes in the extent of widely established invasive non-native species, 1960 to 2008.</p>	Freshwater invasive species	<p>1960–2008</p> <p>✗</p>	<p>2000–2008</p> <p>⚠</p>
	Marine invasive species	<p>1960–2008</p> <p>✗</p>	<p>2000–2008</p> <p>✗</p>
	Terrestrial invasive species	<p>1960–2008</p> <p>✗</p>	<p>2000–2008</p> <p>✗</p>

<p>Summary of change of indicator</p> <ul style="list-style-type: none"> Over the period 1990 to 2008, non-native species have become more prevalent in the countryside. Out of 3,500 non-native species in Britain, the 49 with the greatest potential impact on native biodiversity have been assessed for the extent to which they are established in Great Britain. The number of these 'most invasive' non-native species established in or along more than 10 per cent of Great Britain's land area or coastline has increased between 1960 and 2008 in the freshwater, terrestrial and marine environment, increasing the likely pressure on native biodiversity, although there has been no significant change in freshwater invasive species between 2000 and 2008.
<p><i>Relevant CBD question(s): Q3 – What are the main threats to biodiversity?</i></p>

<p>Indicator B7: Water quality: http://jncc.defra.gov.uk/page-4250 <i>under development, interim data available</i> <i>This indicator has UK coverage</i></p>																																
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<table border="1"> <caption>Estimated data from the stacked bar chart</caption> <thead> <tr> <th>Category</th> <th>High</th> <th>Good</th> <th>Moderate</th> <th>Poor</th> <th>Bad</th> </tr> </thead> <tbody> <tr> <td>All water bodies</td> <td>5%</td> <td>32%</td> <td>48%</td> <td>13%</td> <td>2%</td> </tr> <tr> <td>Rivers</td> <td>3%</td> <td>32%</td> <td>48%</td> <td>13%</td> <td>2%</td> </tr> <tr> <td>Lakes</td> <td>5%</td> <td>40%</td> <td>43%</td> <td>8%</td> <td>2%</td> </tr> <tr> <td>Estuaries and Coastal</td> <td>8%</td> <td>35%</td> <td>43%</td> <td>10%</td> <td>2%</td> </tr> </tbody> </table>	Category	High	Good	Moderate	Poor	Bad	All water bodies	5%	32%	48%	13%	2%	Rivers	3%	32%	48%	13%	2%	Lakes	5%	40%	43%	8%	2%	Estuaries and Coastal	8%	35%	43%	10%	2%	<p>Not assessed</p>	<p>Not assessed</p>
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<p><i>Ecological classification of UK surface water bodies under the Water Framework Directive, 2009.</i></p>																																

<p>Summary of change of indicator</p> <ul style="list-style-type: none"> In 2009, 37 per cent of all water bodies in the UK were at high or good ecological status according to the EU database for Water Framework Directive (WFD) data. Estuaries and coastal waters, and lakes, had the highest percentage of bodies of high or good ecological status, both at 43 per cent. This indicator is not yet assessed, as work is ongoing to reach agreement between the four UK countries (England, Northern Ireland, Scotland and Wales) on what is the most appropriate way to measure changes of water quality at the UK level.
<p><i>Relevant CBD question(s): Q3 – What are the main threats to biodiversity?</i></p>

Strategic Goal C: To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity.

Indicator C1: Protected areas: <http://jncc.defra.gov.uk/page-4241>
This indicator has UK coverage

Graph of change over time	Measure	Assessment of change for each measure	
		Long term	Short term
<p>Extent of UK nationally and internationally important protected areas: (i) on land; (ii) at sea, 1950 to 2013.</p>	Total extent of protected areas on land	1950–2013	2008–2013
	Total extent of protected areas at sea	1950–2013	2008–2013
<p>Cumulative proportion of Areas of Special Scientific Interest (Northern Ireland) and Sites of Special Scientific Interest (England and Scotland) in 'favourable' or 'unfavourable-recovering' condition, 2005 to 2013.</p>	Condition of A/SSSIs	2005–2007	2008–2013

Area and percentage cover of protected areas by country, as at 30 June 2013.

2013	Million Hectares		Percentage	
	On land	At sea	On land	At sea
England	3.39	3.13	25.9	13.8
Scotland	2.32	3.99	29.5	6.5*
Wales	0.61	0.57	29.4	17.6
Northern Ireland	0.39	0.06	27.8	12.1
United kingdom	6.71	7.75	27.5	8.9

* Note: the percentage of protected areas at sea is lower for Scotland due to the large size of its offshore area.

The extent of protected areas in the indicator is the combined area of:

- nationally designated Sites of Special Scientific Interest (SSSI) in England, Scotland and Wales, and Areas of Special Scientific Interest (ASSI) in Northern Ireland;
- internationally designated Special Protection Areas (SPA) and Special Areas of Conservation (SAC, including candidate Special Areas of Conservation and Sites of Community Interest) under the European Birds and Habitats Directives respectively; and
- wider countryside designations: Areas of Outstanding Natural Beauty (England, Wales, and Northern Ireland), National Scenic Areas (Scotland), and National Parks (England, Scotland, and Wales).

Summary of change of indicator

- The overall total extent of land and sea protected in the UK through national and international protected areas, and through wider landscape designations, has increased by nearly 6 million hectares, from just over 8.5 million hectares in December 2008 to just under 14.5 million hectares in June 2013. A large contribution to this has been from the marine environment, following the designation of inshore and offshore marine sites under the Habitats Directive – the area of protected areas at-sea increased by more than 5.5 million hectares between 2008 and 2013 to 7.8 million hectares. The extent of protected areas on-land has increased by more than 300,000 hectares since 2008.
- The indicator also shows the condition of Areas or Sites of Special Scientific Interest (A/SSSIs) on land. A/SSSIs are surveyed periodically to assess whether they are in good condition ('favourable') or, if not, whether they are under positive management ('unfavourable-recovering'). Since 2008, the percentage of features, or area, of A/SSSIs in favourable or recovering has increased by just over 11 per cent to 85.6 per cent. The proportion of features or area of land in favourable condition has declined slightly since 2008. The proportion of features or area of land in unfavourable-recovering condition has increased from 14 per cent in 2005 to 35 per cent in 2013. These changes reflect improved management of sites, but may also be affected by a greater number of sites/features having been assessed over time.

Relevant CBD question(s): Q7 – What actions has your country taken to implement the Convention since the fourth report and what have been the outcomes of these actions? (Also: Q9 – How fully has your national biodiversity strategy and action plan been implemented?)

Note that measure C1c (Condition of A/SSSIs) is also relevant to Q2 – What major changes have taken place in the status and trends of biodiversity in your country?

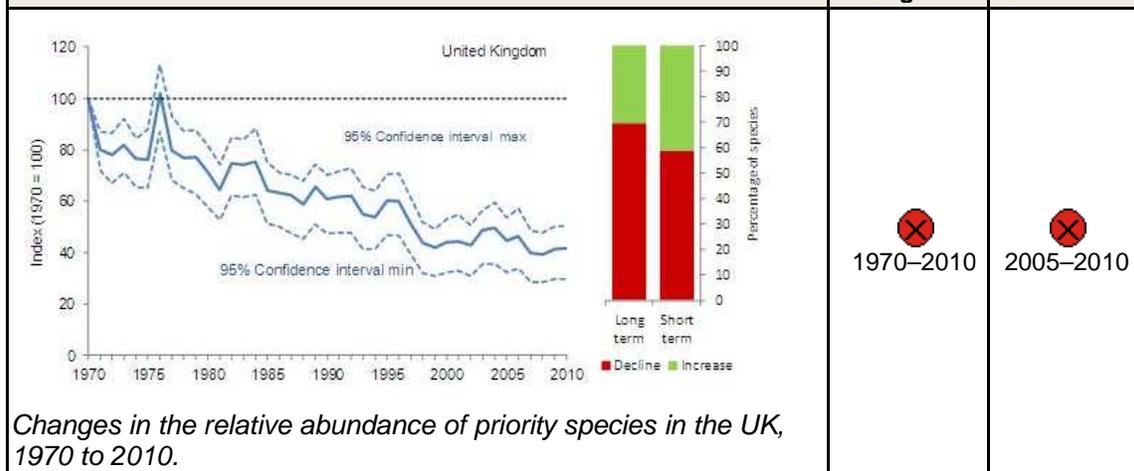
Indicator C2: Habitat connectivity: http://jncc.defra.gov.uk/page-4249 This indicator has GB coverage			
Graph of change over time:	Measure	Assessment of change for each measure	
		Long term	Short term
<p>Mean connectivity value</p> <p>Great Britain</p> <p>Legend: 1990 (green), 1998 (yellow), 2007 (orange)</p> <p>Categories: Broad-leaved, mixed and yew woodland; Neutral grassland</p>	Broad-leaved, mixed and yew woodland	⊙***	⊙***
	Neutral grassland	⊙***	⊙***
<p><i>Change in habitat connectivity for selected broad habitats in the wider countryside, 1990 to 2007.</i></p>			
<p>Summary of change of indicator</p> <ul style="list-style-type: none"> Connectivity is a measure of the size and distribution of patches of habitat and the relative ease with which typical species can move through the landscape between the patches. Maintaining and improving connectivity is important in ensuring the long-term survival of biodiversity in a fragmented landscape, especially under a changing climate. There was little or no overall change in the degree of connectivity for broad-leaved, mixed and yew woodland between 1990 and 2007. Over the same period there has been an increase in the area of broad-leaved woodland, which would tend to increase connectivity. However this may have been countered by changes in woodland pattern, changes in the wider landscape, or both, which reduced connectivity, and hence overall there was no significant change. There was an increase in the degree of connectivity for neutral grassland between 1990 and 2007, although the change between 1998 and 2007 is not statistically significant. Between 1990 and 2007 there has been an increase in the overall area of neutral grassland. The increase in connectivity is most likely to be related to an increase in habitat area, but there may also be effects from changes in habitat pattern in the wider landscape. 			
<p><i>Relevant CBD question(s): Q3 – What are the main threats to biodiversity?</i></p>			

Indicator C3: Status of habitats of European importance http://jncc.defra.gov.uk/page-4239 <i>This indicator has UK coverage</i>																				
Graph of change over time:	Assessment of change for each measure																			
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<table border="1"> <caption>Percentage of UK habitats of European importance in improving or declining conservation status in 2007 and 2013.</caption> <thead> <tr> <th>Conservation Status</th> <th>2007 (%)</th> <th>2013 (%)</th> </tr> </thead> <tbody> <tr> <td>Favourable</td> <td>5</td> <td>3</td> </tr> <tr> <td>Unfavourable improving</td> <td>48</td> <td>31</td> </tr> <tr> <td>Unknown</td> <td>6</td> <td>4</td> </tr> <tr> <td>Unfavourable stable</td> <td>10</td> <td>38</td> </tr> <tr> <td>Unfavourable declining</td> <td>30</td> <td>25</td> </tr> </tbody> </table> <p>Percentage of UK habitats of European importance in improving or declining conservation status in 2007 and 2013.</p>	Conservation Status	2007 (%)	2013 (%)	Favourable	5	3	Unfavourable improving	48	31	Unknown	6	4	Unfavourable stable	10	38	Unfavourable declining	30	25	<p>⊙</p>	<p>⊗ 2007–2013</p>
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Unfavourable stable	10	38																		
Unfavourable declining	30	25																		
<p>Summary of change of indicator</p> <ul style="list-style-type: none"> • In 2007, 5 per cent of habitats listed on Annex I of the Habitats Directive were in favourable conservation status, declining to 3 per cent in 2013. • The conservation status of 48 per cent of habitats was improving in 2007, and in 2013, 31 per cent were improving. • The conservation status of 30 per cent of the habitats was declining in 2007, and in 2013, 25 per cent were declining. • The decrease between the two assessments in 2007 and 2013 is due in part to greater recognition of some of the pressures they are facing, such as the exceedance of critical loads of acidity and eutrophication from airborne pollution. • The supporting documentation for the indicator shows that 35 habitats improved or remained favourable (e.g. machair, calcareous fens), whilst 39 habitats declined (e.g. blanket bogs) or remained unfavourable (e.g. coastal lagoons). 																				
<p><i>Relevant CBD question(s): Q2 – What major changes have taken place in the status and trends of biodiversity in your country?</i></p>																				

Indicator C4. Status of threatened species

Indicator C4a: Status of priority species: <http://jncc.defra.gov.uk/page-4238>
 This indicator has UK coverage

Graph of change over time:	Assessment of change for each measure	
	Long term	Short term



Changes in the relative abundance of priority species in the UK, 1970 to 2010.

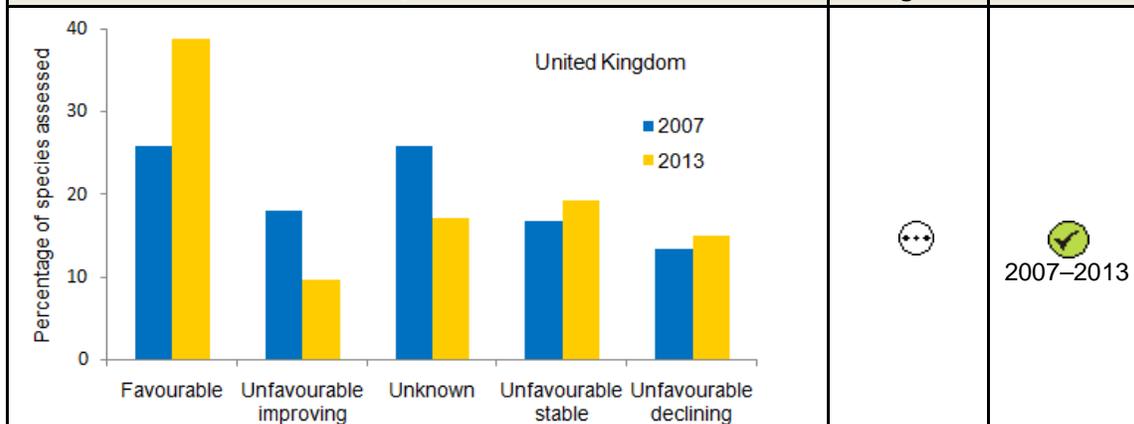
Summary of change of indicator

- Between 1970 and 2010, populations of priority species declined by 58 per cent, a statistically significant decrease. Within the index over this long-term period, 30 per cent of species showed an increase, and 70 per cent showed a decline.
- Between 2005 and 2010, populations of priority species declined by 7 per cent relative to their value in 2005, a statistically significant decrease. Within the index over this short-term period, 41 per cent of species showed an increase, and 59 per cent showed a decline.

Relevant CBD question(s): Q2 – What major changes have taken place in the status and trends of biodiversity in your country?

Indicator C4b: Status of species of European importance:
<http://jncc.defra.gov.uk/page-6566>
 This indicator has UK coverage

Graph of change over time:	Assessment of change for each measure	
	Long term	Short term



Percentage of UK species of European importance in improving or declining conservation status in 2007 and 2013.

Summary of change of indicator

- In 2007 26 per cent of species listed on Annexes II, IV or V of the Habitats Directive were in favourable conservation status, increasing to 39 per cent in 2013. However, the conservation status of 18 per cent of species was improving in 2007, and in 2013, 10 per cent were improving. In addition, the conservation status of 13 per cent of the species was declining in 2007, and in 2013, 15 per cent were declining.

Relevant CBD question(s): Q2 – What major changes have taken place in the status and trends of biodiversity in your country?

Indicator C5: Birds of the wider countryside and at sea

<http://jncc.defra.gov.uk/page-4235> (This indicator has UK coverage)

Graph of change over time:	Measure	Assessment of change for each measure	
		Long term	Short term
<p>Breeding farmland birds, woodland birds, wetland birds, and seabirds, 1970 to 2012.</p>	Farmland birds	✗ 1970–2011	✗ 2006–2011
	Woodland birds	✗ 1970–2011	✓ 2006–2011
	Wetland birds	✗ 1975–2011	✗ 2006–2011
	Seabirds	✓ 1970–2012	✗ 2007–2012
	Graph of change over time:		Assessment of change for each measure
<p>Wintering waterbirds, 1975-6 to 2011-12.</p>	Wintering waterbirds	✓ 1975/6 – 2010/11	⚠ 2005/6 – 2010/11
		Long term	Short term

Summary of change of indicator

- Between 1970 and 2012, populations of breeding farmland and woodland birds declined by 50 per cent and 17 per cent respectively. In addition, the population index for breeding water and wetland birds was 16 per cent lower than in 1975. In contrast, in 2012 the breeding seabird populations were 17 per cent higher than the 1970 level.
- In the shorter-term, between 2006 and 2011, populations of woodland birds have risen by 7 per cent, whilst populations of breeding farmland birds have declined by almost 10 per cent, and water and wetland birds by 13 per cent. Between 2007 and 2012 the populations of seabirds have declined by 9 per cent.
- In 2011-12, populations of the wintering water birds were 94 per cent higher than in 1975-6. There has been a decline in more recent years since populations peaked in 2001-2; the measure has fallen by 12 per cent since the winter of 2001-2 but has remained stable in the five years to 2010-11.

Relevant CBD question(s): Q2 – What major changes have taken place in the status and trends of biodiversity in your country?

Indicator C6: Insects of the wider countryside (butterflies):

<http://jncc.defra.gov.uk/page-4236> (This indicator has UK coverage)

Graph of change over time:	Measure	Assessment of change for each measure	
		Long term	Short term
<p>Trends in butterfly populations for habitat specialists and species of the wider countryside, 1976 to 2012.</p>	Semi-natural habitat specialists	1976–2012 (Red X icon)	2007–2012 (Yellow N icon)
	Species of the wider countryside	1976–2012 (Yellow N icon)	2007–2012 (Yellow N icon)

Summary of change of indicator

- Since 1976, the indices for butterflies associated strongly with semi-natural habitats (habitat specialists) and for those found in the wider countryside show declines of 83 per cent and 54 per cent respectively.
- In the long term, since 1976, habitat specialist butterflies have declined significantly, but for species of the wider countryside there has been little or no overall long-term change, although the current index is significantly lower than over the medium-term, 1982–2003.
- In the short term, since 2007, habitat specialist butterflies have shown an apparent decrease from 24 per cent to 17 per cent of the 1976 level. Species of the wider countryside also show an apparent decrease, from 57 per cent to 46 per cent of the 1976 level. However, the underlying analysis shows that the apparent decline in both specialist species and species of the wider countryside since 2007 is not significant, meaning that there has been no overall change for these measures in the five years to 2012.
- In 2012, habitat specialist butterflies decreased by 17 per cent from the previous year, whilst wider countryside species decreased by 28 per cent. However, large fluctuations in numbers between years are typical features of butterfly populations.

Relevant CBD question(s): Q2 – What major changes have taken place in the status and trends of biodiversity in your country?

Indicator C7: Plants of the wider countryside: <http://jncc.defra.gov.uk/page-4237>
 This indicator has GB coverage

Graph of change over time:	Measure	Assessment of change for each measure	
		Long term	Short term
	Arable and horticultural land	 1990–2007	 1998–2007
	Woodland and grassland	 1990–2007	 1998–2007
	Boundary habitats	 1990–2007	 1998–2007

Change in plant species richness in the wider countryside, 1990 to 2007.

Summary of change of indicator

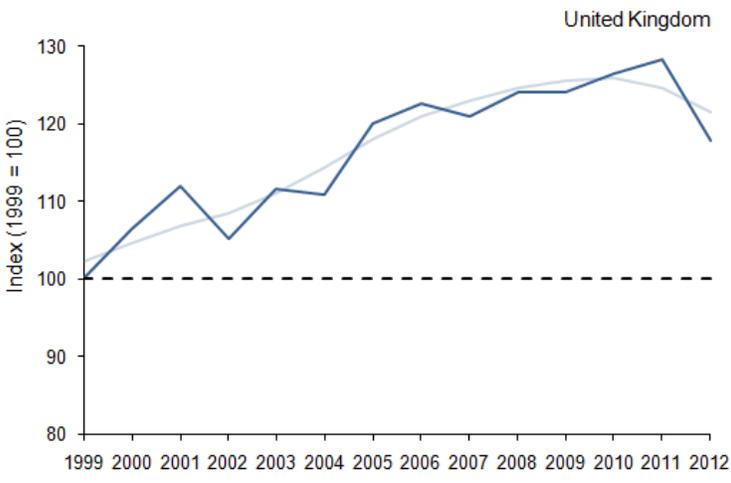
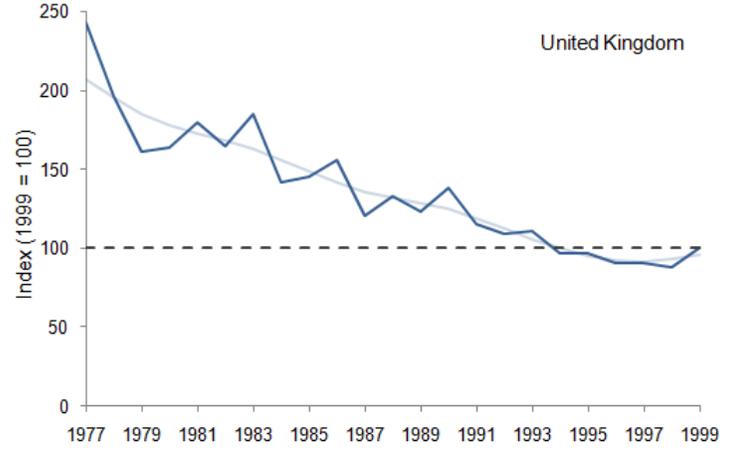
- Within arable and horticultural land, there was an increase in plant species richness (number of species per survey plot) both in the longer term (since 1990) and shorter term (since 1998).
- In woodland and grassland habitats, plant diversity has declined in both the longer- and shorter-term.
- In boundary habitats, plant species richness of the ground flora has also declined in both the long- and shorter-term.

Relevant CBD question(s): Q2 – What major changes have taken place in the status and trends of biodiversity in your country?

Indicator C8: Mammals of the wider countryside (bats):

<http://incc.defra.gov.uk/page-4271>

This indicator has UK coverage

Graph of change over time	Assessment of change for each measure	
	Long term	Short term
 <p>United Kingdom</p> <p>Index (1999 = 100)</p> <p>1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012</p> <p><i>Trends in bat populations, 1999 to 2012.</i></p>	<p>1999–2012</p> <p>✔</p>	<p>2007–2012</p> <p>⚠</p>
 <p>United Kingdom</p> <p>Index (1999 = 100)</p> <p>1977 1979 1981 1983 1985 1987 1989 1991 1993 1995 1997 1999</p> <p><i>Historical declines in pipistrelle bat roost counts.</i></p>	<p>1977–1999</p> <p>✘</p>	<p>Not Assessed</p>
<p>Summary of change of indicator</p> <ul style="list-style-type: none"> • Bat populations are considered to be a good indicator of the broad state of wildlife and landscape quality because they utilise a range of habitats across the landscape and are sensitive to pressures in the urban, suburban and rural environment. • Since 1999, bat populations have increased by 18 per cent. The most recent five year assessment shows a decrease of slightly less than 3 per cent in the index, giving a stable short-term assessment. • Bats have undergone severe declines historically. Data from colony counts of pipistrelle bats show a 59 per cent decline from 1977 to 1999. Note that the index values for the two graphs are not comparable. 		
<p><i>Relevant CBD question(s): Q2 – What major changes have taken place in the status and trends of biodiversity in your country?</i></p>		

Indicator C9: Genetic resources for food and agriculture			
C9a. Animal genetic resources – effective population size http://jncc.defra.gov.uk/page-4240 <i>This indicator has GB coverage</i>			
Graph of change over time	Measure	Assessment of change for each measure	
		Long term	Short term
<p>United Kingdom</p> <p>Number of individuals</p> <p>2001 2007</p> <p>■ Sheep ■ Cattle</p>	Native sheep breeds	⊙***	⊙ 2001–2007
	Native cattle breeds	⊙***	⊙✓ 2001–2007
<p><i>Change in mean effective population size for native breeds of sheep and cattle at greatest risk of loss of genetic diversity, 2001 to 2007.</i></p>			
<p>Summary of change of indicator</p> <ul style="list-style-type: none"> Genetic diversity is an important component of biological diversity. Rare and native breeds of farm animals are part of our cultural heritage and are associated with traditional land management required to conserve important habitats. Genetic diversity in UK breeds of cattle and sheep is assessed by effective population size. A low effective population size signifies a greater likelihood of inbreeding and risk of loss of genetic diversity. The mean effective population size for breeds most at risk of loss of genetic diversity has risen by 4.5 individuals for sheep breeds (12 per cent), and by 8.3 individuals for cattle (32 per cent). The increase for sheep breeds is not statistically significant due to variability in the data, so the measure is assessed as showing little or no overall change. There has been no reported UK extinction of any breed of sheep or cattle since 2001. The UK is home to some of the richest and most diverse farm animal genetic resources in the world, including 235 native breeds of farm animals. Between 1900 and 1973, the United Kingdom lost 26 of its native breeds. This was caused by changing farming methods and a much more intensive approach to food production. Since 1973, when the Rare Breeds Survival Trust was set up to conserve and protect the UK's rare native breeds from extinction, no other native livestock breed has become extinct in the UK. 			
<p><i>Relevant CBD question(s): Q2 – What major changes have taken place in the status and trends of biodiversity in your country?</i></p>			

C9b. Plant genetic resources – Enrichment Index
<http://jncc.defra.gov.uk/page-4240>
This indicator has UK coverage

Graph of change over time	Assessment of change for each measure	
	Long term	Short term
<p><i>Cumulative Enrichment Index of plant genetic resource collections held in the UK, 1960 to 2012.</i></p>	<p>1960–2012</p>	<p>2007–2012</p>

Summary of change of indicator

- An accession is a collection of plant material from a particular location. The Enrichment Index is an assessment of the genetic diversity held in gene banks; it is affected by the number of accessions which are added in a given year, but provides a better reflection of the genetic diversity already held in gene banks as reduced weight is given to new accessions of existing taxa.
- The Enrichment Index is a proxy measure of genetic diversity, based upon the assumption that genetic diversity increases (to a greater or lesser extent) with originality of accessions.
- There is considerable annual variability in the number of new accessions into UK germplasm collections. The total number of accessions has risen since the year 1960, peaking at 46,210 accessions of target species. A rapid rise in the Enrichment Index between the years 2000 and 2009 is attributed to the concerted collection effort by the Millennium Seed Bank.
- There was a 19 per cent increase in the Enrichment Index between 2007 and 2012, but there has been virtually no change since 2010. This is partly as a result of a backlog in submitting information to EURISCO.

*Relevant CBD question(s): Q2 – What major changes have taken place in the status and trends of biodiversity in your country?
 (Also: Q9 – How fully has your national biodiversity strategy and action plan been implemented?
 And: Q7 – What actions has your country taken to implement the Convention since the fourth report and what have been the outcomes of these actions?)*

Strategic Goal D: Enhance the benefits to all from biodiversity and ecosystem services.

Indicator D1: Biodiversity and ecosystem services (marine): fish size classes in the North Sea: http://jncc.defra.gov.uk/page-4248 <i>This indicator covers the North Sea area</i>		
Graph of change over time:	Assessment of change for each measure	
	Long term	Short term
<p>Proportion of large fish (equal to or larger than 40cm), by weight, in the North-western North Sea, 1983 to 2011.</p>	<p>1983–2011</p> <p style="text-align: center;">❌</p>	<p>2006–2011</p> <p style="text-align: center;">✅</p>
<p>Summary of change of indicator</p> <ul style="list-style-type: none"> The indicator responds to fishing impacts on the North-western North Sea fish community because larger fish are more likely to be caught by trawls, and because larger species of fish are more likely to decline in number for a given rate of fishing – when fish communities are more heavily fished, the proportion of large fish is expected to fall. Some variation in the proportion of large fish will be driven by environmental variation, but evidence suggests environmental effects are small in relation to fishing effects. Changes in the size structure of fish populations and communities reflect changes in the health of the fish community In 2011, around 10 per cent of the weight of the fish community in the North-western North Sea was made up of large fish. This was a fall from about 23 per cent in 1983; however this is an increase from a low of 2.1 per cent in 2001. The proportion of large fish in the North-western North Sea rose by around 1.5 per cent between 2010 and 2011, based on the unsmoothed index. Large fluctuations in numbers between years are typical features of the size of North Sea fish populations. 		
<p><i>Relevant CBD questions: Q4 – What are the impacts of the changes in biodiversity for ecosystem services and the socio-economic and cultural implications of these impacts? (Also: Q3 – What are the main threats to biodiversity? And: Q2 – What major changes have taken place in the status and trends of biodiversity in your country?)</i></p>		

Indicator D2: Biodiversity and ecosystem services (terrestrial)

<http://jncc.defra.gov.uk/page-6181>

Under development, no interim measure(s) available

It is anticipated that this indicator will have UK coverage

The following are all being considered for further development: extent of land cover classified as urban; community analysis of wild pollinators (bumble abundance; and species richness of hoverflies and wild bees); carbon stock of forests and peatlands in Great Britain.

Relevant CBD questions: Q4 – What are the impacts of the changes in biodiversity for ecosystem services and the socio-economic and cultural implications of these impacts?

Strategic Goal E: Enhance implementation through participatory planning, knowledge management and capacity building.

Indicator E1: Biodiversity data for decision making: <http://jncc.defra.gov.uk/page-6182>

Under development, no interim measures available

It is anticipated that this indicator will have UK coverage

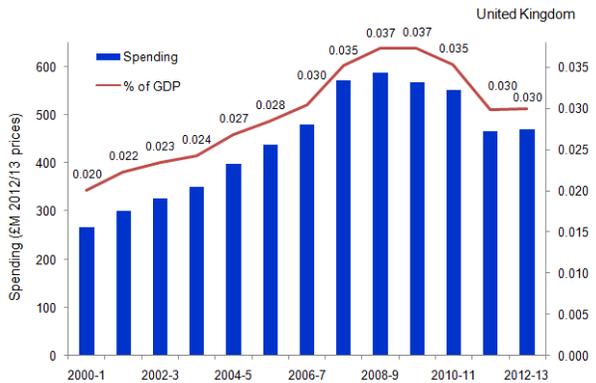
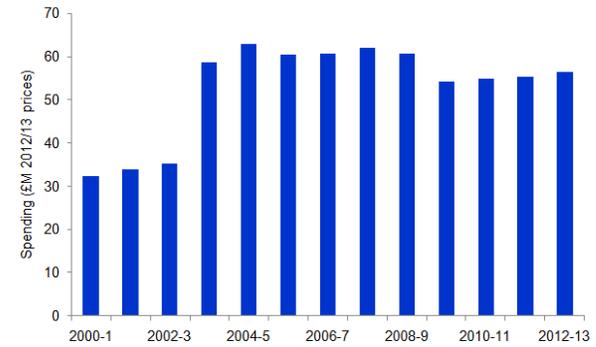
Good policy making and evaluation is based on evidence. We need evidence to guide our decisions, from issues of national policy to choices about individual site management. We also need to continue to develop and test solutions to address biodiversity loss and engage people, natural resource managers and business. Potential datasets which might inform this indicator have been identified. The next stage is to further develop initial ideas into a workable measure that can be implemented in 2014.

Relevant CBD question(s): Q9 – How fully has your national biodiversity strategy and action plan been implemented?

Indicator E2: Expenditure on UK and international biodiversity

<http://jncc.defra.gov.uk/page-4251>

This indicator has UK coverage

Graph of change over time	Measure	Assessment of change for each measure	
		Long term	Short term
 <p>Public sector expenditure on biodiversity in the UK, 2000-1 to 2012-13.</p>	Public sector expenditure on biodiversity in the UK	 2000/1 – 2012/13	 2007/8 – 2012/13
 <p>UK public sector expenditure on international biodiversity 2000-1 to 2012-13.</p>	UK public sector expenditure on international biodiversity	 2000/1 – 2012/13	 2007/8 – 2012/13

Summary of change

- Spending is one way of assessing the priority, and the level of effort, that is given to biodiversity within the UK public sector. Funding for international biodiversity is essential for the implementation of the Convention on Biological Diversity in developing countries.
- In 2012-13, £470.9 million of UK public sector funding was spent on UK biodiversity; this value has remained stable since 2011-12. Between 2000-1 and 2012-13, public sector spending on UK biodiversity increased by 76 per cent in real terms.
- In 2012-13, UK public sector funding for international biodiversity totalled £56.4 million. International spending by the UK public sector has increased by 74 per cent since 2000-1 in real terms.
- Public sector funding on UK biodiversity relative to GDP has remained stable in 2012-13 compared to 2011-12.

Relevant CBD question(s): Q7 – What actions has your country taken to implement the Convention since the fourth report and what have been the outcomes of these actions?