

Written submission from the James Hutton Institute

The James Hutton Institute welcomes the opportunity to submit evidence to the Scottish Parliament's Rural Affairs, Climate Change and Environment Committee regarding the implementation of the Scottish Government's Scottish Biodiversity Strategy.

The James Hutton Institute is an international research centre based in Scotland, which combines strengths in crops, soils, land use and environmental research. The work we do tackles some of the world's most challenging problems including the impact of climate change and threats to food, water and environmental security. Given our skill base and focus, our submission considers the availability of data, the balance of the research base, and the science-policy/practitioner communication needed to support delivery of the Scottish Biodiversity Strategy (SBS).

Summary

From a research perspective, the James Hutton Institute considers the following to be central to implementation of the SBS:

- New mechanisms to get useful information to end-users, in particular a Centre of Expertise on Ecosystems.
- Maintaining a reasonable balance between responsive synthesis work and primary data gathering.
- Maintaining research capacity and expertise to deal with novel challenges facing Scotland's natural capital.
- Further integration of environmental, social and economic research to develop new approaches to understanding and managing conservation conflicts.

Full Response

Providing information: Natural capital includes air, land, water, soil and biodiversity; we welcome recognition of the importance of Scotland's stock of natural capital in the priorities of the new Scottish Government Economic Strategy (SGES). Such integration across policies and sectors is crucial to the successful implementation of the Scottish Biodiversity Strategy (SBS). The root causes of the key drivers of biodiversity loss (habitat loss and/or fragmentation, over-exploitation, climate change, diffuse pollution and non-native invasive species) need to be tackled. However, these generally lie in sectors such as agriculture, fisheries and energy generation. It is therefore vital that these sectors receive the information they need to help deliver their commitments under the SBS and wider Nature Conservation (Scotland) Act 2004.

Delivery of strategies such as the SGES and SBS will benefit from mechanisms that help Scotland's research base - with its expertise in the state of our natural capital (including biodiversity), and the drivers of its change - to provide timely and relevant information. A key here is to support a Centre of Expertise in Ecosystems, based on the Climate X Change and CREW models and funded through the Scottish

Government's Strategic Research Portfolio managed by RESAS: this would streamline the interactions of Scottish Government, agencies and researchers.

Primary data gathering: Synthesis, based on existing data, can deliver useful information in the short term; there is a danger, however, that we lose sight of the importance of gathering primary data. Whilst a substantial evidence base exists from which to work to address some of the major challenges to Scotland's biodiversity, a lack of primary data of appropriate scale (e.g. national to local) and quality remains a significant issue in successfully resolving many local situations.

We need to know the state of our ecosystems, how they function and to monitor how they are changing. Whilst we have generally good data from protected areas, or for certain groups of species, there is often very little information available on the condition of the wider countryside and the organisms in it. For example, much of the Scottish uplands are priority habitats, yet the limited condition data available is in the hands of the land managers; there is no national level picture of the condition of these habitats or the current impact of drivers of change such as grazing.

Flexible research capacity: The threats to biodiversity are always changing; new challenges – for example the recent ash dieback outbreak – need flexible and rapid responses from research scientists and the maintenance of research capacity. We need a balance of different scientific approaches and must ensure funding maintains the strategic research capacity that provides the flexibility to tackle new challenges. For example, an equivalent of AgriTech initiatives (e.g. NatureTech initiatives) may be required that gives better tools and ways of gathering the primary data that we need.

Social and economic sciences: The use of ecosystem service concepts to frame much of the 2020 Challenge document has led to a broadening of the research relevant to the SBS, such that it now includes substantial elements of environmental economics and social science. There is a continuing need for these research areas to be integrated into research activity to help us adequately understand the social and economic benefits from natural capital, as well as to find resolutions to contested situations. For example, a key aim of the *2020 Challenge* is to "Connect people with the natural world, for their health and wellbeing and to involve them more in decisions about their environment". Evidence is building regarding health and wellbeing; this needs to be developed to consider aspects such as the role of biodiversity as well as 'greenspace', and the concept of green infrastructure.

Many other aspects of 'connecting people with the natural world' are poorly understood; people and groups differ in their relationship with nature and mainstream interventions often promote only subsets of these relationships. Similarly, 'involving people in decisions about their environment' can lead to disputes when goals are not shared.

Resolving conflicts:

There is conflict over the management of many species that are of conservation concern or are iconic for Scotland. Conflicts can arise because changes in habitats to promote a particular species conflict with other users of these areas (e.g. capercaillie and woodland expansion), because the conservation of a species has

been so successful that the species itself is now impacting on the management objectives of land owners (e.g. wild geese or sea eagles), or because alternative land uses (e.g. recreation) impact on wildlife. These conflicts can be characterised as a need to reconcile public and private interests and are essentially people problems.

Adaptive conflict management (ACM) frameworks can address these issues: implicit in this is the need for a multi-disciplinary approach recognising the need to understand the causes of the conflict including a sound understanding of how management actions affect the species in question (returning to the need for primary data gathering). The ACM framework needs to be applied in these conflicts and the capability to use these tools needs to be developed and supported by local agency (e.g. SNH) staff. These approaches need more research, and more dialogue between researchers, policy makers, NGOs, land managers and other stakeholders to understand the causes of conflicts and to develop and implement approaches to deal with them. Such dialogue would again be aided by a dedicated Centre of Expertise for Ecosystems.