

Scottish Wildlife Trust

Briefing



Scottish Government Debate:

Biodiversity

Background

Over 20 years ago, the Earth Summit formally recognised that biodiversity was crucial to human wellbeing and this led to 193 countries signing up to the Convention on Biological Diversity (CBD). Because the global 2010 biodiversity targets to preserve biodiversity were missed, a new set of targets - the Aichi targets - were set by the CBD and these form the framework for Scotland's second biodiversity strategy, the 2020 Challenge.

Why is biodiversity so important?

Biodiversity is the key building block of ecosystems and there is now scientific consensus that biodiversity has a fundamental role to play in how ecosystems work as well as mounting evidence showing that biodiversity is vital for ecosystem services provision.^{1,2} These 'free' natural benefits such as: crop pollination, flood prevention, carbon storage, eco-tourism, marine fisheries, increased soil, air and water quality - which allow Scotland to prosper, are worth at least £21 billion per annum.³

There is also an increasing realisation that the impacts of species loss from ecosystems might be large enough to rival the impacts of other global drivers affecting our environment such as climate change.

The value to 'Brand Scotland'

The quality of Scotland's natural environment is significant to 'Brand Scotland' and being recognised for maintaining high environmental standards is essential to Scotland's economy. The visitor economy is worth at least £11.6 billion⁴ (nature-based tourism, sold on the quality of its beautiful land and seascapes and iconic species such as Atlantic salmon, Scottish wildcat, golden eagle, osprey, red deer and bottlenose dolphins, is estimated to generate at least £1.4 billion, with c. 39,000 full-time equivalent jobs;⁵ tourist expenditure on marine-related activities in Scotland is estimated at £3.5 billion per year⁶) and the food and drinks sector worth about £14 billion per annum,⁷ of which at least £5.1 billion is in exports.⁸ The beauty of Scotland's landscapes and nature-rich spaces in and around cities also makes Scotland an attractive place to do business as well as attracting people with knowledge and skills.

Contact with nature is good for you

High quality outdoor space contributes to health and wellbeing; a growing body of evidence shows that access to good quality urban greenspace is essential for physical activity,^{9,10} positive mental well-being¹¹ and healthy childhood development.¹² Contact with nature has also been shown to reduce the severity of childhood Attention Deficit Hyperactivity Disorder.¹³ In addition, it has been found that income related health inequalities are reduced by having easy access to high quality greenspace.¹⁴

How is Scotland's biodiversity and the natural environment faring?

- The State of Nature Report 2016¹⁵ presents a mixed picture of Scotland's biodiversity in terms of species winners and losers e.g. dotterel, lapwing and curlew declining whilst black caps and great spotted woodpecker are increasing; specialist butterflies such as marsh fritillary are declining, generalists are increasing. In the marine environment, breeding seabird numbers, a good indicator of the state of the marine environment, have fallen by 38% since monitoring began in 1986. More alarming is the Biodiversity Intactness Index (BII) which assesses the extent of the loss of nature due to human activities; BII values below 90% indicate that ecosystems may have fallen below the point at which they can reliably meet society's needs (i.e. in terms of natural benefits). The value for Scotland is 81.3% and is therefore of great concern.
- The State of the Environment Report shows that some habitats and species are under threat, and poor air quality continues to affect some people in Scotland's towns and cities.¹⁶ For example, wetlands are in a poor state; some species associated with farmland are in decline (e.g. of 61 farmland bird species, nine have declined massively between 1995 and 2011, with some now so scarce that they have almost disappeared) and 14% of ancient woodland has been lost over a 40-year period. The Native Woodland Survey also shows that native woodlands remain in a vulnerable state – the key pressures being fragmentation, deer browsing, non-native tree planting and

the spread of invasive non-native plants and animals, as well as underlying threats from plant pests and diseases, climate change and atmospheric deposition of pollutants.¹⁷ Of particular concern are the upland oak woodlands which are important for biodiversity especially the Atlantic woodlands of western Scotland with their internationally important lower plant assemblages.¹⁸ Not only are there less woodlands, there is very little tree regeneration (c 7%) which risks their long term viability - herbivores are the biggest threat.

- A key reference point in relation to how Scotland's natural capital¹⁹ is faring is the Natural Capital Asset Index²⁰, which provides an overview of the state of Scotland's natural assets, assessing the quality and quantity of habitats in Scotland, as well as their potential to deliver different ecosystem services.²¹ Between the 1950s and 1990s Scotland's natural capital declined. Since 1990 there has been a slight recovery, with freshwaters, woodland, coast and urban greenspace showing the greatest improvement although levels are still well below the baseline years. Upland habitats and agricultural habitats are still in decline.²²
- The Scottish Biodiversity Strategy (SBS) Route Map interim reports states good progress to the 2020 Aichi targets in areas such as peatland restoration; taking learning outdoors; restoration of freshwaters; increase in environmental status of our seas. Lack of progress is reported for the creation of a National Ecological Network; native woodland planting and restoration; invasive non-native species prevention and application of ecosystem health indicators at the landscape scale.

What more needs to be done?

- The Scottish Wildlife Trust wants the Scottish Government to make a lot more progress towards: creating a National Ecological Network (there has been none to date at the *national* level) and increasing native woodland planting and restoration, both of which would increase Scotland's biodiversity and help restore ecosystem health - thus making Scotland's wildlife more resilient to climate change and resistant to the threat of pests and diseases.
- Investment in landscape scale projects, including the removal of invasive non-native species, reducing flood risk, peatland restoration, increased habitat connectivity, riparian woodland restoration, and reducing herbivore pressure could be prioritised by rolling out the Land Use Strategy (LUS) at the catchment scale which would also help Scotland mitigate and adapt to the effects of climate change (see also the section on Realising land stewardship below). To drive forward the LUS, particularly taking a regional approach, will need political leadership, capacity and adequate resources.
- With regard to the marine environment:
 - A well-connected and effectively managed MPA network should be completed, beginning with the designation and protection of the four mobile species MPAs.
 - Marine Planning Partnerships need to be established and Regional Marine Plans completed so that implementation can begin; done correctly, marine planning can provide a clear and easily accessible method of sustainable management that encourages stakeholder involvement, allowing representatives from large industries, conservation groups and local community groups to be included in the decision-making process.
 - The full carbon-sequestration value and ecosystem-service potential of Scotland's blue carbon habitats²³ needs to be further investigated and acknowledged in future marine conservation and management plans.
- Because of the health benefits that accrue from contact with nature,²⁴ there needs to be increased links between Directorates relating to health, communities and the environment. We recommend the need to reinvest a small proportion of health budgets in the 'natural health service' so that individual projects can be scaled up to have an effect on population health at the regional and/or national scale. We also suggest:
 - Prescribing a 'green pill' where appropriate e.g. green gyms; community gardening, conservation activities
 - Health and wellbeing benefits of contact with nature being part of medical curriculum
 - All new build schools must be designed and located to have access to nature-rich places – either as part of school grounds or within walking distance
 - Health economics - research exploring total costs and benefits of budget shifting in order to strengthen the economic case for prioritising environmental investment especially in areas of multiple deprivation.
- Scottish Planning Policy needs more robust policies regarding the 'green elements' of planning to ensure nature is 'designed in' and to create the step change needed to protect and improve the quality of green infrastructure in development. We believe many of the 'shoulds' regarding green infrastructure, natural environment, designated sites and woodlands need to become 'musts' which would place planning for and protecting existing high quality GI on a statutory footing (see Sections 194 - 233 in current SPP).
- To see how Scotland's ecosystems are faring and how effective intervention measures and spending are, there needs to be more progress on applying ecosystem health indicators at the catchment scale (the suite of indicators have been in development for at least three years).
- In addition, good governance of Scotland's biodiversity strategy requires: regular reporting to and meetings of the SBS delivery board (now through Rural Affairs, Food and Environment (RAFE) - "which has yet to decide how they

wish to deal with biodiversity and land use governance”²⁵) and cross Directorate support and policy alignment to enable delivery of the SBS.

Examples of what Scottish Wildlife Trust is doing to help Scotland’s biodiversity

Species conservation

- Red Squirrel - the Trust has been awarded a grant of £2.46 million from the Heritage Lottery Fund for the Saving Scotland’s Red Squirrels – Developing Community Action project.²⁶
- Scottish Beaver Trial - the Trust was one of the lead partners in the Scottish Beaver Trial, which saw the first licensed reintroduction of a mammal in the UK.
- Restoring rare grassland plant species such as great burnet, lesser butterfly orchid and field gentian through being part of the Save Our Magnificent Meadows²⁷ project – which involves the Trust’s Flying Flock.
- Northern brown argus butterfly – restoring grassland through seasonal grazing and temporary fencing to encourage the butterfly food plant, rock rose, at East Lammermuir Deans and Linn Dean Wildlife Reserves.

Habitat conservation

- The Trust manages 120 wildlife reserves for the benefit of both people and wildlife throughout Scotland. By demonstrating innovative techniques, we aim to influence other land managers in best practice conservation land management. Sixty percent of the reserves we manage are nationally important sites (Sites of Special Scientific Interest (SSSI)) and 95% of these SSSIs are in favourable/recovering condition (which is higher than the Scottish average).
- Trust is involved in the active management of non-native invasive species on our reserves along rivers and waterbodies for example the control of giant hogweed at Spey Bay and removal of Himalayan balsam and lupins at Tummel Shingle Islands Wildlife Reserve.
- We have restored lowland raised bogs on six of our wildlife reserves through Peatland Action funding. At Cander Moss we pioneered and demonstrated new restoration techniques such as peat bunding.
- The Trust is involved in restructuring woodlands through our Cumbernauld Living Landscape, as part of a forest design plan, and is taking forward ambitious plans for native woodland planting and regeneration at Largiebaan, Rahoy Hills and within the Coigach and Assynt Living Landscape.
- Across our Reserves we are engaged in deer management, including a flagship 'hill to grill' skills development project as part of the Coigach & Assynt Living Landscape.

Ecosystem/landscape scale restoration

- The Trust is a lead partner in three Living Landscape projects – Cumbernauld Living Landscape,²⁸ Edinburgh Living Landscape and Coigach and Assynt Living Landscape. As an example, the Coigach and Assynt Living Landscape is one of the largest landscape-scale restoration projects in Europe, aiming to benefit the land, people and local economy in the north west of Scotland. The Coigach and Assynt Living Landscape Partnership Scheme is a Heritage Lottery Funded project comprising 14 partner organisations. The Partnership comprises community land-owners, community interest groups, charitable land-owners, private land-owners and charitable membership organisations. Collectively these Partners are committed to delivering a Scheme comprising 28 individual projects over 5 years to September 2021.

Connecting people to nature

- The Trust has over 1000 volunteers who help the Trust deliver its vision of a ‘network of healthy, resilient ecosystems supporting expanding communities of native species across large areas of Scotland’s land, water and seas.’ Activities range from protecting nesting ospreys from egg stealers at Loch of the Lowes to practical conservation work such as INNS removal, tree planting, species surveys and improving public access to our wildlife reserves.
- We also have our Wildlife Watch groups²⁹ who organise lots of fun events and activities for children. There are currently 28 of these clubs located across Scotland, with over 300 members aged between 5 and 16.
- Through our Living Seas project in the northwest of Scotland, funded by the Esmée Fairbairn Foundation, we have connected people to marine life and promoted the value of MPAs e.g. by developing Scotland’s first ever snorkel trail from Gairloch to Clachtoll,³⁰ by helping run two seafood festivals based on local and sustainable seafood products, by encouraging beach cleans and shore watch (cetacean) surveys and by getting families involved in local angling competitions.
- Through the Cumbernauld LL we are connecting people to nature: the Wild Ways to Wellbeing³¹ is a unique new programme which targets three groups of participants who are currently experiencing or at risk of developing mental health issues; and Natural Connections³² involves working with local schools and communities to improve three important wildlife sites in the Cumbernauld Living Landscape. In Edinburgh Living Landscape³³ there is a shore

line project to reconnect citizens with the past and present marine environment and we will soon be launching a pollinator pledge to encourage local people to create a pollinator network where they live.

Natural capital and business

- The Trust organised the first ever World Forum on Natural Capital³⁴ in 2013, which had three aims: to highlight opportunities for businesses to make a 'net positive' contribution to our natural environment, for the benefit of biodiversity, the economy and society; to work with businesses and governments to help develop and implement robust methodologies for accounting for natural capital; and to ensure that the highest possible standards are applied to new systems of natural capital valuation. The second World Forum was held in 2015 and the Trust is organising the third World Forum on 27-28 November 2017.
- The Trust is also a founding partner of the Scottish Forum on Natural Capital which brings together businesses, policy makers, academics and NGOs to understand impacts and dependencies on natural capital and catalyse action to protect and enhance Scotland's natural capital. Along with the Crown Estate, Scottish Land & Estates, Scottish Government, SEPA, Scottish Natural Heritage, and James Hutton Institute the Trust is involved in a project to test the Natural Capital Protocol and understand its relevance to land-based business in Scotland. The Trust is also working with a large utilities firm to run a pilot of the Natural Capital Protocol that has the potential to lead to wider application within the business and influence their decision-making process.

Realising land stewardship through better regulation and incentives

- The Trust is developing a Land Stewardship Policy (currently out for consultation) which provides a set of solutions for safeguarding and enhancing the natural capital value of land in Scotland in order to address the challenges facing society, the environment and the rural economy: better protecting and preserving our soils; reducing greenhouse gas emissions and adapting to a changing climate; and restoring wildlife habitats and reversing biodiversity loss. The basis of this policy is a common framework for regulating and incentivising land stewardship.

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¹ Cardinale et al (2012) Biodiversity loss and its impact on humanity. *Nature*

² Science for Environment Policy (2015) *Ecosystem Services and the Environment*. In-depth Report 11 produced for the European Commission, DG Environment by the Science Communication Unit, UWE, Bristol. Available at: <http://ec.europa.eu/science-environment-policy>

³ RPA & Cambridge Econometrics. (2008). *The Economic Impact of Scotland's Natural Environment*. Scottish Natural Heritage Commissioned Report No.304 (ROAME No. R07AA106).

⁴ 2013 Visitor Scotland figures see: http://www.visitscotland.org/what_we_do/deliveringforscotland.aspx

⁵ Bryden et al (2010) cited in UK National Ecosystem Assessment 2011

⁶ Marine Tourism Success - <http://news.scotland.gov.uk/News/Marine-tourism-success-248f.aspx>

⁷ <http://www.bbc.co.uk/news/uk-scotland-scotland-business-37266921>

⁸ 2014 Scottish Government estimate see: <http://news.scotland.gov.uk/News/New-record-for-Scottish-food-exports-1933.aspx>

⁹ Tanaka A., Takano T., Nakamura K., (1996) Health levels influence by urban residential conditions in a megacity. *Tokyo Urban Studies* 33: 879-945.

¹⁰ Sugiyama T., Thompson C.W., (2007). Older people's health, outdoor activity and supportiveness of neighbourhood environments. *Landscape and urban planning*. Vol 83 (2-3) 168-175

¹¹ De Vries S, Verheij R A and Groenewegen P (2001). *Nature and Health .The Relation between health and green space in people's living environment*. Euro Leisure-congress Netherlands.

¹² Sadler et al (2010) *Bringing cities alive: the importance of urban greenspaces for people and biodiversity*. *Urban ecology* (ed. K.J. Gaston) Cambridge University Press, Cambridge.

¹³ UK National Ecosystem Assessment (2011) Page 386

¹⁴ Mitchell R, Popham F (2008). Effect of exposure to natural environment on health and inequalities: an observational population study. *The Lancet*, Volume 372, Issue 9650, pp1655- 1660.

¹⁵ http://scottishwildlifetrust.org.uk/docs/002_466_stateofnature2016_scotland_1sept_1473756177.pdf

¹⁶ <http://www.environment.scotland.gov.uk/get-informed/state-of-the-environment-summary/>

¹⁷ Paterson et al (2014) *Native Woodland Survey of Scotland (NWSS) Forestry Commission Report*

¹⁸ Taken from NWSS pages 70-74

¹⁹ Natural Capital can be defined as the stocks of natural assets which include geology, soil, air, water and all living things

²⁰ <http://www.snh.gov.uk/docs/B814140.pdf>

²¹ <http://www.gov.scot/About/Performance/scotPerforms/indicator/naturalcapital#influence>

²² <http://www.snh.gov.uk/docs/B814140.pdf>

²³ https://scottishwildlifetrust.org.uk/wp-content/uploads/2016/09/002_433_final_blue_carbon_briefing_march_2016_1469434363.pdf

²⁴ See: https://scottishwildlifetrust.org.uk/wp-content/uploads/2016/09/002_433_health_june2016_1465206949.pdf

²⁵ Answer to Question S5W-05251: David Stewart, Highlands and Islands, Scottish Labour, Date Lodged: 01/12/2016

²⁶ See: <https://scottishwildlifetrust.org.uk/news/major-boost-for-scotland-s-red-squirrels-thanks-to-national-lottery-funding/>

²⁷ <http://www.magnificentmeadows.org.uk/conservate-restore/east-and-central-lowland-scotland>

²⁸ <http://cumbernauldlivinglandscape.org.uk/>

²⁹ <https://scottishwildlifetrust.org.uk/things-to-do/wildlife-watch/>

³⁰ <https://scottishwildlifetrust.org.uk/things-to-do/snorkel-trail/>

³¹ http://scottishwildlifetrust.org.uk/docs/002_433_health_june2016_1465206949.pdf?platform=hootsuite

³² <http://cumbernauldlivinglandscape.org.uk/flagship-projects/natural-connections/>

³³ <https://scottishwildlifetrust.org.uk/our-work/our-projects/living-landscapes/edinburgh-living-landscape/>

³⁴ <https://scottishwildlifetrust.org.uk/our-work/our-advocacy/natural-capital/>