Piloting Natural Capital Accounts on SNH Land

Scottish Natural Heritage
Dualchas Nàdair na h-Alba
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Key messages

- Land owned and managed by Scottish Natural Heritage generates estimated benefits of £28m per year
- The value of the benefits from SNH land is eight times higher than the costs to maintain them.
- These accounts demonstrate the value to people from nature, and from SNH land in particular

Summary

Natural capital is the world's stock of natural resources, which includes geology, soils, air, water and all living organisms. Natural capital 'assets' such as habitats and ecosystems provide a wide range of benefits to human wellbeing, known as ecosystem services.

SNH has tested this approach on land that we own or substantially manage, mainly as National Nature Reserves. Where possible we have tried to attribute a monetary value to benefits from nature.

This natural capital account is the first to be produced for SNH land. It uses an experimental methodology which needs further refinement but has been trialled as part of our role in promoting the concept of natural capital.

Not all ecosystem services could be valued (for example, flood management) so the full value may be much higher.

Having good information on the state of the natural assets and the benefits it provides can help land owners and managers consider how best to use their land to benefit society.

These accounts will inform future decisions about SNH land and its management to secure greater benefits for people and nature.

Results

Results are presented in a balance sheet [right]. The results have been split into public and private, costs and benefits. Values are for the benefits provided during the life of the asset of 60 years in line with government guidance.

Public value represents the value of benefits that the public gain for free from ecosystems on SNH land such as carbon sequestration by forests and saltmarshes.

Private value represents the ways that SNH benefits directly, this includes sales of food reared on SNH land, renewable energy generated and the benefits provided by volunteers.

At December 2017	Monetary Values		
	Value to SNH (PV £m)	Value to Public (PV £m)	Total Value (PV £m)
Benefits			
Food	1.3	1.6	2.8
Energy	0.4	-	0.4
Carbon sequestration		70.3	70.3
Air quality		1.8	1.8
Physical health		14.2	14.2
Recreation & Tourism		666.2	666.2
Education & Volunteering	11.0	8.9	19.9
Wildlife	-	-	-
Gross Asset Value	12.7	762.9	775.6
Maintenance Costs			
SNH Management	(81.5)	-	(81.5)
Volunteer effort	-	(11.0)	(11.0)
Total Maintenance Costs	(81.5)	(11.0)	(92.6)
Net Natural Capital	**(68.8)**	**751.9**	**683.0**

The total sum of private and public benefits over 60 years is £683m

Maintenance costs reflects the ongoing costs of managing and running SNH land. Using current data this is projected to cost SNH £81.5m over 60 years. Activities by volunteers to manage the land amount to £11m. When maintenance costs are included the long term benefits from SNH land equal £683m.

The balance sheet demonstrates that the value of benefits to society is eight times the costs of maintaining and enhancing nature on SNH land.

Methodology

Full details of the methodologies can be found in the full report. Summaries are described below.

Food – market income from sheep, cattle and venison products.

Recreation & tourism – the benefits from recreation is the standard value of health benefits gained from visiting the outdoors multiplied by the number of visitors (750,000), these also include health benefits from visits by the local population. Value of tourism is estimated using the average spend of tourists in Scotland (£72/night) and combining that with the estimated numbers of overnight visitors.

Education and volunteering – There were 11,700 educational visits to SNH land in 2017; economists have been able to assign a value for educational visits of £25.91 per visit. Benefits created by volunteers were calculated by assessing the skill level of the work undertaken by volunteers and how much an equivalent workforce would have cost to employ.

Climate regulation (greenhouse gas flux) – Rates of carbon sequestration were calculated based on the ecosystem type and estimates of its condition, and using standard estimates published in 2017. This allowed a calculation of tonnes of CO_2 equivalent that are locked up each year, helping to regulate the environment and reduce climate change impacts.

Renewable energy production – Wind and hydro schemes on SNH land generate on average 127,000 kWh per year. The average grid rate for a kWh over the past three years is 12p/kWh.

Air quality – Air pollution is a major health issue in the UK. Modelling of forests on SNH land suggested that the ability of forests to trap harmful pollutants is saving the NHS £73k per year in medical costs.

Human health and well-being – Using visitor survey data it was estimated that 18% of visits were for physical activity (135,000 total). These were then multiplied by the average avoided health costs per visit. This value is based on a wide range of medical research illustrating the benefits of an active lifestyle and the avoided costs for wider society of healthier individuals.

Natural Capital and Biodiversity

The natural capital approach struggles to place a value on biodiversity as it sits at several points on the value chain. Biodiversity is fundamental for supporting healthy and functioning habitats and ecosystems and therefore it directly supports all the benefits provided through ecosystem services. However, the pure existence of biodiversity itself can be seen as a benefit on its own. One that is intangible to many and beyond monetary figures.

For the purposes of the SNH land account we have not attempted to value biodiversity but recognise its importance to support wider ecosystems. Using data already collected for site condition monitoring we have assessed the condition of habitats on SNH land. Only features that are *in-situ* i.e. directly attributable to a habitat were included, which is why they vary slightly from official statistics on condition of protected sites.

Further information

Natural Capital accounting is just one of the ways the Natural Capital approach can be applied. Examples of natural capital accounting at a national level can be found in the experimental natural capital accounts for Scotland which complement Scotland's Natural Capital Asset Index, a non-monetary approach that links natural capital directly to wellbeing at a national level. The Natural Capital Protocol was built for businesses, and examples of it applied to land based businesses in Scotland can be found here.

The full report can be found on SNH's website. Please get in touch if you would like any more information.

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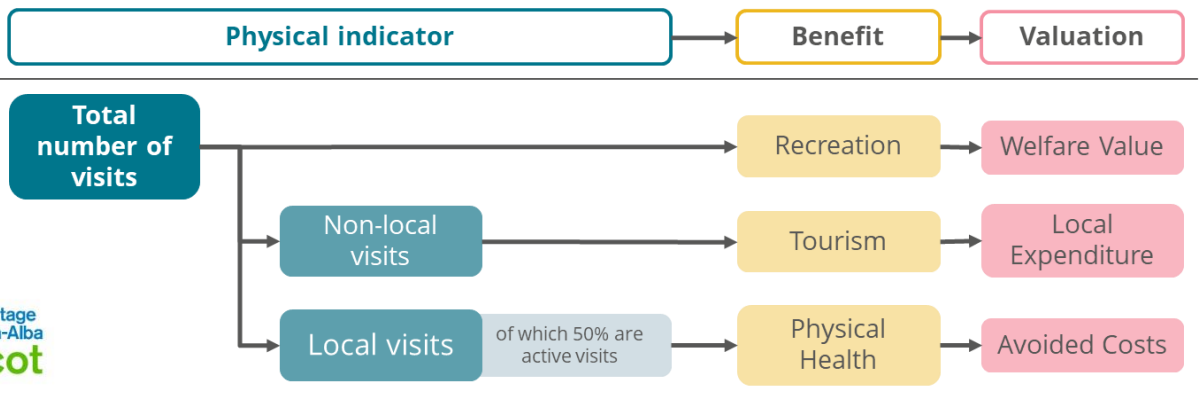
Below: An example logic chain showing how the number of visits to SNH land can be used to infer recreation, tourism and health benefits. In turn these benefits can be valued.



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