## EVIDENCE FOR SCOTLAND'S LAND REFORM POLICY REVIEW (2012-2014)

# The socioeconomic benefits of the ownership and management of land by environmental non-governmental organisations (NGOs)

A report prepared by the Centre for Mountain Studies, Perth College, University of the Highlands and Islands (UHI)

**Date:** April 2013

**Report prepared for:**

John Muir Trust (JMT)
National Trust for Scotland (NTS)
RSPB Scotland (RSPB)
Scottish Environment LINK (LINK)
Scottish Wildlife Trust (SWT)
Woodland Trust Scotland (WTS)





# CONTENTS



This report should be cited as:

Mc Morran, R., Glass, J, Frankland, D. (2013) Evidence for Scotland's Land Reform Policy Review (2012-2014) - *The socioeconomic benefits of the ownership and management of land by environmental non-governmental organisations (NGOs)*. Commissioned report prepared by the Centre for Mountain Studies, Perth College-University of Highlands and Islands.

## KEY FINDINGS

1. **Land owned and managed by environmental NGOs in Scotland extends to over 207,000 hectares.** In contrast to the common perception of NGOs as major landowners in Scotland, the total area of land under their ownership and management accounts for a relatively small (2.6%) proportion of Scotland. NGO owned and managed land is relatively widely distributed, with particularly large areas evident in the Cairngorms, the Flow Country and the West Highlands.
2. Despite this being a relatively small proportion of Scotland, **NGO owned and managed land accounts for a disproportionally high amount of land designated for natural heritage values.** Specifically, NGO owned and managed land is over 12 times more prevalent in areas designated as National Nature Reserves (**31.5% of all NNR land in Scotland is NGO owned/managed**). This proportional imbalance is also evident (to a lesser extent) in the case of all other conservation designations.
3. Significant areas of NGO owned and managed land are subject to multiple overlapping natural heritage and landscape designations, with **over 50% of all NGO owned and managed land subject to 2 or more overlapping designations and over 30% subject to 3 or more**. This demonstrates the comparatively high natural heritage value and national and international importance of significant areas of NGO owned and managed land.
4. In total, **48% of NGO owned and managed land is also designated as National Scenic Area**, with NGO owned and managed land again accounting for a disproportional amount (9.6%) of all NSA designated land. Note that the figures shown here in summary note 3 and 4 do not include areas designated for the historic significance, of which there are a large number on NGO owned (particularly NTS) land.
5. Employment directly related to site management accounts for between 20-30% of all employment in the five major landowning environmental NGOs in Scotland (RSPB, NTS, WTS, SWT and JMT). **Direct employment in site management accounts for 305 FTEs, with a total of 1002 FTEs employed by landowning environmental NGOs in Scotland.** Some sites employ a range of permanent and part-time staff across a variety of positions, with Mar Lodge (NTS) employing 21 permanent staff and Abernethy (RSPB) employing 12.2 FTEs (a considerable increase on the site staffing levels prior to NGO acquisition). All organisations employ additional seasonal staff at peak visitor/activity seasons.
6. Landowning NGOs contribute significantly to the Scottish economy, with the **total direct expenditure on site management equating to over £37 million**. When wider organisational expenditure is included, **this figure rises to over £63.9 million**. Taking the £37 million figure alone, this equates **to an average spend of £181 per hectare on land** owned and managed by NGOs. On average, these organisations are spending 54% of their total expenditure directly on land management. Approximate calculations of the economic impact of sporting land management, based on previous studies, indicate a combined total (direct *and* indirect) spend on deer stalking and grouse shooting of £64 per hectare (Section 4.5). **Notably, this calculation includes indirect economic impacts, while the current study of NGO landownership and management only accounts for direct economic contributions.** Wider studies and case study findings indicate that indirect **economic impacts of NGO landownership and management are likely to be considerable.** For example, **an estimated further 69 jobs have been created locally from the visitor numbers associated with the RSPB Abernethy reserve** and **local spend by visitors to Abernethy and to the NTS's Mar Lodge site is estimated at being in the region of £790,000 and £2.25-2.78 million respectively** (based on average visitor spend in the national park and **not including overnight accommodation expenditure**, which the Cairngorms National Park Visitor Survey suggests is as high as £263.63, as the division of day and overnight visitors is not known for these sites). These

findings indicate that the levels of economic impact of NGO landownership and management are comparable with, or greater than, impacts from traditional land uses.

7. All reviewed NGOs employ rangers and/or part-time or full-time site managers (working across multiple sites in certain cases). The management and/or improvement of public access and interpretation is a primary objective of all landowning NGOs and an area of considerable activity across most sites. **Path development and maintenance carried out by NGOs, with support from wider organisations is a critical aspect of facilitating access on these sites.** The NTS alone manages over 650km of footpaths and has restored over 100km of upland footpath network.
8. Land owned and managed by NGOs in Scotland is regularly visited by high numbers of people, including walkers, nature watchers and other recreationalists and sightseers. The **total estimated annual visitor numbers across all land owned and managed by NGOs is over 3 million** (3,386,504). Depending on the figure used for day spend, **the local economic impact of these visitors is estimated at being between £22 and 89.6 million.**
9. **NGO owned and managed land includes some of the most well-known and heavily visited sites in Scotland, including iconic mountain areas** such as Glencoe and Dalness, West Affric, Torridon, Ben Lawers (NTS), Ben Nevis, Schiehallion and Sandwood Bay (JMT). These areas also include **sites undertaking large-scale restoration initiatives** in areas of existing high biodiversity value, including the native woodland restoration and expansion programmes at Abernethy (RSPB), Mar Lodge (NTS) and Dundreggan (Trees for Life) (among others) and large-scale peatland restoration at Forsinard (RSPB) in the Flow Country. NGO owned sites also include **sites of unrivalled cultural significance importance** (e.g. the NTS properties of Iona and St Kilda). A number of NGO owned sites also act as **exemplar sites for different elements of land management**, such as the WTS owned Glen Finglas site (multifunctional forestry management). NGO ownership and management of land also represent a key component of the development of Scotland's urban green networks, with the **SWT and WTS in particular owning and managing a number of urban and peri-urban sites** (e.g. Livingston (WTS) and Falls of Clyde (SWT)).
10. The Scottish Government recognises that volunteering is a key component of strong communities and volunteers contribute significantly to the work of landowning NGOs in Scotland. Annually, **over 5,400 people volunteered on sites owned and managed by NGOs in Scotland, equating to an average of 13 volunteers per site who worked a total estimated 274,173 volunteer hours**. In economic terms, based on the minimum hourly wage (£6.08), this equates to over £1.6 million in equivalent staffing costs. Based on a wage of £10.00 per hour, which NGO respondents estimate is closer to the actual cost equivalent based on normal staffing costs, this figure rises to over £2.7 million.
11. Landowning NGOs **engage in a range of activities relating to community engagement and partnership working**. These include the majority employing **community engagement officers and/or rangers** and establishing **local and regional working groups**. NGOs also engage with communities through a wide range of committees and working groups, including initiatives such as landscape partnerships. Environmental NGOs also engage in a **very wide range of educational activities across a spectrum of ages**, including the establishment of visitor centres with specific educational elements and teaching staff, developing materials and outdoor educational opportunities linked with the national curriculum and developing a wide range of specific activities for children. Environmental NGOs **also develop and manage wider experiential educational experiences**, including the John Muir Award scheme.
12. Environmental NGOs also **engage in direct partnership working with communities, including supporting the purchase and management of community land** and supporting the development of unique community-based ecosystem restoration initiatives, such as Carrifran Wildwood. Wider activities include working with crofters

in agri-environmental initiatives and **advising farmers in relation to available support measures for biodiversity-friendly farming**.

13. Through trialling new practices and developing innovative approaches, the **NGO landowners can act as an exemplar, both in relation to conservation land management and integrated land management**. Land management **practices and initiatives on NGO owned and managed sites have the capacity to influence land management practices more widely, including on public and privately owned land**.
14. Landowning environmental NGOs also **engage in large-scale collaborative ecosystem restoration initiatives in conjunction with a wide range of NGO, public and private partners**. These include the SWT-led Living Landscape initiatives, the RSPB-led Futurescape initiatives and the Great Trossachs Forest initiative. These initiatives aim to ensure the sustainability of ecosystem services provision and the delivery of socio-economic benefits for communities over the long term.

# 1. Background and Objectives

## 1.1 Background

Several environmental non-governmental organisations (NGOs) own and manage land in Scotland. Direct purchase of land has often occurred for a number of reasons, including: protecting wildlife and habitats; safeguarding outstanding scenery and landscapes; protecting areas for amenity use; responding to threats from inappropriate development; failures of government environmental and access policy; and protecting and restoring wild land and/or natural and semi-natural species and habitats. Direct ownership of land also allows the practical demonstration and implementation of conservation management practices, to influence the land management practices of other owners.

Landowning environmental NGOs have a variety of management objectives, linked to the overarching aims of each organisation. This study focuses on the activities of five large environmental NGOs who own significant areas of land in Scotland: John Muir Trust (JMT); National Trust for Scotland (NTS); Royal Society for the Protection of Birds (RSPB); Scottish Wildlife Trust (SWT) and Woodland Trust Scotland (WTS). Some additional data is included for: Borders Forest Trust (BFT), Trees for Life (TFL) and Plantlife. More information about each of these organisations is provided in Box 1.1.

**Box 1.1** General information about landowning environmental NGOs

The **National Trust for Scotland (NTS)**, established in 1931, owns and manages around 77,000 hectares of countryside properties, including 16 islands. The Trust has four core purposes: conservation, access, education and enjoyment. The Trust's larger and remoter rural properties are also managed according to a Wild Land Policy, based on maintaining the wildness of the landscape to ensure continuity of high-quality recreational experiences and scenic landscapes.

The **Royal Society for the Protection of Birds (RSPB)**, established in 1889, is Europe's largest conservation charity with over a million members and 20,000 volunteers. The RSPB manages 71,115 hectares across Scotland, spread over 74 reserves across three regions (East, North and South/West). The organisation has the core aim of conserving and enhancing wild bird populations and the environments on which they depend, to enrich the lives of people and ensure the long-term maintenance of ecosystems.

The **John Muir Trust (JMT)**, established in 1983, is the UK's 'leading wild land charity' and owns and manages 24,461 hectares of the wildest parts of Scotland. The Trust's vision is that wild land is enhanced and protected, and that people engage with wild places. As well as managing land through direct acquisition, the Trust works in partnership with other landowners to achieve their objectives, including four community land trusts and one private landowner.

The **Scottish Wildlife Trust (SWT)** acquired its first property in 1966 and now owns and manages 121 nature reserves across Scotland, covering just less than 20,000 hectares. Many sites are urban or peri-urban, given the focus of the Trust on inspiring and engaging people in wildlife and conservation. The core aim of the Trust is to establish a network of resilient ecosystems supporting expanding communities of native species across large areas of Scotland's land, water and seas.

**Woodland Trust Scotland (WTS)** acquired its first property in 1984 and now owns woodlands across over 8,500 hectares of Scotland on 80 sites, from Stranraer in the south to Sutherland in the far north. The Trust aims to improve and enhance biodiversity, encourage public access and enhance people's enjoyment of woodlands.

**Borders Forest Trust (BFT)** was established in 1996 to develop and manage ambitious habitat restoration and community woodland projects. BFT owns Carrifran Wildwood in the Borders, where 500,000 native trees have been planted and Corehead in the Ettrick Forest, in order to protect and enhance the landscape and restore natural habitats and wildlife.

**Trees for Life (TFL)** is the owner of the 4,000 hectare Dundreggan Estate near Invermoriston. TFL is dedicated to restoring the Caledonian Forest to a project area that spans 1,000 square miles of the Highlands. TFL works in partnership with a number of organisations and runs numerous volunteer conservation weeks.

**Plantlife** was founded in 1989 and focuses on the protection of wild plants and public education of the importance of wild plants. Plantlife owns the Munsary Peatlands in Caithness.

The Land Reform (Scotland) Act (2003) recognised that the structure of land ownership is a defining factor in the relationship between the land and the people of Scotland. This relationship has been recognised by the Scottish Government as 'fundamental to the wellbeing, economic success, environmental sustainability and social justice of the country '. In 2012-2014, the Scottish Government is establishing a Land Reform Review Group that will recommend how further land reform can be promoted and secured. This report provides evidence for the review process.

The overall aim of this study was to identify and understand the key socioeconomic benefits of ownership and management of land by the environmental NGOs shown in Box 1.1. The environmental benefits of NGO landownership are also reviewed to a degree, including the extent to which the land is designated, both for conservation and landscape values. The consequences of NGO ownership and management for habitats and species are also discussed within individual case studies included within the report.

### 1.2 Objectives

Specific objectives of the work were:

A. To assess the **extent of environmental NGO landownership and management** in Scotland;

B. To determine **the natural heritage significance and landscape value of land** under NGO ownership and management;

C. To **determine key socioeconomic benefits of NGO ownership and management of land**, including employment impacts, access and visitor numbers, extent of volunteering and direct spend;

D. To **assess the extent of community engagement on NGO owned and managed land, including educational engagement, community-NGO partnership working and wider partnership working** and collaborative initiatives between NGOs and wider stakeholders.

# 2. METHODOLOGY

## 2.1 Determining the extent and conservation/landscape values of land owned and managed by environmental NGOs

To address objective A and determine the extent of land owned and managed by environmental NGOs, information on the area, number of sites and distribution of land was acquired from all of the organisations shown in Box 1.1, tabulated, and summarised in an Excel database. To support this database and determine the relative significance of land owned and managed by NGOs in terms of conservation and landscape values (objective B), GIS analysis was also undertaken.

To develop a base map of all land owned and managed by environmental NGOs in Scotland, boundary data was collated from all relevant NGOs (Table 2.1). This was collated within ArcMap™ into a single data layer corresponding to all land owned and managed by environmental NGOs in Scotland. Map and tabulated outputs were produced, showing: the spatial extent of environmental NGO land (including minimum, maximum and average); the breakdown of land across the relevant organisations; and the overall proportion of Scotland owned and/or managed by these organisations.

**Table 2.1** Datasets used for GIS analysis of land owned and managed by environmental NGOs

| **Ownership boundary datasets** |
|---|
| John Muir Trust landholdings boundary data |
| National Trust for Scotland landholdings boundary data |
| Royal Society for the Protection of Birds Reserves boundary data |
| Scottish Wildlife Trust Reserves boundary data |
| Woodland Trust Scotland landholdings boundary data |
| Borders Forest Trust landholdings boundary data |
| Trees for Life (Dundreggan Estate) boundary data |
| **Datasets used to demonstrate relative conservation values** |
| National Nature Reserves (NNR) |
| Sites of Special Scientific Interest (SSSI) |
| Special Protected Areas (SPA) |
| Special Areas of Conservation (SAC) |
| Scottish National Parks |
| Local Nature Reserves |
| Ramsar Sites |
| World Heritage Sites |
| **Datasets used to demonstrate relative landscape values** |
| National Scenic Areas (NSA) |

To understand the relative conservation value of land owned and managed by NGOs, the ownership layer was subsequently overlaid against a range of spatial datasets of natural heritage designations (Table 2.1). The degree to which NGO land was under multiple (1-6) designations was also analysed as an indicator of relative conservation value and importance. Figures were compared with the extent of designated land nationally, to demonstrate the proportion of NGO land under designation relative to the extent of land under each designation type across Scotland as a whole.

To determine the relative landscape value of land owned and managed by environmental NGOs, the ownership layer was overlaid against a dataset of National Scenic Areas designations (Table 2.1). The NSA map is taken in this case as an indicator of relative landscape value and importance. In particular, the areas of land owned and managed by NGOs designated as NSA are identified, with results presented in tabular and mapped format. All

natural heritage and landscape related datasets were sourced from Scottish Natural Heritage through the Natural Spaces website portal.

### 2.2 Determining the socioeconomic benefits of NGO landownership and management

To determine key socioeconomic benefits related to the ownership and management of land by environmental NGOs (objective c), data were gathered from the relevant organisations and collated in an Excel spreadsheet. In particular, data were sourced for:

- the number of FTEs employed by all the NGOs, and the number of site-related FTEs;
- the number of visits made to individual sites;
- the number of volunteers associated with individual sites (and volunteer hours where possible);
- direct spend by the organisation in total, and direct spend related to site management (land-management related expenditure).

Data were collated, summed and presented in tabulated format. Where relevant and possible, findings were compared to the findings of other studies. In particular, data on employment and direct spend were compared, where possible, with employment and direct spend for more traditional land uses (e.g. deer stalking and grouse shooting).

### 2.3 Exemplar case studies

To understand the benefits of NGO ownership and management in greater detail, five 'exemplar' case studies were analysed. Case studies were selected in conjunction with the project Steering Group to reflect a diversity of properties in terms of property size, organisational ownership, a balance between rural/mountainous and peri-urban/urban sites and the core focus of management. The five selected sites are shown in Table 2.2.

Key representatives (site managers/project officers) were identified for each site and interviewed. These informants also provided site-specific information for review, in the form of management plans, site-specific reports and promotional materials. Information was collated relating to:

- the significance of sites in terms of their cultural and natural heritage and status as a visitor attraction;
- core site management objectives and key site management activities;
- site related employment and spend, including any available information on the importance of the site to local businesses;
- the level of NGO-coordinated volunteering on-site and associated impacts and benefits;
- the linkages evident between site management and local communities and wider partners (including successful examples of partnership and community working).

**Table 2.2** Case study sites selected for detailed analysis

| Site | Owner | Site type | Core management objectives |
|---|---|---|---|
| **Ben Nevis** | JMT | Large-scale (mountain/rural site) | Visitor management; wildness enhancement |
| **Mar Lodge** | NTS | Large-scale (mountain/rural site) | Habitat restoration; integrated management; tourism and education |
| **Abernethy** | RSPB | Large-scale (mountain/rural site) | Habitat restoration; interpretation |
| **Livingston** | WTS | Smaller scale (urban) | Visitor management; interpretation |
| **Falls of Clyde** | SWT | Smaller scale (peri-urban) | Visitor management; interpretation; habitat management |

The case studies are included throughout the main narrative of the report (Sections 4 and 5) to illustrate examples of a wide range of socioeconomic benefits.

### 2.4 Partnership working and community engagement

To address objective D, specific examples of partnership working and community engagement were gathered from the NGOs. Specific consideration was given to examples of:

- direct local engagement (e.g. community involvement in planning or management committees);
- educational engagement;
- community-NGO partnership working; and
- wider partnership working and collaboration between NGOs and wider stakeholders.

To explore collaborative working in greater depth, two further case studies of large-scale partnership initiatives were studied; the Great Trossachs Forest and Cumbernauld Living Landscape initiatives. The Great Trossachs Forest site includes Forestry Commission Scotland as a project partner. These two sites were selected for their contrasting characteristics, with the Cumbernauld site representing an urban/peri-urban site and the Great Trossachs Forest site representing one of the largest (rural) habitat restoration initiatives in Scotland. Site managers were interviewed in both cases, with site management plans and promotional materials reviewed to support the analysis. These case studies are included in Section 5 of this report.

*Volunteers in Livingston woods (WTS)*

# 3. The Extent and Conservation/Landscape Values of Land Owned and Managed by Environmental NGOs

### 3.1 Coverage of land owned and managed by environmental NGOs

Table 3.1 and Figure 3.1 present the results from the GIS analysis of landownership and management by environmental NGOs in Scotland. This can be compared with Table 3.2, which summarises the results of the data collation exercise and (non-GIS based) database development in conjunction with NGO contacts. NTS and RSPB own the largest amounts of land, followed by JMT, SWT and WTS and the remaining landowners. Based on the GIS analysis, *land owned or managed by environmental NGOs accounts for a relatively small proportion (2.6%) of Scotland*, *with a mean landholding size across all landholdings of 562 hectares*. This mean figure has been reduced significantly by the presence within the dataset of a number of relatively small NTS properties, including built properties (e.g. listed buildings). As apparent from Figure 3.1, NGO owned and managed land is relatively widely distributed across Scotland, with particularly large areas evident in the Cairngorms, the Flow Country and the West Highlands. NGO owned land includes some of the most well-known and heavily visited sites in Scotland, including iconic mountain areas such as Glencoe and Dalness, West Affric, Torridon, Ben Lawers (NTS), Ben Nevis, Schiehallion and Sandwood Bay (JMT).

**Table 3.1** Land owned and managed by environmental NGOs, based on GIS analysis (colours correspond to those used in Figure 3.1)

| NGO | No. of sites | Total area (ha) | % of Scotland | Mean area (ha) | Min area (ha) | Max area (ha) |
|---|---|---|---|---|---|---|
| **NTS** | 94 | 76,073 | 1.01 | 112 | <0.01 | 29,299 |
| **RSPB** | 74 | 66,793 | 0.85 | 903 | 1.82 | 19,331 |
| **JMT** | 9 | 24,459 | 0.31 | 2,718 | 149.14 | 6,444 |
| **SWT** | 120 | 19,820 | 0.25 | 165 | 0.08 | 6,191 |
| **WTS** | 56 | 8,633 | 0.11 | 154 | 0.36 | 4,882 |
| **BFT** | 5 | 1,324 | 0.02 | 265 | 8.07 | 660 |
| **Plantlife** | 1 | 1,261 | 0.02 | 1,261 | 1,261.00 | 1,261 |
| **TFL** | 1 | 4,028 | 0.05 | 4,028 | 4,028.14 | 4,028 |
| **Totals** | **360** | **202,391** | **2.62%** | 562.2 *(mean site size across all sites)* | | |

**Table 3.2** Land owned and/or managed by environmental NGOs based on tabulated data received from NGO contacts

| NGO | No. of sites | Owned land (ha) | Land under agreement[i] (ha) | Total area (ha) | % of all NGO land |
|---|---|---|---|---|---|
| **NTS** | 128[ii] | 77,206.34 | 3.40 | **77,209.74** | 37.14% |
| **RSPB** | 74 | 53,389.00 | 17,725.00 | **71,114.00** | 34.21% |
| **JMT** | 9 | 24,461.00 | - | **24,461.00** | 11.77% |
| **SWT** | 121[iii] | 12,125.14 | 7,698.37 | **19,823.51** | 9.54% |
| **WTS** | 57 | 8,643.80 | - | **8,643.80** | 4.16% |
| **BFT** | 5 | 1,324.00 | - | **1,324.00** | 0.64% |
| **Plantlife** | 1 | 1,261.00 | - | **1,261.00** | 0.61% |
| **TFL** | 1 | 4,028.00 | - | **4,028.00** | 1.94% |
| **Totals** | **396** | **182,438.28** | **25,426.77** | **207,865.05** | **100%** |

[i] 'Land under agreement' includes land leased to the organisation and/or land managed by agreement. For the RSPB, this figure also includes land where sole sporting rights are held.

[ii] This figure includes NTS 'built and countryside properties'.

[iii] The additional SWT property in Table 3.2 is not included in Table 3.1 as it is not included in the dataset to ensure it's location is kept confidential due to the sensitivity of the habitat and species concerned.

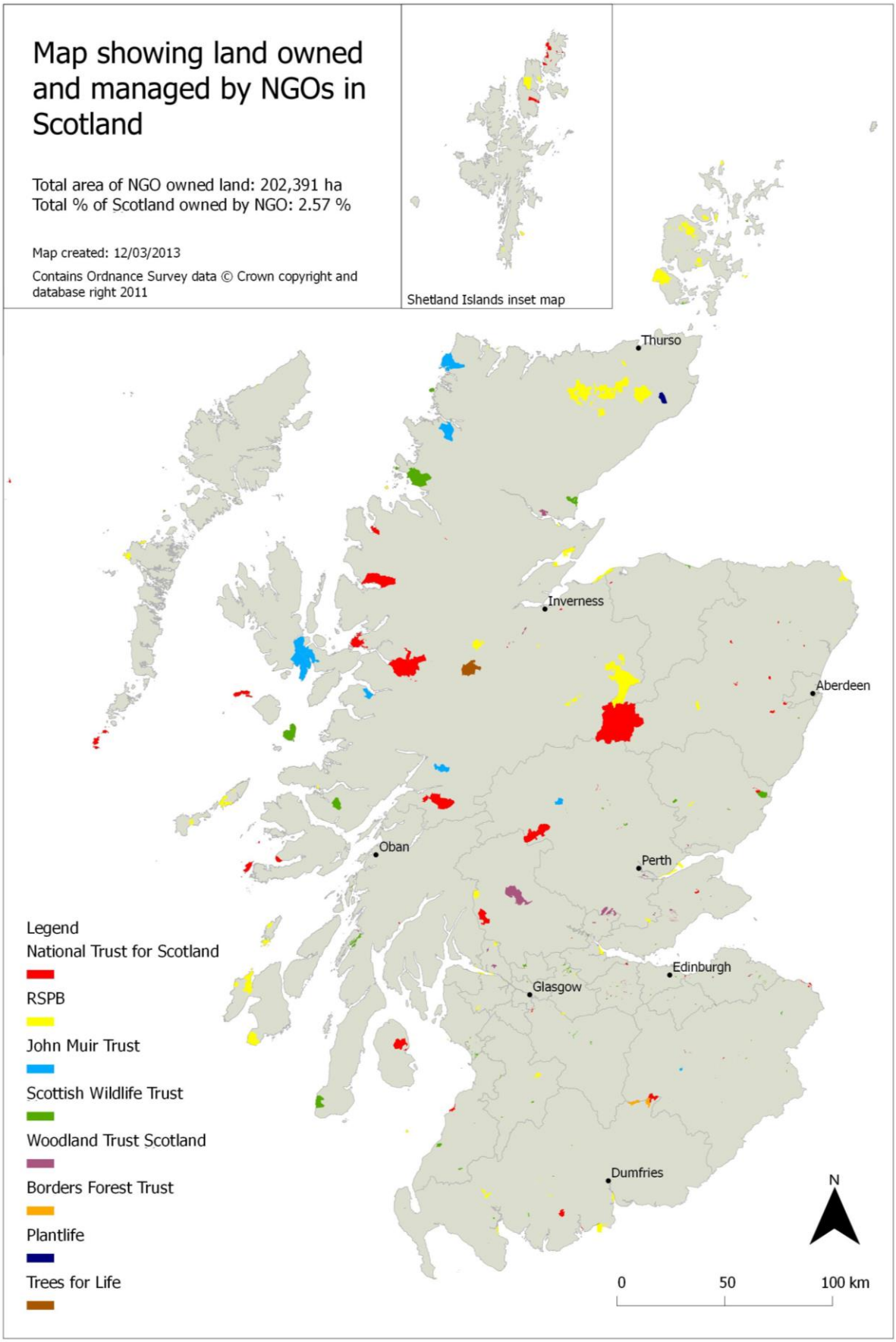
These areas also include sites undertaking large-scale restoration initiatives in areas of existing high biodiversity value, including the native woodland restoration and expansion programmes at Abernethy (RSPB), Mar Lodge (NTS) and Dundreggan (Trees for Life) (among others) and large-scale peatland restoration at Forsinard (RSPB) in the Flow Country. NGO owned sites also include sites of unrivalled cultural significance importance (e.g. the NTS properties of Iona and St Kilda). A number of NGO owned sites also act as exemplar sites for different elements of land management, such as the WTS owned Glen Finglas site (multifunctional forestry management). NGO ownership and management of land also represent a key component of the development of Scotland's urban green networks, with the SWT and WTS in particular owning and managing a number of urban and peri-urban sites (e.g. Livingston (WTS) and Falls of Clyde (SWT)).

A number of differences are evident between Table 3.1 (based on the GIS analysis) and Table 3.2. In particular, the GIS analysis did not differentiate land under management agreements (as opposed to being directly owned). Land 'under agreement' includes where the NGO owns sporting rights, leases the land from the main owner or manages the land under any other form of non-ownership based management agreement. This is relevant for the RSPB and SWT in particular, with the GIS datasets instead accounting for RSPB and SWT Reserves, some of which are managed under agreement or leased. The area of land under such agreements for these organisations (and a very small area for NTS) is shown in Table 3.2. For SWT, the GIS data accounts for all land owned or managed by the organisation. For the RSPB, the GIS dataset excludes certain landholdings managed under agreement. This discrepancy accounts for the main difference evident between the totals in Tables 3.1 and 3.2, with 4,321ha of land shown in Table 3.2 not accounted for in the GIS data supplied by the RSPB. The other main discrepancy evident between the two tables is in relation to the totals (total properties and total area) for NTS land. This is due to the GIS data not including a number of smaller properties (built properties) accounted for in the tabulated data. Further minor discrepancies are also evident between the two tables due to one property being missing in the GIS data for both SWT and WTS (due to the tabulated data being more up to date) and a number of minor inaccuracies in the actual digitisation of the data (overlapping property boundaries).

It should be noted that the subsequent GIS analysis presented here is based on the main NGO land dataset as shown in Table 3.1. As well as including land owned by NGOS, all subsequent analysis therefore also includes all land managed under agreement by SWT and a significant component of the land managed under agreement by the RSPB.

*John Muir Trust staff member carrying out vegetation monitoring near Ben Nevis*

**Figure 3.1** Distribution of land owned and/or managed by environmental NGOs



### 3.1.1 Land acquisition policies of environmental NGOs

To consider the context and direction of travel for NGO landownership in Scotland, it is pertinent at this stage to briefly examine existing policies on acquisition of land by the five main landowning environmental NGOs in Scotland. To assist with directing acquisition (or disposal) of new sites, most environmental NGOs have either formal or informal policies on acquisition. In most cases, environmental NGOs express a willingness to acquire further land, whether through direct purchase, gifts, legacies or other means. However, further acquisition was not generally a major priority and there is a general trend of less acquisitions in recent years, due to the considerable and increasing expense associated with buying and managing land. NGOs have acquired and continue to acquire land for a diverse range of reasons, including in response to perceived threats to certain areas relating to the natural heritage and or landscape values, a desire to restore specific habitats, act as demonstration sites for conservation management, work with wider partners and local communities, extend their existing sites and combat habitat fragmentation through protecting and restoring whole landscapes and ecosystems. Some of the key points relating to the acquisition policies of the five main landowning NGOs include:

**i) Woodland Trust Scotland** is focused primarily on acquiring threatened (as opposed to protected) land. WTS is particularly interested in acquiring ancient woodland sites which have been replanted with exotic conifers and restoring these sites to broadleaf woodland, improving site biodiversity and ensuring the site is protected in the longer term. Sites suitable for woodland creation are a further priority, particularly where they adjoin existing ancient semi-natural woodland or where new woodland is the only way of providing a significant centre of population with an accessible wood. WTS considers it's general aims of expanding and protecting woodlands and increasing people's enjoyment of woodland's in relation to all acquisitions. WTS receives a considerable number of gifts of woodland areas, which are now difficult to accept without any linked funding to support management costs.

**ii) The Scottish Wildlife Trust** continues to have an interest in acquiring land through purchase, gifts or other means. The organisation considers that the acquisition of reserves give such areas of land security, continuity of management and a high standard of care and control of land uses in favour of wildlife whilst providing it with hands-on experience of management which establishes the Trust's credibility in practical wildlife conservation. This knowledge can then be used to encourage others to adopt similar practices, either directly or indirectly by influencing government policy.

**iii) The John Muir Trust** acquires land with the aim of protecting it from potential threats, demonstrating wild land management and working with local people and visitors to achieve protection, conservation and enhancement. The trust is also involved as a partner on a number of community and privately owned sites and seeks to support others (communities, public or private landowners or other conservation charities) with an interest in the effective protection and conservation management of wild land (see Section 5.3). The Trust also aims to cooperate with other owners of wild land, to influence others by demonstrating best practice in the care of wild land, and to collaborate in conservation projects with other organisations (e.g. the Ciogach and Assynt Living Landscapes project, see Section 5.5). The trust is particularly concerned with safeguarding whole landscapes, areas sufficiently large (e.g. hill ranges or watersheds) to allow for the restoration of natural processes and the provision of the spiritual qualities of wild land (freedom, tranquility and solitude).
JMT would be interested in protecting bits that don't have economic value but are at risk of development of wind farms.

**iv) The Royal Society for the Protection of Birds** acquires land (alone or in partnership with others in certain cases) of high nature conservation value, or with the potential for restoration to high conservation value, and land

perceived as being under threat from adverse planning or development. The organisation has an annual UK budget of approximately £1.5-2 million for reserves acquisition. In the current financial climate this fund is under pressure against competing resources. The RSPB views it's reserve network as assisting the Government to deliver against international and national commitments for nature conservation (e.g. designated site requirements). The main priority for acquisitions relates to extending existing sites rather than the acquisition of new sites, which recognises that larger sites have more capacity for ecological robustness and a number of species require large areas for their life-cycle. In certain cases expanding existing sites may facilitate improvements to hydrological control for wetland management, or access to carry out management works. The RSPB has identified suitable areas for acquisition, should they come on the market; however, the organization may also acquire new sites that come on the market unexpectedly and where a strong conservation case for acquisition has been identified, and where other mechanisms may be inadequate to protect the site. In this sense, acquisition can be considered as a last resort.

**v) The National Trust for Scotland** acquires sites it has assessed as being of international or national significance (for cultural and/or natural heritage), or of particular local significance, or which represent key examples of heritage assets, or sites which through their acquisition the trust can protect or enhance the significance of an existing property. In all cases the trust must demonstrate how acquisition will increase, or prevent the loss of, benefit to the nation in terms of a) conservation and b) access and enjoyment. The Trust will acquire a property only if an impartial analysis shows that it is the most appropriate owner. All acquisitions must be fully resourced for purchase and subsequent management and maintenance – which requires an assessment of feasibility prior to the trust committing to managing the site. Threat, particularly direct and immediate threat to a property (heritage values), may be a significant but not the primary consideration in determining whether the Trust should proceed with acquisition. The trust considers the role of the local community and the impact of Trust ownership will be considered in the acquisition appraisal process. The Trust recognises that all NTS owned sites are regarded as local by the community who reside in and around them. Where new acquisitions are being considered, the trust examines the needs of the local community and the responsibilities ownership would bestow on the Trust.

### 3.2 Natural heritage value of NGO land as indicated by level of designation

Table 3.3 presents the results of the GIS analysis to determine the total area of NGO owned and managed land occurring within each of eight different designation types (see Section 2.1), the percentage of the total area of NGO owned and managed land occurring within each designation type and the percentage of the total area of each designation in Scotland which is accounted for by NGO owned and managed land. This table demonstrates that *nearly 50% of NGO owned and managed land is designated as SSSI or SPA (or both), with over 30% designated as SAC and over 19% designated as NNR*. Importantly, when the percentage of the total area designated as NNR is examined, a relatively high proportion (31.5%) is shown to occur on NGO owned land. *This demonstrates that NGO ownership and management of land is over twelve times more prevalent in NNR designated areas than for Scotland as a whole*. Increased prevalence of NGO ownership is also apparent, to a lesser extent, in the case of all other designations, particularly in the case of Local Nature Reserves (12.06% of total designated area) and SSSIs (9.47%).

**Table 3.3** Extent of land owned and managed by environmental NGOs under different natural heritage designations in Scotland (excluding offshore SACs)

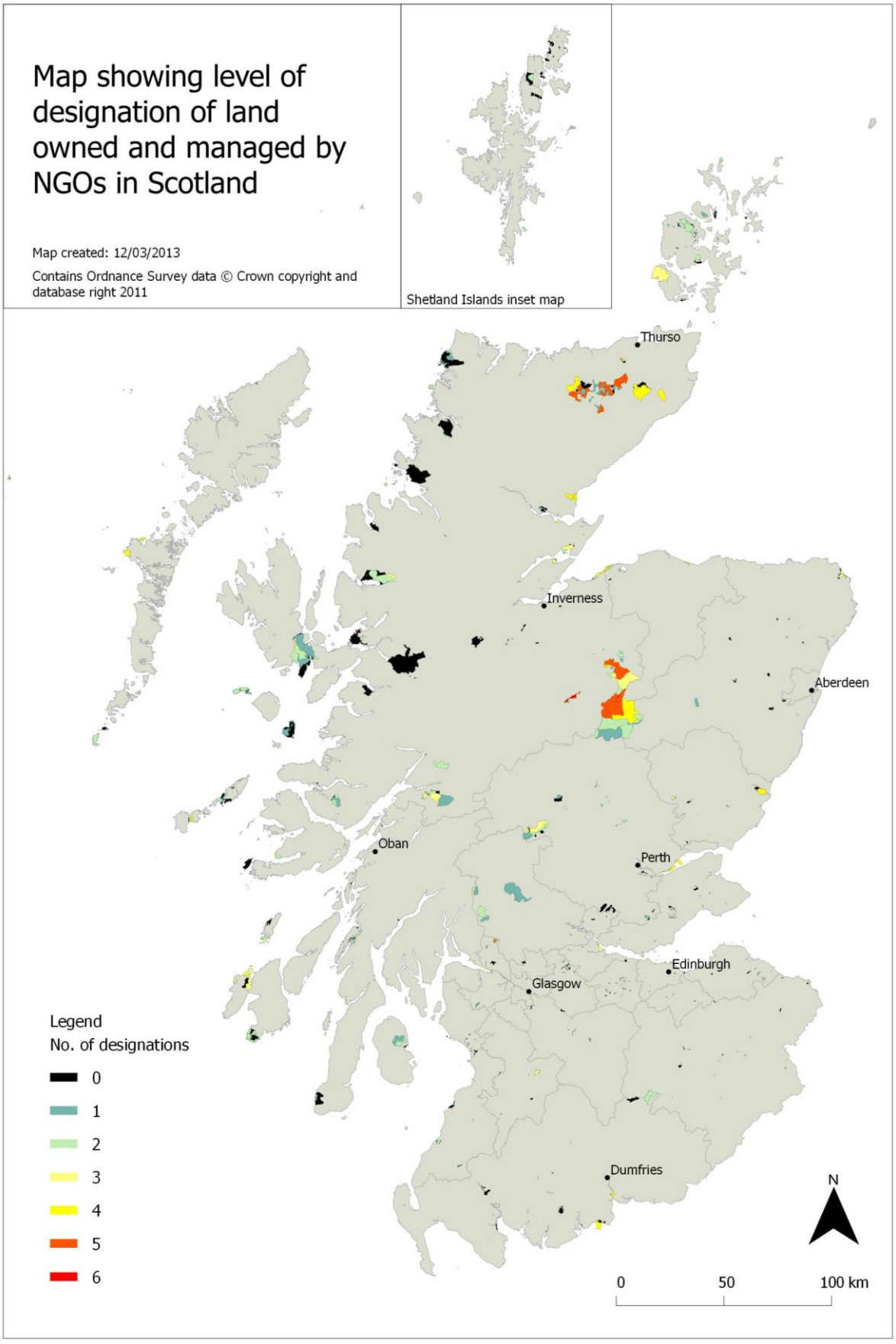
| Designation type | Designation area (ha) | Total area of NGO owned and managed land in each designation type (ha) | % of total NGO owned and managed land in each designation type | % of total designation area in NGO owned and managed land |
|---|---|---|---|---|
| **SSSI** | 1,014,482.07 | 96,042.47 | 47.45% | 9.47% |
| **SPA** | 1,251,948.03 | 95,696.09 | 47.28% | 7.64% |
| **SAC** | 4,197,951.15 | 65,357.89 | 32.29% | 1.56% |
| **LNR** | 10,216.61 | 1,232.74 | 0.61% | 12.07% |
| **NNR** | 123,449.97 | 38,960.12 | 19.25% | 31.56% |
| **NP** | 639,149.57 | 52,494.26 | 25.94% | 8.21% |
| **RAMSAR** | 326,788.46 | 28,328.03 | 14.00% | 8.67% |
| **WHS** | 868.98 | 868.98 | 0.43% | 100.00% |

These results indicate that *NGO ownership and management of land is more prevalent on sites designated for their natural heritage values*. Table 3.4 and Figure 3.2 further illustrate the particularly high natural heritage values of significant areas of land under NGO ownership and management. Specifically, *over 50% of NGO owned and managed land has at least two designations on it, with over 30% having 3 or more designations and over 20% having 4 or more.* Particularly high levels of overlapping designations are apparent in the Flow Country and in the Cairngorms (Figure 3.2). In contrast, 40% of land owned and managed by NGOs is not designated under any form of natural heritage designation. It should be noted however that this analysis does not include sites designated for their historic significance (ancient monuments, listed buildings, historic gardens etc. A number of other statutory and non-statutory designations/sites recognised as important for natural heritage or recreational/cultural values have also been excluded from this analysis (e.g. Regional Parks, Forest Parks, Biosphere Reserves, Geoparks, Geological Conservation Review sites etc.). Non-designated areas also include a wide range of habitats and species identified as being important within Biodiversity Action Plans.

**Table 3.4** Level of designation of land owned and managed by environmental NGOs in Scotland

| Number of designations | Area of NGO owned and managed land (ha) | % of total NGO owned and managed land |
|---|---|---|
| 0 | 81,744.92 | 40.39 |
| 1 | 15,881.84 | 7.85 |
| 2 | 41,595.34 | 20.55 |
| 3 | 21,269.99 | 10.51 |
| 4 | 19,643.17 | 9.71 |
| 5 | 21,744.98 | 10.74 |
| 6 | 510.76 | 0.25 |

**Figure 3.2** Level of designation for natural heritage for NGO owned and managed land



### 3.3 Landscape value of NGO owned land as indicated by level of designation (NSA)

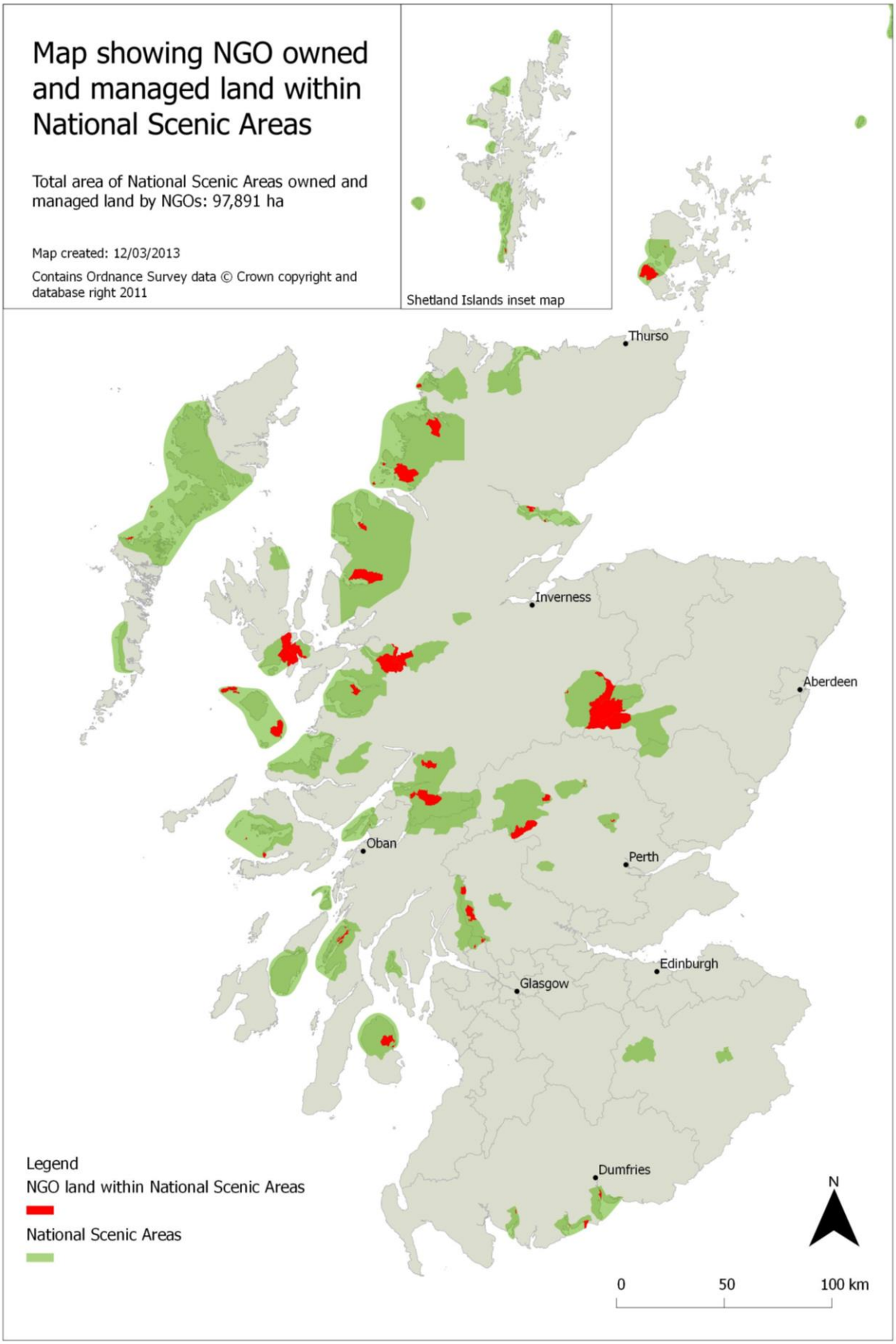
Table 3.5 presents the results of the GIS analysis to determine the percentage of total NGO owned and managed land occurring within areas designated as National Scenic Areas (NSA). These results show that *9.6% of all NSA designated land is under NGO ownership or management, indicating that NGO ownership or management of land is over three times more likely in NSA areas* (than nationally). *In total, over 48% of NGO land is also designated as NSA, which indicates the very high scenic value of nearly half of all NGO owned and managed land*. Figure 3.3 also demonstrates the wide spread of NGO owned and managed properties across Scottish NSAs, with NGO land present in the majority of NSAs.

**Table 3.5** Extent of land owned and managed by environmental NGOs in Scotland designated as National Scenic Area (total area 202,391ha)

| Total NSA area (ha) | Total area of NSA owned and managed by NGOs | % of total NSA area owned and managed by NGOs | % of total area of NGO land within NSA |
|---|---|---|---|
| 1,019,610.00 | 97,891.77 | 9.60 | 48.37 |

*The Great Trossachs Forest*

**Figure 3.3** Extent of land owned and managed by NGOs in Scotland designated as National Scenic Area (NSA)



# 4. Socioeconomic Benefits of NGO Ownership and Management

This section considers a range of socioeconomic benefits in more detail. Specifically, consideration is given to: employment on NGO sites; facilitating public access and interpretation on the sites; the number of visits made to the sites; volunteering on the sites; and direct spend on land management.

## 4.1 Employment impacts

Table 4.1 shows the number of full-time equivalents (FTEs) related to the management of NGO sites. On average, site-related employment accounts for between 20% and 30% of all staff employed by the organisation. Many sites employ a range of full-time, permanent members of staff, while others employ site managers who have responsibility for several sites. For example, the NTS Mar Lodge estate in Braemar employs 21 permanent staff (including a property manager and five heads of department that are responsible for rangering, ecology, stalking, estate management and hospitality management) and additional seasonal staff to support the ranger service, stalking operations and ecological monitoring activities. Similarly, the RSPB Abernethy estate directly employs over 20 people (12.2 FTEs) and supports a range of local employment (see Case Study 1). WTS employs seven site managers who are responsible for the management of all WTS properties.

**Table 4.1** Number of full-time equivalents (FTEs) employed through management of NGO sites

| NGO | Number of sites | FTEs directly related to the sites | Total FTEs (in the organisation) | % FTEs related to land management |
|---|---|---|---|---|
| JMT | 24 | 7.08 | 35.3 | *20.1%* |
| NTS | 128[i] | 152[ii] | 463 | *32.8%* |
| RSPB | 74 | 113.2 | 368 | *30.2%* |
| SWT | 121 | 26 | 112 | *23.0%* |
| WTS | 57 | 7 | 24 | *29.2%* |
| **Totals** | **404** | **305.28** | **1,002.3** | |

[i] This figure includes NTS 'built and countryside properties'.

[ii] Number of FTEs shown for NTS is an estimate (exact data not available)

NGO land management also has indirect effects on businesses in the local area surrounding the sites (see Case Studies 1 and 2). For example, in the area surrounding Dundreggan Estate near Invermoriston, Trees for Life staff and their conservation volunteers spend an estimated £49,600 annually on local services and accommodation. As many NGO landholdings occur in rural or remote rural areas employment impacts can be of considerable significance locally, as they can constitute a significant component of local employment in these areas.

**Case Study 1 Abernethy Forest Reserve (RSPB)**

The RSPB's Abernethy Forest Reserve is located 30 miles south-east of Inverness and covers 13,714 ha of pine woodland, heather moorland and montane habitats, including the Loch Garten osprey nest site. The RSPB manages the reserve to conserve its montane and native pinewood ecosystems to provide optimum conditions for forest regeneration and recovery.

Direct on-site employment accounts for 12.2 FTEs (as opposed to 1-2 staff when under private ownership) and direct annual spend on the site totals £583,000. The site employs wardens/stalkers, scientific researchers, shop staff, information staff, gate attendants, forestry workers and hospitality staff. Other sources of employment are jobs for contractors engaged on the site; jobs supported by the local spending of staff and contractors and buying supplies; and jobs with the local timber and venison dealers supported by the site's production. The woodland management is shared between reserve staff, locals employed on winter contracts, and larger forestry companies, provided they can guarantee to use local contractors. In order to diversify income sources in the local economy, the reserve produces, processes and markets goods, including forestry products and venison. Culled deer are sold to a local game dealer. Contact is also maintained with locally-based businesses for supplies and maintenance, building maintenance and fuel supplies, whilst additional contractors carry out haulage and track maintenance. A modest amount of timber is sold to both local and more distant saw mills and pulp mills.

The reserve, and particularly the Osprey Centre at Loch Garten, attracts large numbers of visitors (around 30,000 visitors visit a year) who spend money in the local economy. Based on an average visitor spend in the park of £26.48 (Cairngorms National Park visitor survey, see Case Study 5), this equates to a total spend of over £790,000 in the local economy (*not including overnight accommodation spend*). Close to Loch Garten, a series of way-marked walks are well-used by visitors and locals alike, and an additional 100 km of access tracks are maintaned. The reserve is also used regularly as a venue for seminars and training courses with delegates using local hotel or bed and breakfast facilities. Natural history experts, both professional and amateur, also visit the reserve each year to add to the organisation's knowledge of the site, and all stay locally. Visitor expenditure in the area is estimated to support 69 FTE jobs locally, with additional jobs supported by expenditures by the reserve on contractors, goods and services, and spending by reserve staff in the local economy.


***The popular Loch Garten Osprey Centre***

Reserve staff are involved in visitor management and education, survey and monitoring, administration and community liaison. In addition, 158 volunteers worked in a variety of roles on the reserve in 2011/12, carrying out a total of 7,092 hours' work both in practical conservation and visitor centre interpretation/osprey wardening.

### 4.2 Facilitating public access and interpretation

All of the NGOs provide public access and interpretive ranger services for visitors to land that they own and manage. While dedicated rangers are not present on all sites, each organisation employs staff and volunteers to manage and improve public access and interpret the natural heritage. The development of interpretive facilities by NGOs is particularly significant, with sites such as the NTS Glencoe Visitor Centre and the RSPB's Loch Garten Osprey Centre attracting some 120-150,000 and 30-40,000 annual visitors respectively[i]. A number of sites also incorporate wildlife watching infrastructure, such as the capercaillie watching hides at Abernethy (RSPB) and osprey watching hides at Loch of the Lowes (SWT), enhancing opportunities for wildlife experiences. Case studies 2 (Livingston Woods-WTS) and 3 (Falls of Clyde-SWT) illustrate in greater depth the extent of activities relating to

access and interpretation (path and boardwalk developments, visitor centres, litter control, guided walks etc.) and the high visitor numbers on certain peri-urban sites.

**Case Study 2 Livingston woods (WTS)**

Woodland Trust Scotland (WTS) owns and manages 13 woods near Livingston in West Lothian. Covering a total of 161.6 hectares, the woods are a significant feature of the landscape and an important part of the infrastructure of Livingston, providing separation, screening, and an attractive backdrop to the various residential developments. The belts also function as windbreaks and provide some barrier to noise. Due to the woods' location within the central belt and close proximity to large populations, the intention is to use the woods to improve and raise awareness, through education, of the biodiversity, recreation and health benefits that woodlands provide. It is hoped that this will encourage greater understanding of the importance of the woods and the natural heritage along with the benefits this provides, enabling communities to enjoy their natural heritage and ensure its long-term protection.

Long-term plans of WTS are to improve the biodiversity value of the woodlands and ground flora by continuing to manipulate the canopy and species composition by converting conifer plantations to native broadleaf woodland and through the removal of non-native species. Rhododendron control is carried out to improve soil conditions for native flora and native tree regeneration. A more diverse woodland habitat has been created by selective tree felling to encourage more light into the woodland floor, which has also helped with an improved feeling of safety for walkers and visitors. WTS directly spends approximately £13,000 per year on the woods through an estate maintenance contract. Tree safety works usually total approximately £7,000 per annum, although these costs were higher in 2012 (£20,000).

Work is taking place to upgrade paths within the woods to link local places via woodland. New paths have been created and improvements made to existing paths and tracks including drainage, path surfacing and construction of board walks. The woods form a key part of the local access network and provide woodland walks within an urban setting, as well as alternative scenic routes and links to longer distance paths. The Trust has developed audio tours of Eliburn Woods, Deans and North Woods which can be downloaded directly from the Woodland Trust website and WTS recognises the opportunity to further promote and use the woodlands as an educational resource, particularly in Bellsquarry woods which receives 15,000 annual visits (according to a survey carried out in 2000-2001[ii]). Bellsquarry Wood provides excellent public access for a range of users with approximately 2.2km of managed paths throughout with access from nine entrances. The site also provides excellent public access for both short and longer routes when viewed as part of the local network as it ties into the Livingston Greenways. Unfortunately, litter is an ongoing problem and, although cleared regularly, detracts from the amenity of the woods as well as creating a hazard to wildlife.

To tackle this, there has been a high level of community involvement in the management of Bellsquarry woods. About six volunteers work regularly with WTS staff to manage the woods and management is also undertaken in partnership with The Bellsquarry Woodland Workgroup, which raises funds for projects, undertakes regular practical workdays and helps with the day-to-day care of the woods. Bellsquarry pond was also recently restored in partnership with the local community. Funding for this project was sourced by the community and WTS organised the work.

The Branching Out West Lothian[iii] project (BOWL) was launched by WTS in 2007 to encourage local people to enjoy woodland in their local area. The Woodland Learning Programme was a central part of the BOWL project, designed to invest in the future by supporting, informing and working with teachers to remove the barriers to learning outdoors. The project provided local teachers with skills to use the outdoors as a classroom for learning lots of different subjects and challenge the perception that the outdoor classroom is only for natural history or play. The project produced an Outdoor Learning Pack aimed at primary school teachers and 126 teachers were trained. 7000 trees were planted by 1007 local school children during the project and 46 schools participated.

***Children taking part in the Branching Out West Lothian (BOWL) project***

**Case Study 3 The Falls of Clyde (SWT)**

SWT acquired the Falls of Clyde reserve in 1968 as part of a strategy to acquire and manage woodlands within the Clyde Valley for nature conservation. The 71 hectare reserve is situated in South Lanarkshire (30 miles south east of Glasgow) and occupies both sides of the River Clyde, very close to the historic village of the New Lanark World Heritage Site. SWT owns 30.13ha of the reserve outright, with the remaining land managed via a lease and management agreement with the neighbouring Corehouse Estate and Scottish Power respectively. The reserve is historically significant, with a number of interesting assets including: the ancient Corra Castle, Bonnington Pavilion (which overlooks the Falls of Clyde), and the iron bridge at Bonnington Linn.

A large part of the reserve is designated as part of the Clyde Valley Woodlands Composite National Nature Reserve (SWT works in partnership with SNH and South Lanarkshire Council to promote and manage the NNR). Other parts of the reserve have the following designations: SSSI, World Heritage Site. The reserve features the waterfalls (Corra Linn), and comprises primary woodland, adjacent to the Clyde, which has a rich ground flora. The reserve also comprises extensive conifer plantations, most of which were planted in the late 1950s. Across the reserve area, these plantation conifers are being harvested and replaced, principally with broadleaved trees. Otter, badger and roe deer are present, and peregrine falcons nest in the Clyde Gorge. 'Operation Peregrine' is run annually by SWT to provide 24 hour protection for the birds (see photo) while they are breeding and to provide members of the public with live CCTV footage of the birds from the recently refurbished visitor centre, which is located within the old Dyeworks in New Lanark. The visitor centre also provides interactive displays about SWT and the wildlife and vegetation on the reserve, houses a small shop and has observation windows that overlook the River Clyde.

***SWT Peregrine Ranger at the Peregrine Watch station***

Five-year management plans have been in place for the reserve since 1996 and the following long-term objectives apply (the latest plan is for ten years – 2009-2019): (i) to restore and maintain a predominantly native broadleaved woodland; (ii) to maintain or enhance other habitats or populations of other notable species; (iii) to encourage recreational and educational access to the reserve; (iv) to manage the significant historical and archaeological features on the reserve; and (v) to comply with all obligations and maintain high standards of reserve management. The latest management plan was made available for community consultation in 2010. Management activities include: path/boardwalk maintenance and improvement; woodland structure management; litter management; control of invasive and non-native species; controlled meadow grazing; on-site interpretation; a ranger service, including guided walks and Operation Peregrine; wildlife surveys and monitoring; and developing plant nursery facilities.

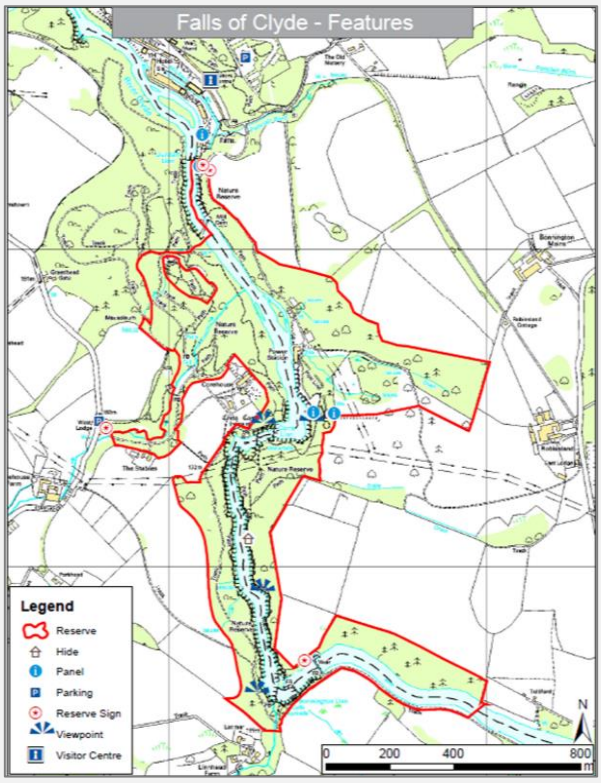
The reserve is a major visitor attraction. Over 70,000 people visit the reserve annually (20,000 visited the visitor centre in 2008). The vast majority of visits are informal, with other 40% being repeat visits. Visitors use the reserve for sight-seeing, dog walking, picnicking, photography, painting, natural history pursuit and fishing. Orienteering and horse events also occur occasionally, and the reserve is used by mountain bikers and for wild camping. There are four way-marked trails running through and around the reserve (see map). Access to the reserve is possible from a number of points, the most widely used of which is from the village of New Lanark, where car parking is available.

The reserve is managed on-site by the Reserves Manager for the South of Scotland and the Falls of Clyde ranger (both full-time, permanent posts). A Seasonal Ranger (March-September) and a Species Protection Officer (March-July) make up the staff complement. Staff costs are estimated at £45-50,000 per year and direct expenditure on the management of the reserve (basic operations budget) is approximately £2,500-3,000 per year. Funding from Scottish Power (£5,000 per annum) is used to support the ranger service. The reserve also benefits from significant volunteer input for both practical management and to help staff Operation Peregrine. Between eight and ten weekly volunteers carry out conservation tasks on the reserve (working 1,368 hours in 2012) and about 40 volunteers provided 1,251 hours of work on 'Operation Peregrine' last year.

Rangers are regularly present on the reserve to provide interpretation and encourage responsible behaviour. The reserve

rangers also run a very successful and comprehensive educational programme for visiting schools and groups. The Visitor Centre provides facilities for school groups and staff provide less formal walks, talks and activities for other groups and the general public, including Badger Watches, Peregrine Watches and Clydeside Saunters. News from the rangers is shared on the SWT blog site[iv] and more general information about the site is available from the SWT website[v].

The SWT Lanark Area Member Centre organises a series of talks in Lanark and SWT staff are often invited to talk at these events. SWT staff work in partnership with staff from the neighbouring New Lanark World Heritage Site to organise shared events and marketing opportunities: SWT recently assisted with a 'stargazing event' . Joint educational activities such as minibeast hunts and honey bee days in the New Lanark Roof Garden have also proved popular, and SWT staff occasionally lead activities at Ecoschools days in the area. Links with the local volunteer agency are good and several clients with behavioural or emotional difficulties have found placements on the reserve in the past. The reserve also has a tree nursery which provides an opportunity for communicating recycling, composting and wildlife gardening to a much wider audience. They will also be able to provide native trees and shrubs for enrichment planting on the reserve and for wider countryside projects, for example for community groups and schools.




***Map of the reserve***

Staff at the reserve also work in partnership with organisations involved in the Clyde and Avon Valleys Landscape Partnership (CAVLP), funded by the Heritage Lottery Fund. Partners include: South Lanarkshire Council, North Lanarkshire Council, New Lanark World Heritage Site and the RSPB. It is expected that this partnership will lead to increased community involvement in site management. In particular, the partnership will create more training and volunteering opportunities on the reserve, particularly in practical conservation skills, woodland management, restoration of historic features and the replacement of the well-used boardwalk (£50,000 has recently been secured for this project).

### 4.3 Visitors numbers on land owned and managed by NGOs

Scenery and wildlife represent important tourist attractions in a Scottish context[vi], with nature-based tourism currently worth £1.4 billion annually to the Scottish economy, supporting 39,000 full-time jobs[vii]. Environmental NGOs therefore have an important role to play in maintaining and enhancing, this resource. Data gathered from the NGOs (Table 4.2) shows that *NGO owned and managed land attracted over 3 million visits in 2011/2012*. It should be noted however that these figures include a combination of estimates provided by NGOs and data from people counters on key sites. Overall the figures in Table 4.2 can be considered as underestimates, with people counters only accounting for people passing through key access points and estimates generally conservative. Based on estimates for visitor day spend in previous studies the approximate economic impact of these visits can be calculated as being between £22 and 89.6 million. This is based on a lower range of visitor spend of £6.60 per day, to an upper range of 26.48 per day (calculations based on the CNPA Visitor Study – see footnote 3 and a day visit figures from Visit Scotland and Forestry Commission Scotland[1]).

[1] See: http://www.forestry.gov.uk/pdf/topic_paper_5.pdf/$file/topic_paper_5.pdf

**Table 4.2** Number of visits to sites owned by environmental NGOs

| NGO | Number of sites | Total estimated annual visits (all sites) |
|---|---|---|
| JMT | 24 | 236,450 |
| NTS | 128[i] | 1,390,260[ii] |
| RSPB | 74 | 494,794 |
| SWT | 121 | 265,000 |
| WTS | 57 | 1,000,000 |
| **Totals** | **389** | **3,386,504** |

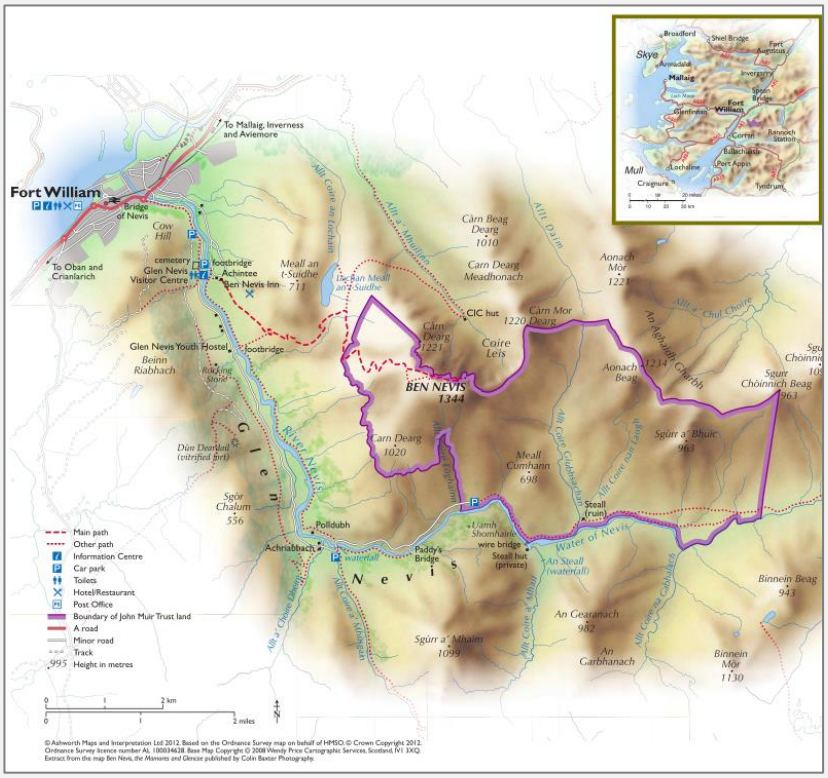
[i] This figure includes NTS 'built and countryside properties'.

[ii] This figure is for all NTS countryside properties.

NGOs also maintain and improve access, particularly by improving and/or constructing footpath networks. The JMT, for example, raised over £800,000 to fund major realignment and restoration work on the path to the summit of Schiehallion in Perthshire between 1999 and 2003. In 2011, JMT volunteers carried out maintenance on 20km of paths on their sites[viii]. Scottish Wildlife Trust staff and volunteers also construct or maintain over 100km of footpath annually. The NTS, which maintains 82 high level routes on seven mountain properties, established the Mountain Heritage Programme in 2003, resulting in £1.9 million being spent on upland footpath repairs between 2003 and 2009[ix]. Their more recent 'Mountains for People' programme will run for four years and cost £1.25 million[x]. Improving access and wider awareness of key sites influences visitor numbers and encourages more people to access the sites. Path maintenance is particularly important on sites with high visitor numbers, with path works on the JMT's Ben Nevis site (see Case Study 4) and the NTS's Mar Lodge (Case Study 5) sites for example, a major and continual aspect of site management.

**Case study 4 Britain's highest mountain and the John Muir Trust**

The 1700ha Ben Nevis estate was purchased by JMT in 2000 from Duncan Fairfax-Lucy, following a request that JMT take on guardianship of the area. The landholding includes the summit and southern slopes of Ben Nevis, the highest mountain in the UK, together with the peaks of Càrn Mòr Dearg, Aonach Beag and Sgurr Choinnich Beag. JMT has developed a site management plan[xi], with the core aim of safeguarding and enhancing the area's wild character. This includes conserving and enhancing native wildlife and vegetation and the integrity of landscapes and habitats, encouraging woodland regeneration, conserving cultural features and facilitating access through path restoration and management. JMT works as a member of the Nevis Landscape Partnership to achieve these aims across the wider area.




***Map of Ben Nevis estate***

The Ben Nevis estate lies within the Ben Nevis and Glencoe NSA, the Ben Nevis SAC (designated for including 17 habitats of international importance), and the Ben Nevis SSSI (designated based on the area's distinctive geology and topography and associated wide range of upland semi-natural and natural habitats). Natural heritage features of particular note include: four 'European Priority Interest Habitats' and 13 habitats of 'European interest'; native woodland fragments; 238 species of vascular plants (12 of national importance); 18 nationally rare species of bryophytes (liverworts, mosses and lichens), including 15 Red Data Book species; mammals, including mountain hare and red deer, with wildcat, red squirrel and pine marten likely to occur on lower slopes bordering the site; and protected breeding upland bird species, including snow bunting, dotterel, merlin, golden eagle and hen harrier.

There is currently no active commercial forestry or agriculture on the site. JMT is engaged in active habitat monitoring of native woodland, upland heath, blanket bog, tall herb communities, flushes, and for a number of species e.g. mountain ringlet butterfly, water vole, bats and juniper as well as regular habitat impact assessment and deer management – in conjunction with the Mid-West Association Deer Management Group. Current work is focused on deer population monitoring and subsequent annual adjustment of deer cull targets. The main aim is the reduction of deer numbers to a more ecologically sustainable level to facilitate long-term regeneration of native woodland and other habitats. JMT is also currently working towards a joint moorland management plan with neighbouring landowners to ensure a sustainable approach to grazing management.

JMT activities on-site resulted in a direct spend in 2012 of £109,260, with JMT directly funding the equivalent of 1.8 FTEs. In 2006 a dedicated Nevis Conservation Officer (funded by JMT, the Nevis Partnership and external funding) was appointed to carry out surveys and monitoring, develop educational/interpretative materials and events, raise awareness, carry out visitor management and manage footpath maintenance. There is now one full time and one part-time Nevis Conservation Officer responsible for monitoring and wildlife management, as well as continuing with the other aspects, such as dealing with large-scale events, deer management and routine path maintenance. JMT also coordinates between three and six volunteer work parties a year (not including work parties for habitat monitoring) – equivalent to 30-95 volunteer-person days annually. The Nevis Landscape Partnership also employs a further 2 FTEs currently supported by Heritage Lottery funding. Some 12,000 people live in Fort William and the surrounding area, with significant potential for community engagement with the site at a range of levels. JMT also coordinates between three and six volunteer work parties a year (not including work parties for habitat monitoring) – equivalent to 30-95 volunteer-person days annually. The Nevis Landscape Partnership also employs a further 2 FTEs currently supported by Heritage Lottery funding. Some 12,000 people live in Fort William and the surrounding area, with significant potential for community engagement with the site at a range of levels.

The surrounding locality depends heavily on Ben Nevis for much of its economic viability, with the mountain representing one of Scotland's main tourist attractions, with between 300,000 and 450,000 people visiting the wider Ben Nevis area annually[xii]. Some 160,000 of these visit the Ben Nevis estate, with visitor numbers peaking in July-September[xiii]. Around 100,000 people attempt to reach the summit of Ben Nevis every year, with numbers likely to increase in the future, with at least a further 40,000 visiting Steall Gorge annually. The mountain's northern flanks contain exceptional summer and winter mountaineering opportunities and are widely viewed as the home of ice climbing. These cliffs lie outside of the JMT's landholding, although routes generally finish on the summit plateau. The opportunities for such high quality recreational activities have been key to the development of the annual Fort William Mountain Festival and the marketing of the area as the Outdoor Capital of the UK. JMT staff also liaise and plan events with Glen Nevis Visitor Centre, including running a stall at the Fort William Film Festival and a children's poetry competition with local schools.

Collectively, these visitors contribute directly and indirectly to employment and income across a range of areas, including mountain guides (locally and from further afield), the Highland Council Ranger Service and Glen Nevis Visitor Centre staff (all employed locally), local tourism and accommodation providers, bars, restaurants and outdoor equipment shops.

***JMT volunteers taking part in the Banana Man initiative to educate walkers on the impacts of banana skins on the summit of Ben Nevis***

The vast majority (95%) of visitors to the Ben Nevis estate remain on the main access track from Glen Nevis known as the 'Pony Track' or Tourist Track'. The high visitor numbers and concentration of impacts in certain areas results in continual erosion and littering, which is exacerbated by popular events such as the Ben Nevis Race and the Three Peaks Challenge. In response, JMT and the Nevis Partnership have engaged in a major ongoing program of maintenance of the main path and the wider path network. This has included a number of specific projects, including the Path Maintenance Support Project, the Ben Nevis Mountain Path Heritage Project and the development of Footpath Skills Training Courses. Recently, JMT also completed a path restoration project in Steall Gorge using local materials and sympathetic design to minimize impacts on the wildness of the area. Interpretation boards have also recently been installed at the start of the Steall Gorge and Ben Nevis tracks in partnership with Highland Council, the Nevis Partnership and Geopark.

In keeping with their aim to enhance wildness, JMT have also developed a position statement[xiv] on the management of the summit plateau, which advocates the conservation of structures of cultural significance (e.g. the ruined observatory) and the removal of poorly sited manmade structures, including cairns and memorials. Volunteer working groups, coordinated by JMT and Friends of Nevis, have removed over 100 poorly sited cairns from the summit, and carried out regular litter clean ups. In 2012 JMT also rebuilt the marker posts at No. 4 Gully and Coire Leis (used for navigation) to a more robust standard.

***JMT volunteer team working on path improvements***

The Ben Nevis estate represents a flagship site for the JMT due to the high visitor numbers and iconic status of the UK's highest peak, the importance of ongoing visitor management the opportunity to work directly with the local community and wider stakeholders through the Nevis Partnership. The partnership consists of representatives from The Highland Council, Rio Tinto Alcan (a neighbouring landowner), Forest Enterprise, Fort William Community Council, Glen Nevis Estate/Holidays, Glen Nevis Graziers, Glen Nevis Residents, Lochaber Enterprise, Mountaineering Council of Scotland, Lochaber Mountain Access Group, Scottish Natural Heritage and sportscotland. The partnership prepared a strategy for the wider Nevis area in 2001, updated in 2008[xv]. It aims to provide a framework and action programme to safeguard, manage and enhance the environmental qualities and visitor opportunities in the Nevis area.

### 4.4 Volunteering on NGO owned and managed land

The Scottish Government recognises that volunteering is a key component of strong communities[xvi] and volunteering has a wide range of impacts in relation to public health and well-being and skills development. All of the project NGOs offer a range of volunteering opportunities to their members and to the general public. Specifically, *over 5,000 people volunteered in 2011/2012 on the sites* (see Table 4.3). Volunteers undertook a wide range of activities, including: conservation tasks; visitor centre interpretation; wildlife protection (e.g. Operation Peregrine, as explained in the Falls of Clyde case study); litter picking; footpath maintenance and ecological monitoring. In 2011, 153 volunteers, working in coordinated work parties, contributed 5,600 hours of work across JMT properties, clearing 654 bags of rubbish from beaches and inshore lochs, maintaining paths, tackling invasive plants and carrying out ecological monitoring.

**Table 4.3** Annual volunteer numbers (2011/2012) directly associated with the sites, volunteer hours and equivalent economic contribution[2]

| NGO | Number of sites | Number of volunteers directly associated with sites | Volunteer hours | Economic contribution @ £6.08 and £10.00 per hour |
|---|---|---|---|---|
| JMT | 24 | 150 | 8,850 | 53,808/88,500 |
| NTS | 128[i] | 2,954[ii] | 174,286 | 1,059,658/1,742,860 |
| RSPB | 74 | 496 | 29,264 | 177,925/292,640 |
| SWT | 121 | 400 | 23,600 | 143,488/236,000 |
| WTS | 57 | 150 | 8,850 | 53,808/88,500 |
| BFT | 5 | 70 | 4,130 | 24,946/41,300 |
| TFL | 1 | 427 | 25,193 | 153,173/251,930 |
| **Totals** | **410** | **5,482** | **274,173** | **1,666,806/2,741,730** |

[i] This figure includes 'built and countryside properties'.

[ii] NTS property, conservation and Thistle camp volunteers.

JMT volunteers also carry out interpretive work in 'Wild Land Awareness Teams' on properties and at local events. Volunteers represent a key component of site management activities, particularly on certain sites, with volunteers working over 4000 hours on Mar Lodge Estate alone in the 2012-2013 period (Case Study 5) across a wide range of areas. As shown in Table 4.3, some 5,482 volunteers are active on NGO owned land on an annual basis, with volunteers contributing over 270,000 hours of input annually. In economic terms, based on the minimum hourly wage (£6.08), this equates to over £1.6 million in equivalent staffing costs. Based on a wage of £10.00 per hour, which NGO respondents estimate is closer to the actual cost equivalent based on normal staffing costs, this figure rises to over £2.7 million. Volunteer contribution represents a significant component of the total staffing contribution on all sites and is particularly high in certain cases, with figures for equivalent economic contribution of volunteers (Table 4.3) equating to some 15% of total spend on site management for SWT and actually similar to total site management spend for Trees for Life, who rely heavily on volunteer contributions (see Table 4.4 for comparison).

[2] The volunteer hours figures shown in table 4.3 are based on an average figure of 59 hours of volunteer input per volunteer on an annual basis. This figure has been derived by taking the average of the average volunteer hours (per volunteer annually) figures provided by RSPB (79 hours), NTS (54 hours) and SWT (44 hours). No data was available on average annual volunteer hours for JMT or WTS.

**Case study 5 Mar Lodge estate (NTS)**

The 29,380 hectare Mar Lodge Estate (MLE), five miles west of Braemar in Aberdeenshire, was acquired by the NTS in 1995. The estate was purchased with financial assistance from the Easter Charitable Trust and the National Memorial Fund, which also provided a substantial sum as an endowment to maintain the property in the future. SNH assists in funding the conservation work and delivery of visitor services on the estate through a 25-year management agreement. The estate is managed to conserve its landscape, archaeology, buildings, wildlife and other cultural and natural heritage features; to provide public benefit through both access and conservation; and as a highland sporting estate.

The whole of the estate sits within the boundary of the Cairngorms National Park and occupies nearly 7% of the Park. The estate comprises land designated as SSSI, SAC, SPA, NNR, NSA, Ramsar site and GCR (Geological Conservation Review site). There are also seven areas of the estate that have Scheduled Ancient Monuments, and seven structures that have listed building status. There are 15 Munros within estate boundaries, along with large low-lying areas with attractive woodland and riverside paths. The estate has some of the most remote and scenic wild land in Scotland and it also has some classic features of a Highland landscape: remnants of the ancient Caledonian pine forest, heather moorland and juniper scrub, as well as a large part of the Cairngorm plateau. The range of habitats makes it home to a wide variety of wildlife with several species especially adapted to the extreme mountain conditions.

***The stag ballroom is used for a variety of events***

As one of Scotland's most famous sporting estates, MLE attracts deerstalking clients (200 rifle days are let per year, equating to about 100 guests), parties walking up grouse (on about 25 days with an average 6 guns per day), and salmon anglers on the River Dee where the estate offers one of the longest salmon beats with a 100% catch and release policy. Clay-pigeon shooting and laser clays are growing in popularity as added value to holiday accommodation and MLE staff established a local gun club which is now run by local community members. Mar Lodge itself was converted into five self-catering holiday apartments by NTS in 1998. The apartments vary in size, are available all year round and annual occupancy rates are high (approximately 80%). The Stag Ballroom, which houses the Duke of Fife's collection of nearly 2,500 separate stags' skulls, is increasingly used for private functions, weddings, ceilidhs and other events. Approximately 20 weddings take place on the estate each year and this has indirect economic benefits for local businesses that provide wedding function services and accommodation for guests that do not stay on site (usually 50-60 people per wedding). The 'base camp' offers comfortable accommodation for up to 12 people, also all year round. This accommodation is popular with hill-walking clubs, educational groups and residential work camps/volunteers. The NTS also assisted with the rebuild of Bob Scott's bothy on the estate, which burned down in 2003. Both that bothy and the Hutchison Memorial Hut are maintained under lease agreements with the NTS by the Mountain Bothies Association.

The estate's Visitor Management Plan[xvii] provides an integrated framework for welcoming visitors with open and public access, and for the provision of facilities, information, interpretation and education. Based on an average 2.4 occupants per vehicle, it is estimated that between 85,000 and 105,000 visitors arrive the Linn of Dee car park each year, with numbers peaking in August. The Cairngorm Mountain Recreation Survey (1999) found that 23% of the users of the Cairngorms Mountains gained access from the Linn of Dee. In 2010, the Cairngorms National Park Visitor Survey[3] found that Braemar was the second most visited settlement and that the average spend per person in the Park was £26.48; the visitors to Mar Lodge Estate make a marked contribution to this expenditure. Based on these figures visitors to the Linn of Dee car park spend between 2.25 and £2.78 million in the park, not including accommodation spend for overnight visitors.

---

3 Cairngorms National Park Visitor Survey 2009/2010 summary. Cairngorms National Park Authority (online: http://cairngorms.co.uk/resource/docs/publications/29112011/CNPA.Paper.1773.Visitor%20Survey%20Summary%20Report.pdf)

There is a good network of off-road paths and tracks to enjoy outdoor access across most of the estate. Prior to acquisition by NTS, many of the paths were suffering from significant erosion, initiated by visitor use (loss of surface vegetation), and exacerbated by a combination of weather, high rainfall and severe winter temperatures, topography, altitude and exposure. A condition survey carried out in 1995, led to a programme of repair employing skilled teams of upland path building contractors. Further detailed work in 2002, commissioned by NTS and SNH[xviii], led to a programme of works over a total of 41 identified routes. By 2009, a total of 210 kilometres of path was brought to condition described as 'fit for purpose', made possible by grants from the European Regional Development Fund (ERDF) and SNH, totalling around £500,000. Since then, the estate has concentrated on a maintenance programme, currently subsidised to £22,000 per annum. In the area around Linn of Dee, a network of more specified paths has been constructed, and a free interpretive trail leaflet produced, providing a variety of short walks of between 20 minutes and an hour and a half, on good surfaced paths, suitable for families and the less able, and, in part, for all abilities.

The NTS' overarching aspiration to enhance the social and economic well-being of the local community extends collectively to all of the management and interest of the MLE. Aim 6 of the Estate Management Plan[xix] states the aim "to manage the land in a way that enhances the social, economic and cultural well-being of the local community". The estate is considered to have a pivotal role in engaging with the local community, in providing learning opportunities which enhance the visitor experience, and help to underpin the local economy. Following the 2011 Independent Review of the management of MLE, the process of finalising the five-year Management Plan for MLE (2012 to 2016) included three key stakeholder consultation meetings with representatives of the local community, neighbouring estates and representatives of environmental and conservation NGOs. Taking account of discussions at these meetings, as well as comments received from partner organisations such as SNH, a final consultative draft plan was posted on the NTS website for a six week consultation period. A final version was published in August 2012.

Links with the local community of Braemar are seen as fundamental to the success of the estate. In parallel to the development of the Visitor Management Plan, the community in Braemar took part in its first formal Community Action Planning (CAP) process and staff from MLE are engaged in this process. The MLE Visitor Management Plan is aligned with the CAP process, and a draft action plan, which includes themes on: visitor strategy, attractions and services; community services and transport; youth; and housing, employment and the economy. MLE also support the plan being developed by Braemar Community Ltd to build a footbridge over the River Dee at Braemar. MLE staff work with the Cairngorms National Park Authority to promote responsible use of the countryside, the Cairngorms Outdoor Access Trust, Cairngorms Nature, the Cairngorms Outdoor Access Forum and SNH.

The NTS provides a range of volunteering opportunities on MLE. In 2012-2013, volunteers worked for over 4,000 hours on the estate. Volunteers included: those on NTS residential working holidays (Thistle Camps - 495 hours; Trailblazer Camps – 466 hours); countryside and ecology volunteers on two to three month placements, working with the estate ecologist (962 hours); stalking volunteers, including student groups from Sparshot and Newtonrigg Colleges and individual ten-week student placements (1,996 hours); and rangering volunteers who carry out a wide range of practical estate management tasks (354 hours).

***An NTS Ranger leads a guided walk***

The Ranger Service at Mar Lodge offers activities for school groups, free of charge if the school has an NTS educational membership. The Trust's main education function is to facilitate access to the Trust's resources for educational purposes, promoting conservation to learners of all ages. MLE has an Education (Learning and Interpretation) Strategy that directs the development and delivery of learning and interpretation on the estate[xx]. The strategy ties in with the NTS Education Principles and parts of the Cairngorms National Park Plan (2007) – particularly noting that the NP offers an opportunity to develop learning, understanding and experience for all. There is an aspiration to work more with the Cairngorms Rangers Forum to share ideas for best practice and the co-ordination of resources. A number of non-residential groups also visit the Estate each year, to be accompanied on site visits by staff. Group size varies between 10 and 50, with an average annual total of 500. Roughly one-third is educational groups from formal educational establishments, ranging from local primary schools to universities.

### 4.5 Direct spend on land management

Table 4.4 presents data gathered from landowning NGOs relating to direct spend on sites and wider organisational expenditure. Direct spend related to site management across all seven NGOs for which data was available totalled over £37 million, with total organisational expenditure (including site management costs and all other expenditure) totalling over £63 million. The mean percentage of total expenditure allocated to site management across all organisations is 59.3%. NTS expenditure at site and organisational levels is considerably higher than for all other listed NGOs; this relates to a number of factors, including the higher total number of sites and the expenditure on built property maintenance and management (much less of a factor for all of the other listed NGOs). The average spend per hectare across all sites equates to £181. Excluding NTS and BFT (which also has a comparatively high per hectare expenditure), direct spend per hectare ranges from £33-92.

These figures can be compared with those for traditional land uses, with a Fraser of Allander study (2010[xxi]) estimating that grouse shooting contributed a total (GVA) of £23.3 million to the Scottish economy in 2009 and PACEC (2006[xxii]) estimating the total value of deer stalking to the Scottish economy as being £105 million per year. Furthermore, deer stalking and grouse shooting occur on a much larger area of land than that which is under NGO landownership and management. Wightman (2000[xxiii]) estimates that over 2 million hectares of land is under sporting estate ownership in Scotland). Taking the £23.3 million and £105 million figures combined and a minimum total sporting estate area of 2 million hectares, an approximate average spend (on deer stalking and grouse shooting) per hectare of £64 can be calculated (on grouse moor and deer management). Critically, it should be noted that these values include direct *and* indirect values, while the NGO-related figures shown here are solely for direct expenditure. Even without consideration of indirect values NGO landownership and management therefore appears as competitive relative to sporting estate management. Indirect economic contributions of NGO landownership have not been calculated here; however case Studies 1 and 2 and wider work (e.g. Taylor 2007; Willis *et al*. 2003, Bryden *et al*. 2010 etc.) suggest indirect values are likely to be considerable.

**Table 4.4** Direct spend on the sites

| NGO | Number of sites | Total hectares | Direct spend related to sites 2011/2012 (£)[i] | Total expenditure (across organisation) 2011/2012 (£) | Percentage of expenditure allocated to land management | Direct spend per site (£) | Direct spend per hectare (£) |
|---|---|---|---|---|---|---|---|
| JMT | 24 | 24,461.00 | 821,142 | 1,595,937 | 51.5% | 91,238 | 33.57 |
| NTS | 128[ii] | 77,209.74 | 28,530,000 | 42,116,000 | 67.7% | 222,891 | 369.51 |
| RSPB | 74 | 71,114.00 | 5,151,000 | 12,590,000 | 40.9% | 69,608 | 72.43 |
| SWT | 121 | 19,823.51 | 1,017,315 | 5,201,355 | 19.6% | 8,408 | 51.32 |
| WTS | 57 | 8,643.80 | 1,046,500 | 1,181,500 | 88.6% | 12,746 | 84.05 |
| BFT | 1 | 1,324.00 | 567,925 | 680,117 | 83.5% | 113,585 | 428.9 |
| TFL | 1 | 4,028.00 | 160,000 | 560,000 | 28.6% | 160,000 | 39.72 |
| **Totals** | **389** | **206,604.05** | **£37,293,882** | **£63,924,909** | **Mean: 54.34%** | | |

[i] These figures include land-related staff costs.

[ii] This figure includes NTS 'built and countryside properties'.

# 5. Community Engagement and Collaborative Working

This section analyses the extent to which NGOs carry out community engagement both on the sites that they own and manage, and more widely. Specific consideration is given to: community engagement and local working groups; engagement through education; partnership working with communities; providing advice to farmers and landowners; and collaborative working for large-scale ecosystem restoration and green networks.

### 5.1 Community engagement and local working groups

A range of initiatives are evident across environmental NGOs, at the site and organisational levels, relating to community engagement. The majority of reviewed NGOs employ rangers or community engagement officers on many of their sites (as discussed in Section 4.2), with a specific remit to carry out community engagement, interpretation and educational activities. WTS also employs Woodland Learning and Engagement Officers in a similar capacity. Many of the larger organisations have also established volunteer-run local or regional groups to increase local level engagement and extend their activities more widely across Scotland, particularly in relation to events, walks, talks and conservation-related activity days. SWT, for example, have over 20 local member groups, with RSPB also having established numerous local groups. JMT also has five local member groups in Scotland and 12 across the UK. It should be noted, however, that in most cases (excepting RSPB's local groups) that these groups consist of organisational members – as opposed to open groups of non-members/locals. These organisations, as well as the WTS, also run a wide range of public events across Scotland throughout the year. Specific examples of extensive site-level consultation initiatives (including local communities) were also apparent, such as the Mar Lodge Estate independent review (see Case Study 5).

The NTS has also recently established four *regional groups* (of 8-15 NTS members each for the Highlands and Islands, North East Scotland, Eastern Scotland and Western Scotland) with the aim of representing local interests in the care of the natural heritage and improving local engagement and accountability. These groups have a specific remit to: act as NTS ambassadors in their local area; seek and feedback the views of local people; inform communities of NTS aims and activities; network with community representatives and organisations and lead the organisation of events such as local assemblies. In the majority of cases, site management plans are also made available to the general public, during their development and more generally, to increase transparency around site management. The development of site management plans on NGO land generally incorporates direct community involvement, through local meetings and consultation and participatory processes.

Environmental NGOs also engage with communities and community councils through a range of partnerships and working groups, including landscape partnerships. JMT, for example, is a member of the Nevis Landscape Partnership, on an equal footing with two Community Councils, representation from Rio Tinto Alcan, local residents group, the Local Authority and SNH. JMT also funds local projects through their conservation fund, which in 2012 provided £22,000 to community conservation projects across Scotland.

### 5.2 Engagement through education

Perhaps the most prominent area of engagement activity evident across the reviewed NGOs relates to educational activities, across a broad spectrum of age groups. This includes running educational programmes online and at visitor centres, with centres on SWT, RSPB, NTS and WTS properties and an extensive wild land interpretative centre recently established by the JMT in Pitlochry. JMT also played a key role in the establishment of the John Muir Birthplace Trust (in conjunction with East Lothian Council, Dunbar's John Muir Association and Dunbar Community Council) and development of an interpretative centre in Dunbar. Collectively, these centres represent areas for children and adults to learn about their local area, wildlife, natural habitats, landscapes and

ecosystems. Most incorporate a range of activities and workshops for adults and children, including specific interpretative and educational materials. The SWT, for example, run educational programmes from their four visitor centres: Falls of Clyde in New Lanark (see Case Study 3); Jupiter Urban Wildlife Garden in Grangemouth; Loch of the Lowes in Dunkeld; and Montrose Basin in Montrose. SWT also has a dedicated team of teacher naturalists at Montrose Basin, available for school workshops and events.

NGOs have also developed educational materials directly linked with the National Curriculum for Excellence. This includes the development, in a number of cases (SWT, RSPB, WTS, NTS), of specific online materials (e.g. fact sheets, lesson plans and learning activity sheets). The Branching Out West Lothian project (BOWL) carried out by WTS (see Case Study 2) is an example. The NTS also has a dedicated Learning Services Department (including learning managers and officers at specific local sites) which develops materials to support learners of all ages. This is supported by the NTS interpretation team and includes organising events and developing interpretative displays and curriculum-based programmes for schools and in-depth programmes for lifelong learning. NTS rangers and naturalists also regularly contribute to educational activities at site level. At a less formal level, there are also a number of examples evident of environmental NGOs developing activities to engage children with the natural environment (see Box 4.1).

**Box 5.1 Activity programmes developed by environmental NGOs to engage children with natural environments**

The RSPB has developed a range of specific environmental-engagement activities relating to children and teenagers. These include RSPB Kids, which provides a wide range of online materials for children, including educational resources, activities and competitions. The RSPB *Wildlife Explorers Club* (the largest children's environmental club in the world) also has 24 groups in Scotland, which develop activities relating to exploring local environments in fun ways, including nature trails, mini-beast hunts, games, quizzes and crafts. For teenagers, the RSPB have also established the *Phoenix Club* (for 13+ yrs), with six Phoenix groups established in Scotland (Glen Affric, Aberdeen, Fife, Edinburgh, Renfrewshire, and Dumfries and Galloway). Members engage in conservation activities, as well as voicing their opinions through writing for the Phoenix magazine and engaging in discussion in online forums. Phoenix group activities are supervised and linked with the John Muir Trust Award (see Box 4.2).

The SWT has established more than 25 *Wildlife Watch* groups for children across Scotland, with over 5,000 members aged 5-12. These groups are membership-based and provide a variety of supervised wildlife watching activities for children. The RSPB has also established *Wildsquare*, a web-based flora and fauna surveying project, which encourages children to monitor their local area. Participants are sent regular new surveys to complete, and activities to download, with survey results collated and made available online. The Woodland Trust also runs the *Nature Detectives Club*, with members being sent out new nature challenges on a weekly basis, as well as activity packs in the post.

The RSPB has also established the *Living Classrooms* programme, which has established a number of field teaching sites, where field educational staff deliver tailored full or half-day field trips for students across different age ranges. This programme is directly linked to the curriculum and supported by a wide range of online learning materials, with the WTS Woodland Learning Programme reflecting a similar approach. The RSPB also organises special education projects on species, habitats or places of particular natural heritage significance, which currently include specialised learning activities relating to white-tailed sea eagle re-introductions and Loch Leven National Nature Reserve. In relation to broader experiential learning, one of the most high profile and well established initiatives is the John Muir Award (Box 4.2).

**Box 5.2 The John Muir Award**

The John Muir Award, co-ordinated by the JMT, is an environmental awards scheme which encourages the development of awareness and responsibility for the natural environment among people of all backgrounds in a spirit of fun, adventure and exploration. The scheme promotes educational, social and personal development and also tackles social exclusion and encourages an environmental agenda in youth organisations. The scheme was launched in 1997, since which time over 100,000 awards have been made. The award scheme is relatively adaptable and consists of four key challenges: discover a wild place; explore its wildness; conserve - take personal responsibility; and share experiences. The award can be taken at three levels: Discovery, Explorer and Conserver.

SWT has also developed the DESS (Develop Ecological Field Surveying Skills) course, which runs over an 18 month programme and is designed to fill an ecological surveying skills shortage in Scotland. The scheme is funded by the Heritage Lottery Fund and SWT and the organisation takes on 10 trainees for each programme.

### 5.3 Partnership working with communities

NGOs are also involved in direct partnerships with communities across Scotland to support the delivery of sustainable outcomes for rural areas. JMT, for example, currently work in partnership with four community owned landholdings in the Highlands: Assynt, Galson, Knoydart and North Harris. The Trust contributed financially to the community purchase of three of these sites, with a Trust representative remaining on as a board member in each case. As well as direct support (e.g. providing £75,000 to support woodland expansion in Assynt), the Trust has also identified further funding sources in certain cases, including helping the Assynt Foundation raise £550,000 as part of the initial buyout costs. The Trust has also provided land management advice to these organisations and assisted with buyout applications and (on North Harris) the writing of a site management plan. The Trust also provides financial support for a ranger service on Galson Estate, supporting interpretation of the site and visitor engagement. SWT has played a similar role in relation to the Isle of Eigg community buyout, providing funding (together with Highland Council) towards purchase costs and remaining on as a board member and adviser. More widely, JMT also supported the Carrifran Wildwood initiative in purchasing their site and continues to provide advice and support to this community driven initiative (Box 4.4)

**Box 5.4 Carrifran Wildwood and the Borders Forest Trust**

The Wildwoods Group was formed in Autumn 1995 and consisted of about 40 interested people from the Southern Uplands and further afield. This grassroots group was instrumental in forming the Borders Forest Trust (BFT) in 1996, an environmental charity that works with communities, statutory and voluntary organisations and businesses to restore existing, and establish new, native woods and community woodlands. In 2000, BFT organised the purchase of the 607 hectare Carrifran site in the Moffatt Hills in 2000. Funds were raised by public subscription, mainly from more than 600 individual Founders of Carrifran Wildwood and various charitable trusts. The development of an informal partnership with the JMT was an important driver of the fundraising process. The Carrifran initiative seeks to restore the ecology of an entire catchment in the Southern Uplands to approximately the state it would have been in before people began practicing settled agriculture, about six thousand years ago. Since the purchase of the site, some 500,000 native trees of local providence have been planted. The project is overseen by a Steering Group, which includes volunteers, with site management led by the Site Operations Team comprising the Project Officer, the BFT Director and the Volunteer Project Co-ordinator.

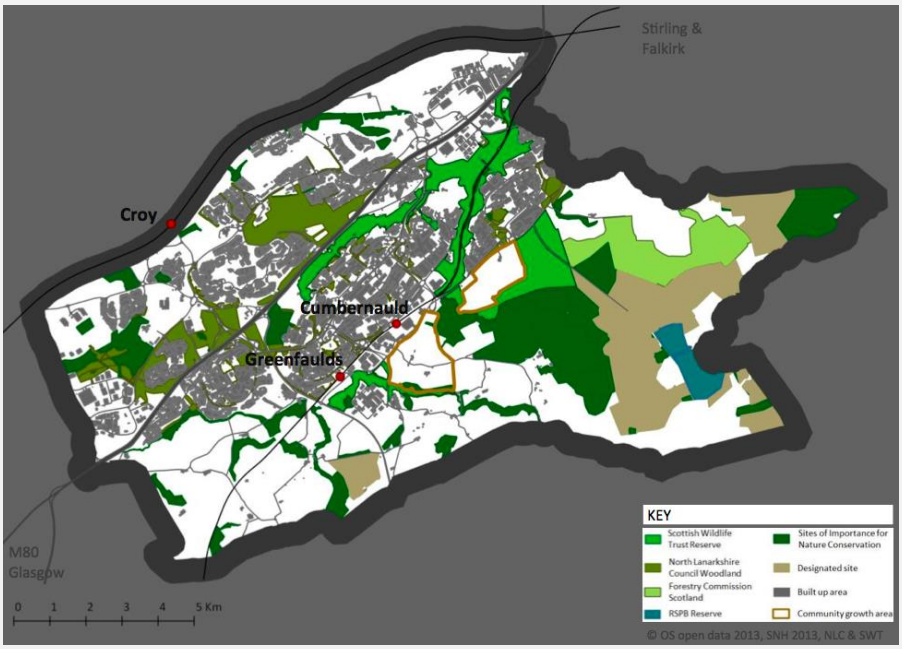
NTS have also established their *Community Partnership Programme*, which aims to provide opportunities for people of all ages, backgrounds and abilities to become involved with the work of the Trust, through partnerships with national and local community groups. The programme also enables corporate organisations to work with local communities to conserve Scotland's natural and cultural heritage. Sponsored by BAA, the initiative has delivered over 100 projects (each involving 10-15 young people) to young people in the communities of Edinburgh, Glasgow and Aberdeen airports. To date the programme has provided NTS supervised outdoor

conservation opportunities for a number of marginalised groups, including young people at risk from exclusion from school, long term unemployed adults, asylum seekers and prison inmates.

Case Study 6 provides a specific example of the opportunities which can be released for communities when working with NGOs, including facilitating access to higher volunteering capacity, a wider variety of funding sources and the development of powerful long-term strategic partnerships for supporting community development and environmental conservation.

**Case Study 6 Cumbernauld Living Landscape**

Cumbernauld Living Landscape was established in 2011 by three programme leaders: the Scottish Wildlife Trust, North Lanarkshire Council and Forestry Commission Scotland, with additional support provided by the Central Scotland Green Network in 2012 to further the development of the project. The project area, centred on Cumbernauld, extends to 5900ha and includes four SWT reserves, woodlands and parks under council ownership, the Forestry Commission's Arn Forest and private land. The area has 23% woodland cover, with a minority of this (14%) consisting of designated ancient and semi-natural native woodland. The southern parts of the site also include agricultural land, wetlands, moorland and recreational areas. However, many of these habitats are degraded and fragmented and much of the area is very urban in character, with a population of over 55,000, including a significant proportion of comparatively deprived urban areas.




***Cumbernauld Living Landscape Project Area***

A memorandum of cooperation has been developed with the aim of working with wider partners and local communities to deliver benefits for people, wildlife, visitors and the economy. A project plan outlines objectives and provides a source of information for new and potential project partners, with projects focused on a number of key areas (see the figure below). The project follows a 'sustainable place making approach', with an emphasis on identifying opportunities for improving marginal/declined greenspace areas and developing an integrated green network of woodlands, wider habitats and greenspace, embedding the community within a mosaic of functioning ecosystems. The concept is centred on reconnecting local people with their surrounding environment and enhancing the area's reputation, increasing community confidence and contributing to socio-economic regeneration through environmental improvements and increased collaborative working.

| | | |
|---|---|---|
| Connect, enhance and manage over 900 ha of woodland | Enhance community activities in the natural environment | Influence the design of green infrastructure and sustainable place-making |
| Restore and manage 250 ha peatland to reduce erosion whilst capturing carbon | Protect the green network through strategic land-swaps | Improve water quality by expanding Sustainable Urban Drainage Systems (SuDS) |

***Key project areas for Cumbernauld Living Landscape initiative***

The project currently employs a full time development officer (funded by Central Scotland Green Network, SWT and North Lanarkshire Council), with FCS and North Lanarkshire Council also providing staffing support. Volunteer input into projects across the site is extensive, with SWT volunteers alone, accounting for one volunteer per day. The partnership projects emerging from the project are also providing work for contractors, including on path maintenance and development and greenspace improvements. Exact visitor numbers across the whole site are unknown, with visitor numbers on the four SWT reserves estimated at over 20,000 and increasing annually.

Current projects include the development of two 'Community Growth Areas' - areas identified for future development of housing and linked services (e.g. schools), set within an improving greenspace network. SWT has also been working with

***Cumbernauld Living Landscape***

Scottish Water on a £5 million project on the site to develop sustainable urban drainage ponds (SUDS) ponds to improve drainage and water quality across the site. Emergent projects also include a community-led development of a 'climate change park', where park design incorporates climate change mitigation elements. Aspirational concepts include a National Greenspace Centre and a renewable energy installation.

The concept represents a shared framework through which partnership and wider community working can be facilitated, increasing the profile of the site, linking agencies and NGOs with the community and releasing access to funding and high numbers of volunteers. As well as the main partners, there is a range of wider active partners, including Central Scotland Forest Trust, Froglife, Scottish Water, and 2020VISION, with further partners joining as the project develops. The process includes collaborative working with utilities companies, road departments and network rail to improve linear habitats across the project area.

A wide range of local community groups (some established directly through community working on the part of SWT and the council), including Cumbernauld Environmental Society, Friends of Cumbernauld Community Park, Friends of Cumbernauld House Park and Friends of Cumbernauld Glen also play a critical role in longer-term development of the project. To strengthen linkages between local communities the project includes an objective to establish a community officer to work with schools, develop engagement events and support community groups.

### 5.4 Working with farmers and private landowners

Environmental NGOs also engage with the farming and private landowning communities, both informally and in a more formal advice provisioning capacity. The JMT for example, provides advice to the privately owned Corrour Estate in protecting and enhancing the wildness of the estate. This includes a JMT representative acting as a member of the estate management committee and advisor and in conjunction with joint projects. The JMT also provides volunteer work parties to help with managing the estate.

A number of NGOs also own and manage crofted land, with NTS and JMT responsible for (including crofting administration) some 17,362ha of land under crofting tenure, including all of the JMT's Sandwood, Torrin and Sconser sites, as well as part of their Strathaird and Quinaig sites. JMT actively wotk with local crofting groups and the NTS run a Traditional Croft management Scheme at their largest crofted site (Balmacara). This schemes provides financial incentives for crofters to manage their land in ways which promote biodiversity and maintain landscape values, which provides a second layer of land management for conservation. NTS is also currently introducing a project in Balmacara, through the local high school, to pass on the crofting traditions, to ensure traditional remain aware of traditional land uses and activities. The RSPB also maintains a long-standing and positive agreement with crofters at Balranald in the Western Isles, with similar management agreements with crofters in place at Vallay Island (North Uist), Loch Na Muilne (Lewis) and on Fetla (Shetland), although these are comparatively small sites.

The RSPB also provides advice to farmers across a range of areas. This has included the development of guides for farmers (available online) to develop biodiversity-friendly modes of agriculture. This includes advice on where financial support is available (through agri-environmental scheme options) to support specific habitat, species or conservation management activities. Since 1999, the RSPB has also run the (EU Life funded) Volunteer and Farmer Alliance (V&FA) project, engaging and building relationships with farmers through provision of bird surveys and general conservation advice. In conjunction with these measures, the RSPB also has a network of four regional

farm advisors available to support farmers across Scotland. The RSPB also currently runs (10) specific local/regional farm-related projects across Scotland, such as the *Strathspey Wetlands and Waders Initiative*, which involves working with farmers throughout Strathspey to maintain high quality wader habitat and prevent further declines).

### 5.5 Collaborative working for large-scale ecosystem restoration and green networks

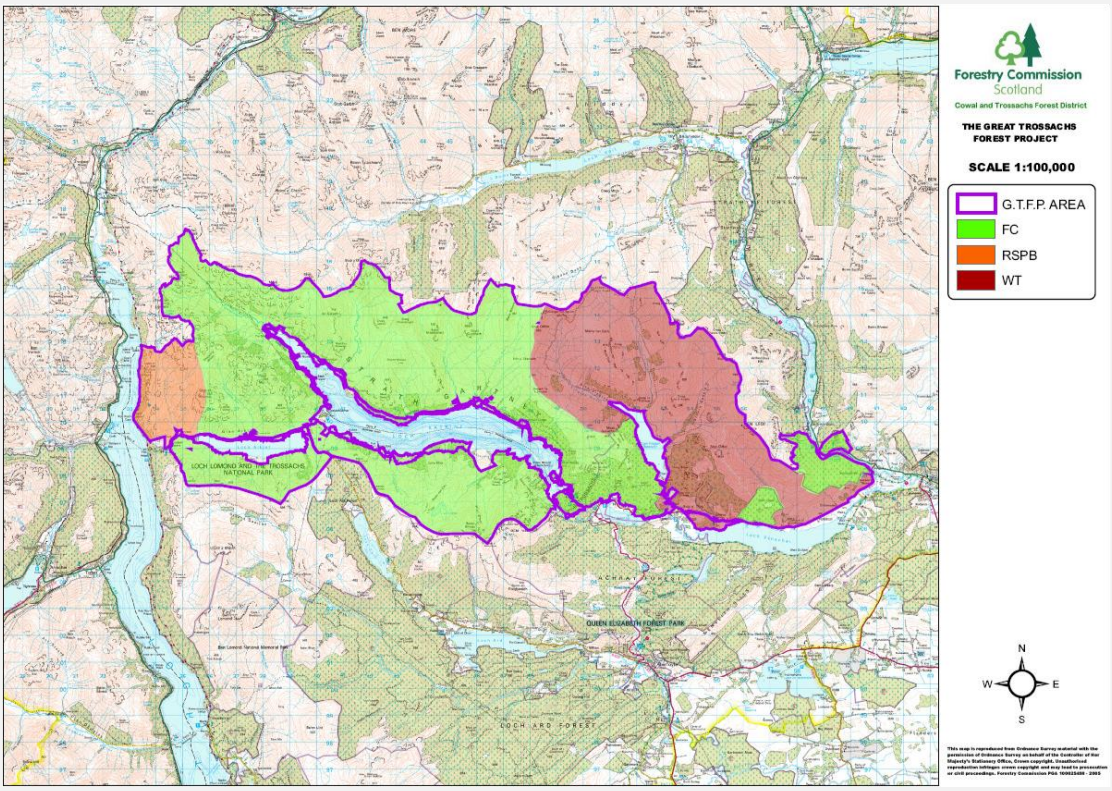
As well as engaging and working with local communities, environmental NGOs also engage in large-scale land-based multi-stakeholder collaborative initiatives. Two of the most high profile examples are the SWT-led Living Landscapes initiative and the RSPB-led Futurescapes initiative. The Great Trossachs Forest Case Study (Case Study 7) highlights a further example of the scale of the potential social and environmental benefits of collaborative landscape-scale restoration initiatives. There are currently two Living Landscape initiatives established in Scotland (with further sites across the UK), one on an urban site (5900ha) in Cumbernauld (see Case Study 6) and the second on a much larger (66,500 ha) and more remote site in Coigach and Assynt. While the setting for these initiatives is starkly different, their shared aim is one of landscape-scale ecosystem restoration and enhanced habitat connectivity to ensure the long-term provisioning of ecosystem services for social, economic and environmental benefits. Both initiatives work with a very range of partners including community groups, neighbouring landowners, local authorities, non-departmental public bodies and wide range of interest groups.

The RSPB's Futurescapes programme is also a UK-wide initiative, with the core aim of building partnerships among the RSPB and other environmental groups, local communities, the private sector and state bodies to develop a shared sustainable vision for the countryside and act collaboratively to achieve it.
Thirty four Futurescapes sites have been launched across the whole of the UK, with five specific sites having been established in Scotland (Inner Forth, Machair, Loch Leven, Caledonian Forest, and the Flow Country), totalling 76,841 hectares. The initiatives aim to take a cross-boundary approach to managing large areas for nature conservation, to increase the resilience of species and habitats to climate change and ensure sustainable delivery of ecosystem services.

A range of other landscape scale partnership projects have also begun to emerge in recent years )within which NGOs often play a role), including a number of landscape partnerships (with considerable support from HLF funding) including the Nevis Landscape Partnership, Living Lomonds Landscape Partnership and Clyde and Avon Valley Landscape Partnership.

**Case Study 7 Regenerating habitats at a landscape scale - The Great Trossachs Forest**

Launched in October 2009 by the Scottish Forest Alliance with support from BP, The Great Trossachs Forest (TGTF) is a collaborative initiative between RSPB Scotland, Forestry Commission Scotland (FCS) and Woodland Trust Scotland (WTS). The 16,650ha landscape-scale project aims to protect and enhance existing ancient woodland and moorland habitats of high biodiversity, recreational and scenic value across the three bordering sites of Loch Katrine (FCS), Glen Finglas (WTS) and Inversnaid (RSPB) (see map). The site, which lies within the Loch Lomond and the Trossachs National Park (accounting for 9% of park), is heavily designated for its habitat features, with five Sites of Special Scientific Interest (SSSI), three Special Areas of Conservation (SAC) and two National Scenic Areas. The project aims to reconnect these diverse, but fragmented habitats and create, over a 200-year timescale, one of the largest functioning native forest ecosystems in the UK. To achieve this, initial work is being undertaken in two phases, with Phase 1 (2008-2012) consisting of surveys, impact assessments, removal of non-native trees and some new planting and path network development. So far, 1152ha of new native woodland has been planted and 821ha is expected through natural regeneration. Phase 2 planning is now underway, which will ultimately result in 4400ha of native woodland, including high canopy oak woodland, Caledonian pine, pasture woodland and wet alder wood, with open habitats also being enhanced through conservation management.




***The Great Trossachs Forest project area***

The site hosts a wide range of protected habitats and species, including a diversity of native woodland types (including the oldest dated ash trees in Scotland), locally rare grasslands, bryophyte and lichen assemblages, numerous red and amber listed bird species and a wide mammal assemblage. The GFT catchment area also serves as the main freshwater source for Glasgow. Following a Cryptosporidium outbreak sheep were removed and biodiversity management encouraged across the site, with management practices now required to take account of impacts on the water supply. Management is also reducing invasive species, such as rhododendron and knotweed, grey squirrel and American mink are and removing non-native conifers. Biodiversity benefits of management which have been observed across TGTF thus far, include identification of Pearl bordered fritillary butterfly after an absence of 25 years, annual (excepting one year) substantial increases in black grouse numbers, the establishment of new black grouse leks and new otter holts, confirmed breeding pairs of golden eagles and population expansion in red squirrel, osprey and pine marten populations.

TGTF also represents an exemplary site for long term monitoring – the aim being to inform understanding of TGTFs role in carbon sequestration and ecosystem function and inform future large-scale woodland regeneration projects and government

forestry and climate change policy. TGTF also aims to act as a 'living laboratory' demonstration site for all education levels through supporting opportunities for research, outdoor learning and local-level skills development. This has included the development and promotion of teaching packs, including short films, worksheets and activities for secondary school students. TGTF has also hosted a wide range of special interest and international visitors interested in the collaborative ecosystem management approach. The Loch Katrine component of TGTF also won the Best Native Woodland category in the Scottish Finest Woods Award 2012, with TGTF also coming second overall in the 2012 UK Landscape Awards.

The activities of TGTF have also resulted in a range of current and potential associated socio-economic impacts. This includes direct employment, with the project overseen by a development officer, with six further staff resourced by their respective organisations across the three sites. Site management and project delivery also relies on a wider network of FCS, RSPB and WTS staff, contractors and volunteers. Currently efforts are being made to expand and coordinate the networks of volunteers being used across the site in a range of capacities. TGTF also engages in a wide range of engagement, interpretation and promotional activities. This has also included the development of a TGTF website (www.thegreattrossachsforest.co.uk), with a marketing strategy also planned to promote The Great Path and a TGTF interpretation strategy in place. There are considerable potential benefits for local businesses relating to increased visitor numbers (currently in excess of 200,000 annually) and wider opportunities, with over 70% of Scotland's population living in nearby cities. To enhance accessibility and the visitor experience a range of initiatives are planned or underway, including:

- Path improvements to facilitate recreational experiences for all abilities and interests, (walking, biking, horse riding), including planned path development between Kilmahog and Lendrick to create a link to facilitate development of a long distance Great Path, releasing potential for new accommodation, catering and recreational businesses;
- The development of unmanned 'visitor gateways' to welcome, inform and guide visitors;
- Development of a 'natural play trail' to encourage families to explore and engage with the environment;
- The Great App, a smartphone application, providing maps, guidance, games, fun facts and inspiration for visitors and a series of short promotional films about TGTF; and an interactive photo tour of the area
- An Art and Literature Trail, linking the areas cultural heritage and associations with historical figures with recreational opportunities;

To engage a wider audience with TGTF, a range of regular and specialised events are held, including tree planting days for schoolchildren and heritage and archaeological guided walks. TGTF also works with wider organisations and community groups, including the Loch Lomond and the Trossachs National Park, (TGTF also utilizes the parks extensive volunteer network). TGTF has also worked with Strathard Community Trust to reinstate the historically significant 'Old Military Road' and is continuing to work with the Trossachs Landscape History Network, to communicate familiar local 'historic stories' through guided walks and interpretation.

TGTF represents a high profile example of effective partnership working which has resulted in a formalized commitment to create and manage large-scale native woodland for 200 years, which has major potential to contribute to a wide range of Scottish Government policy objectives. The model allows for each of the partner organisations to pursue their specific site management objectives, while working towards a wider set of strategic aims relating to the 'bigger picture' of woodland connectivity and ecosystem management and embedding TGTF as a meaningful concept in Scottish and wider society. This flexible model of partnership working facilitates the emergence of shared ideas and learning and good practice, limiting silo thinking and promoting cooperation and collaboration.

***Native Woodland Discussion Group excursion at Loch Katrine in the Great Trossachs Forest***

## 6. Conclusions and Implications

1. This study has not compared NGO landownership and management with other forms of landownership in terms of respective benefits. It is difficult therefore to determine in every case exactly which impacts are solely related to NGO activities and which may occur (at least to some extent) regardless of ownership. Nevertheless, database analysis and case studies indicate that the land management-related activities of NGO landowners result in considerable 'added value' and are directly related to a very wide range of considerable social, environmental and economic impacts. These include: the development of environmental interpretation; increased opportunities for recreational experiences in both urban/peri-urban and rural sites; increased local visitor numbers and local spend; local employment; the involvement of people in land management and conservation through volunteering and wider engagement activities; and releasing opportunities for extensive partnership working.

2. NGO owned and managed land represents some of Scotland's very finest land in terms of scenic, natural heritage and cultural values. Full valuation (in any sense) of this resource is difficult, or perhaps even impossible, due to the iconic and relatively unique status of many sites.

3. This study did not assess indirect economic impacts of NGO landownership and management. However, case studies and wider work indicate the significance of indirect spend related to the activities of NGO landowners - particularly by site visitors. The high visitor numbers to NGO owned and managed land shown here, indicate that indirect economic impacts of NGO ownership and management are likely to be considerable. Many sites also occur in rural or remote rural areas, where employment and economic impacts can be disproportionately significant. Case studies and wider work also indicate the increased significance of landscape and nature-based tourism and wider related activities in a time of evolving 'ruralities' – potentially increasing further the importance of the activities of NGO landowners in Scotland in a socioeconomic context.

4. Furthermore, this study did not assess the socioeconomic value related to the maintenance of ecosystem services associated with NGO landownership and management. These values are potentially very considerable; however, their quantification was outside the scope of this report.

4. The encouragement of responsible access and access which accounts for natural heritage and/or landscape values is generally a core objective on NGO owned and managed land. This strongly reflects existing land reform legislation, as well as wider policy drivers such as the Scottish Land Use Strategy.

5. The emphasis on volunteering across NGO owned and managed sites represents a key aspect of engaging Scottish society with their surrounding environment and strongly reflects Land Use Strategy objectives.

6. Community engagement on NGO owned and managed sites is widespread – although this is, to some extent, focused most strongly on educational activities (across all age spectrums) and is, to a certain extent, membership-focused. However, an increasing shift towards more participative/empowering engagement is apparent (e.g. NGO-community partnerships, NTS regional groups etc.). These activities should be supported and built upon in line with associated policy drivers.

7. NGO landownership is in the minority as a form of landownership in Scotland – however, the comparatively small scale of the sector as a landowner/manager has led to a continual and growing focus on wider partnership working. NGO owned and managed land also has significant potential in terms of acting as an exemplar, both in relation to conservation land management and integrated land management, and influencing landowners and land management practices more widely.

8. Considerable scope for further research in this area exists, including a more in-depth review of economic (including indirect) impacts of NGO landownership and management and a broader review of benefits and impacts from wider stakeholder and local community perspectives.

## REFERENCES


[i] Bryden, D. M., Westbrook, S. R., Burns, B., Taylor, W. A., and Anderson, S. (2010). Assessing the economic impacts of nature based tourism in Scotland. Scottish Natural Heritage Commissioned Report No. 398.

[ii] Woodland Trust Visitor Survey (2000-2001)

[iii] www.woodlandtrust.org.uk/bowl

[iv] http://blogs.scottishwildlifetrust.org.uk/fallsofclyde/

[v] http://scottishwildlifetrust.org.uk/reserve/falls-of-clyde/

[vi] Visit Scotland (2008). The visitor experience 2008. Harris Interactive.

[vii] Bryden, D. M., Westbrook, S. R., Burns, B., Taylor, W. A., and Anderson, S. (2010). Assessing the economic impacts of nature based tourism in Scotland. Scottish Natural Heritage Commissioned Report No. 398.

[viii] JMT (2011). Annual Report.

[ix] SNH (2009). National Trust for Scotland Grant application for Scotland's Mountain Heritage Programme. <http://www.snh.org.uk/data/boards_and_committees/main_board_papers/0245.pdf> (last accessed 7 January 2009).

[x] Jones, G. (2011). An investigation into the willingness of recreational hill users to contribute financially towards the costs of upland path repair work. Unpublished MSc dissertation, University of the Highlands and Islands.

[xi] John Muir Trust (2008) Ben Nevis Management Plan (2008-2012) http://www.jmt.org/nevis-mgt-plan.asp

[xii] Strathspey Surveys (2003) Nevis Area Recreation Survey 2001-2, The Nevis Partnership.

[xiii] JMT Site Management Plan

[xiv] JMT (2011) Ben Nevis Summit Plateau Management Position Statement (www.jmt.org/assets/nevissummitmanagement31aug2011.pdf)

[xv] Nevis Partnership (2008) Nevis Strategy 2008-2013 (www.nevispartnership.co.uk/pdf/Nevis-Strategy-2008.pdf

[xvi] Scotland's People Annual Report: Results from 2011 Scottish Household Survey: http://www.scotland.gov.uk/Publications/2012/08/5277/12

[xvii] Mar Lodge Estate Visitor Management Plan (2013-2016). National Trust for Scotland.

[xviii] Scotland's Mountain Heritage; Mar Lodge Estate Upland Path Audit

[xix] NTS: Mar Lodge Estate Management Plan (March 2006-February 2011).

[xx] Mar Lodge Estate: Education and Learning Strategy (final draft)

[xxi] Fraser of Allander Institute (2010) *An Economic Study of Grouse Moors*. Commissioned Report, Game and Wildlife Conservation Trust and University of Strathclyde.

[xxii] PACEC (Public and Corporate Economic Consultants, Cambridge). 2006. *The Contribution of Deer Management to the Scottish Economy*. Report commissioned by the Scottish Association of Deer Management Groups. (2006)

[xxiii] Wightman, A. and Higgins, P. (2000) *Sporting estates and the Recreational Economy in the Highlands and Islands of Scotland*. Scottish Affairs 31 p18-36.

[xxiv] Willis K, Garrod G, Scarpa R, Powe, E., Lovett, A., Bateman, I., Hanley, N. and Macmillan D., (2003) *Social and Environmental Benefits of Forestry Phase 2 report to the Forestry Commission*, Centre for Research in Environmental Appraisal and Management, University of Newcastle.