SCOTLAND'S NATURE is for EVERYONE to EXPERIENCE and ENJOY... LET'S WORK TOGETHER TO PROTECT IT

Version 1: document updated July 2016

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1 How to use this document

Viewing the document

Consultation on the draft Wild Park 2020 took place from 23rd September 2013 to 6th November 2013. This final Wild Park 2020 is available to view online by visiting www.lochlomond-trossachs.org and following the links for Wild Park 2020.

There are several ways you can view Wild Park 2020.

- as a PDF at http://www.lochlomond-trossachs.org/wildpark2020
- as a hard copy at the National Park Offices at Carrochan Road, Balloch and Main Street, Callander
- as a large print version on request.

Revisions of the mapped data and projects will be undertaken periodically thereafter in line with planned cycle of reviews to the programmes.

2 Acknowledgements

Our Partners

Wild Park 2020 has been produced through the collective efforts and contributions of many organisations and individuals, particularly those listed below:

- Loch Lomond & The Trossachs National Park Authority
- Scottish Natural Heritage (SNH)
- Forestry Commission Scotland (FCS)
- Scottish Environment Protection Agency (SEPA)
- Stirling Council
- Argyll & Bute Council
- RSPB Scotland
- National Trust for Scotland
- Woodland Trust Scotland
- Scottish Wildlife Trust Callander Branch
- Saving Scotland's Red Squirrels
- Cowal Red Squirrel Group
- The Great Trossachs Forest
- Rivers and Fishery Trust Scotland (RAFTS)
- Forth Fishery Trust
- Tay Fishery Trust
- Argyll Fishery Trust
- Loch Lomond Fishery Trust
- University of Glasgow
- Butterfly Conservation Scotland
- Plantlife Scotland
- British Trust for Ornithology (BTO)
- Friends of Loch Lomond & The Trossachs
- Loch Lomond & The Trossachs Countryside Trust
- Carrick Golf Course
- Local Communities, land managers and individuals
- Froglife
- Clyde Forum
- Royal Zoological Society of Scotland
- Marine Conservation Society
- National Farmers Union Scotland
- John Muir Trust

Wild Park 2020 Project Team

The Wild Park 2020 project team members principally involved in the production of this document include: Gwenda Diack (lead); Ewen Kinninment; Linda Winskill; Allyson Blue and Alan Bell.

Lead Organisation & Contact Details

The National Park Authority has led on the production of Wild Park 2020 and chairs the Delivery and Monitoring Group which has a remit to further develop the programmes and projects and monitor the implementation of the actions.

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Photographs

- Laurie Campbell
- RSPB
- Forestry Commission Scotland
- Graeme Auty
- Ewen Kinninment

3 Foreword - Fiona Logan

Hello and welcome to Wild Park 2020

Loch Lomond & The Trossachs National Park is one of the most important places in Scotland for nature conservation: it provides 'ecosystems services' of vital importance to the nation. As well as supplying most of Glasgow's drinking water and a massive amount of hydro-electricity, our lochs and rivers are home to an impressively diverse range of native fish from the celebrated salmon to the archaic jawless lamprey. Our inspiring and much loved mountains are the hunting grounds for as many as ten pairs of golden eagles. Our peat bogs lock up thousands of tonnes of carbon that would otherwise add to climate change. Our woodlands and forests are not only a major source of timber and a huge attraction for visitors but are some of the most ecologically diverse and fascinating on earth with a rich array of mosses and other plants.

A National Park without wildlife would not have the same value for tourism or the Scottish economy, yet sometimes the assets of our natural environment are overlooked. Compared to more familiar economic measures such as jobs or GDP they can be less tangible on the balance-sheet when making decisions about priorities or where to invest money and time.

Safeguarding and enhancing this remarkable resource for future generations requires on-going investment of time and money to conserve and accumulate the new natural capital needed to support us all. In launching this document, we want to confirm the consensus and the commitment of all of the Partners on whom the future of the National Park's biodiversity depends. If we all succeed in meeting our objectives to conserve and enhance the ecosystems and wildlife of the National Park, we will be well on our way to meeting the Government's Challenge for Scotland's Biodiversity.

The scope of this document is hugely ambitious and rightly so. What can you commit to meeting the challenges of Wild Park 2020?

Fiona Logan
Chief Executive

Fàilte oirbh gu Fiadh-Phàirc 2020

Tha Pàirc Nàiseanta Loch Laomainn & nan Tròisichean air fear dhe na h-àiteachan as cudromaiche ann an Alba a thaobh glèidhteachas nàdair: cuiridh i air dòigh ‘seirbheisean siostaman eag-eòlais’, rud a tha glè chudromach don nàisean. Cho math ris a’ chuid as motha de dh’uisge òil Ghlaschu agus tòrr mòr dealain-uisge a sholarachadh, tha ar lochan is ar n-aibhnichean mar àite-fuirich do raon fìor ioma-sheòrsach de dh’iasg na dùthcha, on bhradan ainmeil gu buarach na baoibhe, a tha àrsaidh is gun ghiall. ’S iad na beanntan tarraingeach againn, cho dèidheil am measg mòran dhaoine, ionad-seilge do dh’uiread is deich paidhir fìor-eun. Cumaidh ar puill-mhònach mìltean de thunnaichean de ghualan fo ghlais, rud a chumas seo gun a bhith a’ cur ri atharrachadh sìde. Tha ar coillteachan is ar coilltean, chan ann a-mhàin mar ionadan-fiodha no fìor-tharraing do luchd-tadhail, ach cuideachd air feadhainn dhe na h-àiteachan as eadar-mheasgaichte a thaobh eag-eòlais agus as inntinniche air thalamh le raon saidhbhir de chòinnich is de lusan eile.

Cha bhiodh Pàirc Nàiseanta gun fhiadh-bheatha buileach cho luachmhor do thurasachd no do dh’eaconamaidh na h’Alba, ach uaireannan cha toirear aire iomchaidh air so-mhaoin ar n-àrainneachd nàdarra. An taca ri ceuman àbhaisteach eaconamach, leithid obair is GDP/BCD (bàrr-chinneas dùthchail), chan fhaicear seo cho tric air an duilleig-chothromachaidh, mar gum biodh, nuair a bhithear a’ dèanamh co-dhùnadh mu phrìomh amasan no mu càite am bu chòir airgead is ùine a chur an-sàs.

Tha a bhith a’ dìon agus a’ cur ris an seilbh iongantach seo air sgàth nan ginealachan ri teachd feumach air cur-an-sàs leantainneach a thaobh ùine is airgid a chor is gun glèidhtear is gun cuirear mu seach an calpa nàdarrach ùr sin a tha a dhìth gus taic a chumail rinn uile. Ann a bhith a’ cur air bhog an sgrìobhainn seo, tha sinne ag iarraidh dearbhadh fhaotainn air co-aonta is co-dhealas nan Com-pàirtichean uile, air a bheil làithean ri teachd bith-iomadachd na Pàirce Nàiseanta an crochadh. Ma shoirbhicheas leinn uile a thaobh ar n-amasan a choileanadh, ’s e sin glèidheadh is cur-ri siostaman eag-eòlais is fiadh-bheatha na Pàirce Nàiseanta, bidh sinn air deagh thoiseach-tòiseachaidh a dhèanamh ann a bhith a’ coileanadhDùbh lan Bith-iomadachd na h-Alba 2020.

Tha farsaingeachd na sgrìobhainne seo mar amas fìor mhòr, rud a tha iomchaidh. Dè as urrainn dhuibhse cur ri oidhirpean dùbhlan Fiadh-Phàirc 2020 a choileanadh?

Fiona Logan
Ceannaire

4 Our Vision for Loch Lomond & The Trossachs

We are focused on creating a sustainable future for the National Park's wildlife and the tourism draw that it brings. We have built up a picture of what success will look like – we use this vision to keep us focused and to recognise the benefits of our collective efforts for the long-term benefit of the Park. We hope you share our vision of a Park where:

On our mountains and moorlands, farmed livestock and wild deer are managed to maintain and restore upland habitats. Redundant drainage systems are modified to retain water in the hills for longer, reducing the risk of flooding in the lowlands and restoring our carbon-rich peatlands. In areas of heath and bog, purple heather, white headed cotton grass and multi-coloured sphagnum moss stand out to interested observers. An enriched food-chain benefits golden eagles which occupy all available territories within the National Park.

Native woodland extends from the high altitude montane scrub at the natural tree-line through upland birch and oak woods, right down to wet woodlands and Atlantic oakwoods at sea level. Bright greens of bursting leaves and the blue, white and yellow of woodland flowers in spring are as attractive to visitors as the classic yellows, reds and oranges of turning leaves in the autumn. Invasive Rhododendron ponticum is reducing in extent under a planned programme of control.

Native woodlands form the most complete of our habitat networks, enabling free movement of woodland species – potentially important in adaptation to a changing climate. The remnants of our native Scots pine woods in Strathfillan and Glen Falloch are also better connected through a programme of woodland expansion and re-structuring: the distinctive 'granny pines' of the relict woodlands are kept company by a new generation of vigorous young Scots pines.

Conifer plantations also form a key part of the woodland habitat network. Exemplary forest design integrating commercial forestry with low density forest edges, open ground and native woodland elements provides some of the most significant wins for biodiversity, landscapes and carbon capture within the National Park. Two key beneficiaries are black grouse and red squirrel whose populations expand where forest design sensitive to their requirements is implemented.

The National Park's lochs, rivers and ponds are sparkling gems, with excellent water quality and healthy freshwater ecosystems. We capitalise on our natural assets by generating renewable energy from our fast-flowing watercourses without damaging the natural environment. The migrations of fish such as salmon and lampreys are not impeded by man-made barriers. Invasive non-native species such as Japanese knotweed and Himalayan balsam that threaten our native habitats and species are under control with the ultimate aim of eradication. Conversely, recolonising native species such as beaver are valued for the role they play in our natural heritage.

Agriculture remains the key land use in the glen floors and other lowland parts of the National Park. Increasingly, management for conservation is seen as a viable element of land-based businesses providing income, employment and other benefits. The result is obvious: active management of key lowland habitats such as grasslands and wetlands, hedges and farm woodlands and watercourses. The characteristic features of historic designed landscapes are also maintained and restored for future generations. The sights and sounds of our lowland farmland are evocative of active farming in harmony with nature, from grazing livestock, hay and silage making, to the distinctive seasonal calls of lapwing, curlew and wintering geese.

Where the land meets the sea alongside our three sea lochs, Loch Long, Loch Goil and Holy Loch, the fantastic opportunities for people to enjoy seashore and marine wildlife are actively promoted within the tourism and recreation sectors as a unique and high profile feature of Scotland's National Parks. Coastal developments to service these growing sectors take account of the requirements of the wide range of species and habitats present.

Throughout the National Park, there are more opportunities for people to engage better with nature, both biodiversity and geodiversity. This includes active participation in conservation by young people, volunteers, local communities and land managers. Particularly special ecological and geological features are interpreted to a high standard. The burgeoning demand for wildlife-based tourism is well served in the National Park, and the area is well known as a good place to see wildlife such as golden eagles, red deer, black grouse, red squirrels, ospreys, otters, water voles, salmon, harbour seals and porpoises.

This vision inspires us: it keeps us and our partners focused on the important work we carry out today, for the benefit of tomorrow.

We hope that you will share our vision

5 Our Wild Challenges

Taking forward our vision requires focussed action and the involvement of many different organisations and individuals to carry out projects both large and small. We are aiming to focus this work on five areas in particular in order to maximise the benefits to biodiversity. These are our large flagship projects which we are calling Our Wild Challenge projects.

These projects will be exemplars of best practice that demonstrate a landscape scale, ecosystem approach to delivering for biodiversity which we hope will make a significant contribution to the Challenge for Scotland's Biodiversity and push forward on some key priorities within the National Park. They are:

Our Mountain Bogs
Our Woodland Habitat Network
Black Grouse
Red Squirrels
Invasive Non-Native Species

6 What is Wild Park 2020?

Wild Park 2020 is the second edition of Loch Lomond & The Trossachs National Park Biodiversity Action Plan. It sets out the strategy for achieving the long term vision for our National Park's biodiversity. It sets out goals for working towards that vision over the next 25 years and lists the projects which we, the National Park Authority and its partners aim to deliver between now and the year 2020.

It will focus effort on meeting our biodiversity commitments with in the National Park Partnership Plan 2012 – 2017, so that the natural heritage within the National Park can thrive, be enjoyed by all and continue to provide essential ecological services.

It will help us to meet future environmental challenges and will contribute to the Scottish Government's strategic objectives for sustainable economic growth. It will help us to meet our international obligations towards conserving biodiversity both within the United Nations (the 'Aichi targets') and the European Union (the 2020 targets within the European Biodiversity Strategy) and Scotland (the outcomes within the 2020 Challenge for Scotland's Biodiversity document). These strategies and targets all call for a step change in efforts to halt the loss of biodiversity and to restore the essential services that a healthy natural environment provides.

Wild Park 2020 sets out over 90 projects which it is hoped will be achieved by various partner organisations over the plan period with both confirmed projects and aspirational projects listed. The range of valuable projects shows great scope and ambition to achieve our biodiversity vision in today's challenging economic circumstances.

Listed under 10 Work Programmes, the biodiversity projects within Wild Park 2020 have emerged from a long process of discussion amongst the partners. There are programmes for each of the National Park ecosystems, species action, biosecurity and the control of invasive species, climate change, geodiversity and people and nature.

Wild Park 2020 includes a chapter which outlines how the National Park Authority sets out to meet its 'biodiversity duty'. Each public body has a duty under the Nature Conservation (Scotland) Act 2004 to further the conservation of biodiversity as far as is consistent with the proper exercise of their functions. As conservation of the natural heritage is one of the primary aims for National Parks, it is appropriate that this document serves to show how the National Park Authority will undertake this duty.

Finally, Wild Park 2020 sets out how we will as a partnership keep things moving forwards, how we will measure our progress along the way (there are a set of indicators to measure progress on achieving our long term vision). Progress within the National Park is dependent on our partners sharing the vision, the objectives and the challenges. Wild Park 2020 is a shared agenda, to be delivered in partnership to conserve and enhance the habitats and species that make this National Park so special.

7 Climate Change Programme

Introduction

In conserving our biodiversity we need to understand the impacts that climate change will have on our habitats and species. Research that helps to inform us of predicted impacts will enable us to respond and adapt our land management to minimise the impact of climate change. In particular, ensuring that habitat networks are in good health and habitats are not fragmented will help some species to move through the landscape to locations with more favourable conditions.

Carbon gases are some of the greenhouse gases which contribute to global warming. Some of our habitats in the National Park are effective carbon stores. Deep peat is particularly important in locking up carbon. Collectively Scottish peat bogs hold ten times the carbon of the UK forests. Conserving our deep peat areas in the National Park is one way that we can help combat climate change and maintain our carbon stores.

We also have a significant proportion of the National Park covered in woodland and forest. Trees store carbon and so by maintaining our woodlands and forest cover in a sustainable way we are also helping to combat climate change.

The National Park is also a source of two major river systems. One of the impacts of climate change is an increase in the number of heavy rainfall events which results in localised flooding when the rivers are in spate. We need to help our habitats adapt to increased flooding and also look at ‘soft engineering’ solutions which lowers the flood risk to land and houses. Projects which help to take forward the objectives of the Floods Directive to implement natural flood management opportunities need to be explored.

Climate Change, in 25 years time

- The existing biodiversity resource is conserved and is more robust and better able to cope with climate change impacts.
- Ecological connectivity is improved to allow species to move and habitats to adjust in response to climate change

- An evidence-based approach has been adopted to decision making for biodiversity which recognises that the resource is constantly changing and may do so more rapidly due to climate change.
- Our understanding of the impacts of climate change on the National Park has developed and measures have been identified which help to reduce the effects of changes in rainfall, droughts and increased storm events.
- The capacity of forests, woodlands, peatlands and soils to act as carbon stores is protected and enhanced.
- The soil, water and land management allows space for natural processes to take place (such as flooding on flood plains and natural movement of river channels).
- Technologies, small scale renewable energy developments and land management that reduce greenhouse gas emissions without degrading the natural environment and lower our carbon footprint are supported.

Climate Change Projects

Project Status:
🟢 Project completed or progressed on schedule
🟡 Project behind schedule
🔴 Project not progressed

(More information on project status is available in Appendix II: Project List)

- **Project 40:** East Loch Lomond native woodland conversion 🟢
- **Project 41:** Woodland Regeneration in Coire Corrach 🟢
- **Project 50:** NTS Blanket bog restoration 🟢
- **Project 51:** Peatland restoration 🟢
- **Project 61:** Sea Level Rise & Storm Surge Behaviour in the Firth of Clyde 🟢
- **Project 78:** Moorland Indicators of Climate Change Initiative Schools Project 🟡
- **Project 87:** Duchray Water Natural Flood Management 🟢
- **Project 88:** Geology and Landscape of Loch Lomond & The Trossachs - **unknown**
- **Project 91:** Glenfalloch Estate 🟢

Our Wild Challenge – Our Mountain Bogs

Several projects which focus on our upland mountain bogs will collectively make a contribution to the conservation and protection of our carbon stores, locked within the deep peat of our blanket bogs and peaty soils of the upland heaths. These projects will help to conserve our mountain habitats and the wildlife it supports, such as our golden eagles. This Wild Challenge therefore contributes to both the climate change programme and the mountain and moorland programme.

Past land management has resulted in a loss of ecological condition of these mountain habitats. However through establishing sustainable herbivore levels in these areas and undertaking sensitive restoration, such as grip (drain) blocking, the condition of the peatlands can be improved and these impacts reversed. By working together at a landscape

scale across areas of the National Park which support these peatlands, a holistic approach to their management can be undertaken. This will involve working with private landowners to implement deer (and other herbivore) management plans, peat conservation projects and designing forests around rather than on deep peat.

Alongside the long term climate change benefits and the biodiversity benefits, there are indirect economic benefits to conserving the 'natural capital' of our peatlands. Healthy peat bogs provide a vital function within the water ecosystem, helping to store and release water slowly which mitigates the impacts of both floods and droughts. Peat bogs in poor condition on the other hand can erode during flood events, leading to a loss of water quality and they do not have the same ability to slow the passage of water downstream. Conserving our mountain bogs helps to mitigate the impacts of flood events downstream and also help to maintain our water quality during these events.

This research has identified priority areas where we will seek to work with land managers within the park to cost up a programme of practical management works in conjunction with grazing management. The on-going work by the National Trust for Scotland at Ben Lomond will act as a practical case study for other land managers to see best practice in action.

The future development and practical implementation of this project relies on working with private land managers across the park to improve the condition of peatland, both soils and vegetation. The scope of works delivered on the ground will depend on land managers' individual abilities to incorporate changes into their business needs but also on the funding available through mechanisms such as the Green Stimulus Fund and SRDP.

The National Park Authority’s role will be to co-ordinate the design and costing of practical works, to negotiate with land managers and to access funding to undertake the work. Key partners include Scottish Natural Heritage and land managers.

8 People & Nature Programme

Introduction

The National Park is a wonderful place both to live and to visit and the attraction the area has for people is clear with over 4 million people (both from Britain and abroad) accounting for over 7 million visitor days to the National Park each year, making a highly significant contribution to Scotland's tourism economy and to the quality of life of Scotland's people. Many visitors have a strong connection with the area, visiting and often re-visiting the National Park regularly and they want the area to be cared for and protected.

The National Park's biodiversity is a natural asset that tourism businesses rely upon to attract people to come to the area. By strengthening the connection between people and nature, both benefit. By increasing people's understanding of the biodiversity of the National Park, this relationship is strengthened and people's enjoyment and appreciation is enhanced. By enabling people to get involved in caring for the National Park, nature benefits from their actions. People want to feel that they are making a positive difference through their actions both small and large. Some people have particular skills, knowledge and interests, for example botanical knowledge or wildlife interest, which we want to harness for the benefit of our biodiversity. We need to foster opportunities for people to look after our Park's biodiversity and to make a contribution to its long term future.

In the first 8 years of the National Park Authority the Community Futures Programme offered support to communities through a commitment to developing local Community Action Plans (CAP), providing community mandate and prioritised projects and activities for an agreed period of time and by supporting community structures and organisations that can be partners in delivering initiatives and projects. The projects include a wide variety of environmental improvements, the current projects are listed in the attached list. The great success of communities participating in the programme has continued with the development of the LLTNP Community Partnership into a membership organisation for community groups across the Park has further developed the programme of Community Action Planning with

most communities with maturing Community Development Trusts, some on their third CAP having already delivered many successes for their own communities and contributing to area and parkwide initiatives, driven from the bottom up that public agencies and other bodies can actively engage and support.

People & Nature, in 25 years time

- Visitors and residents understand what it is to be in a National Park and respect it as a place to enjoy and conserve.
- Information about the wildlife, geodiversity and habitats of the National Park is widely accessible, with high quality interpretation that celebrates our biodiversity and geodiversity.
- There are opportunities for expression and celebration of the natural heritage through the creative arts and links between celebrating the cultural and natural heritage are strengthened.
- People can experience wildlife first hand with excellent provision of facilities accessible to all across the National Park.
- The biodiversity of the National Park is promoted by tourism businesses and is considered to be an asset to the area and wildlife based tourism and sustainable businesses are thriving.
- Skills training which supports wildlife and tourism businesses is in place and training in geodiversity and biodiversity interpretation is available.
- Public engagement in research, surveying and monitoring in the National Park is helping to deliver actions and monitor progress.
- There are excellent opportunities for schools and groups to participate in lifelong learning which celebrates, cares for and enhances our biodiversity.
- There is wider use of the John Muir Award to connect people to and become actively involved in caring for and enhancing the biodiversity of the National Park.
- People can get hands on involvement through volunteering opportunities for residents and visitors to carry out practical conservation of the National Park's habitats and species.
- The value of biodiversity for its ecosystem services is recognised and sustainable rural development takes account of these services.

- The communities, businesses, land managers, NGOs and public agencies in the National Park work together to plan and deliver environmental benefits.
- The land is managed for multiple benefits by viable land-based businesses which ensure the integrity of the biodiversity.

People & Nature Projects

Project Status:

- Project completed or progressed on schedule
- Project behind schedule
- Project not progressed

(More information on project status is available in Appendix II: Project List)

- **Project 1:** Rare Fish in the National Park
- **Project 2:** Luss Water sea trout recovery programme
- **Project 12:** Wild Challenge Red Squirrels
- **Project 14:** Trossachs water vole project
- **Project 15:** Water Voles Across the National Park
- **Project 16:** Freshwater mammals sightings project
- **Project 22:** WeBs and BBS Surveys
- **Project 23:** 'What's Up?'
- **Project 24:** Scottish Dragon Finder Amphibian & Reptile Events
- **Project 25:** Lepidoptera Surveys
- **Project 26:** Lichen surveys
- **Project 27:**Fungi, lichen and bryophyte management - **Unknown**
- **Project 29:** Endrick and Blane INNS - **Unknown**
- **Project 32:** INNS reporting systems
- **Project 33:** Forth INNS programme
- **Project 34:** Upper Tay INNS programme
- **Project 43:** Heritage Tree management & replacement programme
- **Project 44:** Tree Health in the National Park
- **Project 46:** Juniper assessment survey
- **Project 57:** Marine Wildlife Sightings Scheme
- **Project 58:** Marine Wildlife Leaflet
- **Project 59:** Seasearch
- **Project 60:** Beachwatch
- **Project 64:** Management of Whinney Hill
- **Project 67:** Management of Carrick Golf Course - **Unknown**
- **Project 68:** Our Park Scheme
- **Project 69:** Gardening for Biodiversity
- **Project 70:** Wild Lomond Website
- **Project 71:** Education & Volunteering Biodiversity Programme
- **Project 72:** Strathfillan Community Woodlands
- **Project 73:** Management of Little Leny Meadows

- **Project 74:** Wildflower Seeding project
- **Project 75:** Callander Geodiversity Trail Booklet
- **Project 77:** Balmaha Visitor Centre
- **Project 78;** Moorland Indicators of Climate Change Initiative
- **Project 84:** John Muir Conference 2014
- **Project 85:** Business in the Park Biodiversity Training
- **Project 86:** Celebrating Nature Event
- **Project 89:** Tay Salmon in the Classroom
- **Project 90:** TGTF Archaeology & Biodiversity Study
- **Project 91:** Glenfalloch Estate

Our National Park Volunteers

Since the National Park was formed in 2002, volunteers have been contributing to the work of the National Park Authority. The most popular work that volunteers undertake is for 'practical conservation tasks'. Through this role, volunteers get a chance to be involved in environmental projects across the Park. Over the years this role has grown to include a variety of biodiversity projects. For example, volunteers can assist the Rangers in maintaining community wildlife sites, carrying out path maintenance on the West Highland Way and surveying for protected species such as black grouse, water voles and red squirrels.

A great example of where volunteers have helped our biodiversity is where they have undertaken surveys for red and grey squirrels. This information goes to build a picture of the distribution of each of these species at key locations and contributes towards a project to help conserve our native red squirrel and put in effective targeted grey squirrel control.

Volunteers also get involved in a number of other ways such as doing a John Muir Award or becoming a Volunteer Ranger and helping visitors to have a positive experience of the National Park by providing information and assisting with events and educational activities. Information on this and our other different volunteer roles can be found on the National Park Authority website. Opportunities to get involved are updated monthly with training being provided where needed for particular tasks.

9 Woodlands & Forest Programme

Introduction

Around 26% of the land within the National Park is wooded with around a third being broadleaved woodlands and two thirds being conifer forests. In addition to timber value, the woodland and forest resource has major scenic, recreational, and habitat value. The woodlands we have today reflect past management of both our semi-natural woodlands, planted forests and other land uses (farming and agriculture, upland estate management and urban settlements). The modern-day forester and land manager need to manage for timber whilst at the same time protecting and enhancing the natural and cultural heritage.

The National Park contains an exceptionally diverse and extensive area of Atlantic oakwoods. The area of Atlantic oakwoods within the National Park represents a significant proportion of the Scottish total. Their extent on both sides of Loch Lomond form one of the largest areas of semi-natural woodlands (woodlands with a history of previous management) in Britain, with the best and biggest areas (the western acidic oakwoods) being designated as a Special Area of Conservation (SAC) because of their biodiversity value.

Along with the Atlantic oakwoods, other UK BAP priority woodland habitats in the National Park include upland mixed ashwoods, wet woodland and native pinewoods. Many of these woods are ancient woodland sites which can be exceptionally rich in biodiversity. All forests are likely to have some biodiversity interest though there is a clear sliding scale from high value designated semi-natural woodlands where biodiversity is the predominant management objective through to plantation forests.

The important remnants of ancient Caledonian pinewoods in Glen Falloch and Strathfillan are the most southerly examples of this semi-natural habitat in Scotland. These pinewoods which amount to only 67 hectares have exceptional scenic landscape value.

Wood pasture is another rare and valuable feature within the National Park and also reflects past management of the woodlands. Glen Finglas, which is managed by the Woodland Trust is a good example of this type of woodland management, where grazing continues at a sustainable level within woodlands.

Recent years has seen an increase in the number of plant health challenges for woodlands and forests across the UK. Confirmed cases of Chalara fraxinea (Ash dieback), Dothistroma (red band needle blight) and Phytopthora pathogens (P. ramorum and P. lateralis) have been found in or close to the National Park. As a result, woodland and forest managers have to respond to these issues through felling affected species and working to build in resilience against tree pests and diseases through species and forest restructuring when restocking.

The Forestry Commission Scotland (FCS) is the largest landowner in the Park. The majority of its land lies within the Queen Elizabeth and Argyll Forest Parks. The forest parks are managed to deliver multiple benefits, balancing economic, recreational and biodiversity needs. Expanding and restoring the native woodland element within the forest parks is one of the major goals for these areas.

Woodlands and forests that are owned privately account for about 40% of the woodland in the National Park. There are real opportunities for biodiversity benefit if key outcomes such as restoration of ancient woodlands to native tree cover are delivered across the entire forest estate on both public and private land.

Much of the forest and woodland area has benefits for key woodland species such as red squirrels. Glenbranter Forest in the Argyll Forest Park is one such area that has been identified as stronghold for this species. Other UKBAP priority species such as pearl bordered fritillary, Scottish wood ant and small cow-wheat also can be found in the woodlands of the National Park.

The Great Trossachs Forest Project

Project Status:
- Project completed or progressed on schedule
- Project behind schedule
- Project not progressed

(More information on project status is available in Appendix II: Project List)

A number of projects are being delivered in The Great Trossachs Forest. These are:

- **Project 18:** Habitat enhancement for Black Grouse
- **Project 35:** Control of INNS - The Great Trossachs Forest
- **Project 38:** Project Habitat improvements for priority species
- **Project 39:** Wood Pasture Restoration
- **Project 47:** Montane scrub restoration - The Great Trossachs Forest
- **Project 54:** Vegetation monitoring of open ground
- **Project 55:** Cattle radio-tagging project
- **Project 71:** Education and volunteering biodiversity programme
- **Project 90:** TGTF – Archaeology & Biodiversity Study

Woodland & Forests, in 25 years time

- The ecological resilience (ability to adapt and withstand change from both climate change and pest and diseases) of the woodlands and forests in the National Park has been significantly improved through a combination of restructuring to create new native woodlands and to improve the biodiversity of the conifer plantations, with forest managers having responded to plant health issues and worked to address their impacts across the National Park.
- Management within private sector forests supports the creation of Forest Habitat Networks connecting habitats within forests managed primarily for timber production, with the forest and woodland networks being strengthened through woodland creation.
- There is increased coverage of private sector forests and woodlands by approved Long Term Forest Plans ensuring sustainable forest practises are undertaken and providing the mechanism to identify and implement opportunities for biodiversity enhancement.
- The conversion of all the FCS conifer plantations on East Loch Lomondside to native woodland will be nearing completion, including the particularly challenging Ptarmigan block. The new native woodlands of The Great Trossachs Forest are establishing as part of a diverse habitat mosaic. Native woodland habitat corridors are in place through the Achray, Loch Ard and Strathyre forests in the Queen Elizabeth Forest Park. Several neighbouring private landowners have also established new native woodlands. The habitat connectivity that has been put in place between all of these initiatives has created the largest single functioning mostly native woodland in Scotland and the UK, extending from Balmaha via Loch Arklet to the outskirts of Callander and Aberfoyle. This woodland includes several significant new areas of wood pasture and the development of sub-montane scrub areas and forms a mosaic with other valuable habitats including blanket bog, heath and species-rich grasslands.
- Woodland habitat network restructuring (as part of planned restocking) will improve ecological connectivity allowing native species to move. This is gradually being put in place along Strathyre and Loch Earn. This will in time improve the connection of the semi-natural woodlands of the Trossachs to their counterparts in Perthshire.
- The remnants of the ancient Caledonian pinewoods at Glen Falloch and Coire Coille Chuilc have been expanded and their ecological connectivity improved using a

combination of new woodland creation and restocking parts of conifer plantations. The native pinewood habitat network is closer to being linked to the other ancient remnants to the north of the Park at Loch Tulla and Crannach.

- Many of the Plantations on Ancient Woodland Sites (PAWS) in the National Park have been restored to appropriate native woodland types in a programme of restructuring at appropriate opportunities in the felling and restock cycle. The remainder is due to follow within the next decade. This has been achieved through a long term programme of work and opportunities being progressed on both private land and the National Forest Estate.
- Designated woodlands have the commitment and support of land managers to restore to favourable conservation status both within private and publicly owned woodlands and appropriate woodland management practises are in place to realise that objective.
- A programme of promoting long term retention forest and alternatives to clear fell has been established in suitable locations in the conifer plantations of the Argyll Forest Park, confirming its reputation as the oldest and finest forest park in Britain and enhancing the ecological value of the forests while retaining their productivity as a source of valuable timber. The increased cone production of the older trees has improved the habitat value of the area for red squirrels.
- Systematic restructuring of commercially productive plantations throughout the National Park has diversified their age structure and species mix. Combined with good new internal open space, edge transitions and riparian margins, the ecological quality of these productive conifer forests adds ecological benefits to the matrix of native woodland habitat that extends through them.
- The commercially productive timber crop has been achieved in balance with the landscape character, avoiding loss of key views or degradation of sensitive Landscape Character Types. The landform underlying forests should make a positive contribution to the design of the planting and open space.
- Grazing by herbivores (cattle, deer and goats) in woodlands has been managed and controlled at levels that improve structural diversity of the ecosystem whilst allowing natural regeneration of young trees to occur and the establishment of new woodlands. The overall effect has been to greatly enhance woodland habitat health, connectivity and species diversity, improving the ecological robustness of the whole.
- Other valued habitats including moorland, blanket bog, field systems and wet grasslands on the glen floors, plant communities and eagle home ranges on the uplands have all been carefully assessed to ensure that key areas and open ground habitat connectivity are maintained through careful woodland design which takes account of them.
- Woodland creation in riparian corridors support flood mitigation measures and provide valuable biodiverse woodlands. The implementation of the Forest and Water guidelines has enhanced water quality across the forests and woodlands with the creation of riparian woodland corridors contributing to these aims.
- A large number of native species live in the woodland and forest habitats, supported through resilient habitat networks and tailored woodland management which take account of their particular needs, for example sensitive woodland edge management for black grouse. On designated sites which have notified species, site management

objectives support the species and the national forest estate is managed so that it does not impact on adjacent designated sites with notified species.

- A stronghold site for red squirrels is being managed at Glenbranter and Kilmun in Cowal. Elsewhere in the district other woodland habitats are enhanced to support this species and deliver the Scottish Red Squirrel Action Plan.
- Survey information on other priority species is incorporated into forest design plans when these are being reviewed and local species action plans at a woodland site level are implemented with particular emphasis on black grouse, pearl bordered fritillary, red squirrel, water vole, barn owls, raptors and bat species throughout the forest area.
- A resourced rhododendron control programme has been undertaken within the National Forest Estate and other woodlands with the prioritisation of this work being co-ordinated as part of the wider Perth and Argyll rhododendron control work.

Woodlands & Forest Projects

Project Status:

- Project completed or progressed on schedule
- Project behind schedule
- Project not progressed

(More information on project status is available in Appendix II: Project List)

- **Project 9:** Owl Nest box monitoring
- **Project 11:** Bat Box Monitoring
- **Project 12:** Wild Challenge Red Squirrels
- **Project 13:** Scottish Wildcat Surveys
- **Project 17:** National Park Black Grouse Monitoring
- **Project 18:** Habitat Enhancement for Black Grouse
- **Project 19:** Callander Black Grouse
- **Project 25:** Lepidoptera Surveys
- **Project 26:** Lichen Surveys
- **Project 27:** Fungi, lichen and bryophyte management **- Unknown**
- **Project 30:** Rhododendron Control

- **Project 31:** Response of bryophytes to rhododendron removal
- **Project 35:** Control of INNS – TGTF
- **Project 38:** Habitat Improvements for priority species
- **Project 39:** Wood Pasture Restoration
- **Project 40:** East Loch Lomond Native Woodland Conversion
- **Project 41:** Woodland Regeneration in Coire Corrach
- **Project 42:** Gleann a'Chlachain Mountain Woodland Monitoring
- **Project 43:** Heritage Tree Management & Replacement
- **Project 44:** Tree Health in the National Park
- **Project 45:** Ben Lomond Juniper Restoration
- **Project 47:** Montane Scrub Restoration – TGTF
- **Project 48:** Natural Habitat Regeneration on Lower Ptarmigan
- **Project 49:** Rest & Be Thankful A83 Tree Planting
- **Project 55:** Cattle Radio-tagging project
- **Project 64:** Management of Whinney Hill
- **Project 66:** Loch Lomond Long Term Management Plan
- **Project 67:** Management of Carrick Golf Course **- Unknown**
- **Project 72:** Strathfillan Community Woodlands
- **Project 79:** Whole Farm and Estate Plans
- **Project 80:** Designed Landscape Project
- **Project 81:** Habitat Audit Data Checks
- **Project 82:** Integrated Habitat Network
- **Project 87:** Duchray Water Natural Flood Management
- **Project 90:** TGTF Archaeology & Biodiversity Study
- **Project 91:** Glenfalloch Estate

Our Wild Challenge – Our Woodland Habitat Network

The woodlands along the east shores of Loch Lomond and The Great Trossachs Forest to the Queen Elizabeth Forest Park woodland corridors towards Strathyre offer the potential to create the largest predominantly semi natural woodland habitat network in the National Park. This Wild Challenge would create the largest single functioning native woodland in Scotland and the UK, of exceptional biodiversity value and extending from Balmaha to the outskirts of Callander and Aberfoyle.

This Wild Challenge would pull together existing large projects in the area which include The Great Trossachs Forest, the woodlands within the Ben Lomond Memorial Park and the forest estate on East Loch Lomondside. It would examine the woodland habitat network across and beyond these areas and would involve working in partnership with the woodland managers in the area to carry out management which increases habitat connectivity and condition at a landscape scale. By focussing on existing work such as completing the conversion of the conifer plantations in the East Loch Lomondside area back to native woodland, continuing the woodland establishment round Loch Katrine and additional measures to establish a diverse woodland network, the extent and quality of the woodlands in this area will become truly exceptional at a national level.

Within this area there are already woodlands designated for their biodiversity value (the Loch Lomond and Trossachs Woods Special Areas of Conservation) along with several Sites of Special Scientific Interest. There are also other habitats within the area which need to be conserved for their landscape and biodiversity value and which make up a diverse habitat mosaic, for example wood pasture, sub-montane scrub, blanket bog, heath and species-rich grasslands. Part of this Wild Challenge will be to take an ecosystem approach so that there is a balance of the different habitats within the area.

There is already a partnership approach taken to The Great Trossachs Forest which aims to create a diverse habitat mosaic. This Wild Challenge would build on this partnership approach across this larger area.

10 Mountain & Moorland Programme

Introduction

The mountains and moorland of the National Park provide a magnificent scenic landscape which attracts visitors to the area. Conserving this special quality is vital in maintaining the tourism-based economy which is a major source of income generation in the Park. Mountains and moorlands cover half of the National Park with an extensive area above 2,500 feet (there are 21 ‘Munros’ exceeding 3000 feet and 19 ‘Corbetts’ exceeding 2500 feet within the National Park).

The mountains and moorland are largely managed for hill sheep and cattle farming and they also provide habitat for game and deer. The UK BAP mountain and moorland habitats in the National Park include upland heathland, blanket bog, montane heaths and willow scrub, upland calcareous grassland, upland flushes, fens and swamps and inland rock outcrops and scree. These habitats also support a wide range of priority species including our iconic golden eagle.

Mountain & Moorlands, in 25 years time

- All of the golden eagle nesting sites and their surrounding home ranges that were in regular use at the establishment of the National Park, have been safeguarded from adverse impacts. The habitat in historically used territories has been improved or restored, bringing an increase in the average number of breeding pairs per annum in the National Park.
- Management works have been undertaken on upland moorlands in five project areas including east Loch Lomond, Cowal, Breadalbane, the Braes o’ Balquhidder and the Trossachs to restore degraded blanket bog preventing loss of peat and encouraging active peat formation.
- There are heather recovery projects in place where heather has declined due to high grazing levels. This work complements the establishment of new areas of sub-montane scrub woodland at the upper edges of timber producing forests where development of a natural tree-line is underway in a number of locations.
- A programme of targeted bracken control has been carried out to improve heath quality and extent on moorlands of importance for the Callander black grouse project

and for other priority species project areas where it would help benefit those priority species.

- To improve understanding of the long term consequences of changes in livestock and deer numbers, surveys and monitoring of vegetation changes have been undertaken on upland areas in Cowal and Breadalbane where hill farming has declined since the establishment of the National Park.
- Deer are managed sustainably across the National Park. Deer management plans are in place, supported by Deer Management Groups, where appropriate, and are incorporated into land management plans. This ensures effective management of herbivore impacts, particularly on designated sites.
- The moorlands and mountains of the National Park are being managed in a sustainable way to produce a mix of ecological and economic benefits and productive hill-farming models and sporting estate objectives are pursued on many land ownerships, producing food of the highest quality whilst avoiding any deterioration in habitat quality. For example, deer and sheep numbers are managed in a way which sustains the habitat quality of the uplands.
- Trials have been undertaken of novel grazing regimes on the isolated open uplands in Cowal to test ways of retaining viable livestock farming in an area otherwise dominated by forest cover.
- All of the upland designated sites (SSSIs, SACs and SPAs) in the National Park have been brought back into favourable condition through measures including sympathetic control of browsing pressure by deer and sheep.

Mountain & Moorland Projects

Project Status:

- Project completed or progressed on schedule
- Project behind schedule
- Project not progressed

(More information on project status is available in Appendix II: Project List)

- **Project 17:** National Park black grouse monitoring project
- **Project 18:** Habitat enhancement for black grouse
- **Project 19:** Callander black grouse project
- **Project 23:** 'What's Up'
- **Project 25:** Lepidoptera Surveys
- **Project 38:** Habitat Improvements for priority species
- **Project 39:** Wood Pasture Restoration
- **Project 41:** Woodland regeneration in Coire Corrach
- **Project 42:** Gleann a'Chlachain mountain woodland biodiversity monitoring project
- **Project 45:** Ben Lomond juniper restoration
- **Project 46:** Juniper assessment survey
- **Project 47:** Montane scrub restoration- The Great Trossachs Forest
- **Project 48:** Natural habitat regeneration on lower Ptarmigan
- **Project 49:** Rest & Be Thankful A83 Tree Planting
- **Project 50:** Ben Lomond blanket bog restoration
- **Project 51:** Peatland Restoration
- **Project 52:** Heather Moorland management
- **Project 53:** Ben Lomond grazing project
- **Project 54:** Vegetation monitoring of open ground
- **Project 55:** Cattle radio-tagging project
- **Project 78:** Moorland Indicators of Climate Change Initiative
- **Project 79:** Whole Farm & Estate Plans
- **Project 81:** Habitat audit data checks
- **Project 91:** Glenfalloch Estate

Our Wild Challenge – Black Grouse

Black Grouse are a priority species for the National Park. The birds live in upland farmland and moorland areas adjacent to scattered trees and woodlands and the management of this edge habitat is vital for their survival. Good progress already been made on reversing the decline in population numbers through positive land management to combat issues of habitat loss, deer fences collisions and overgrazing of moorland.

In 2011, six farms and estates in the Callander area, with assistance from the National Park Authority, secured almost £720k of SRDP funding for a range of moorland and woodland management and predation control measures designed to help the local black grouse population, which had declined from around 50 displaying males in 1999 to around 15 in 2010. These privately run businesses also collaborate with Forestry Commission Scotland, who own and manage adjacent public land as part of the national forest estate, to identify complementary measures such as forest edge management, predation control and marking deer fences.

Callander is just one of six key areas for black grouse on predominantly private land within the National Park. If the NPA and farms and estates in the remaining five areas can tap into funds from the next SRDP programme from 2014, we may be able to roll out the approach taken at Callander over other large areas of the National Park.

Within The Great Trossachs Forest, long term monitoring of the lek sites will continue also elsewhere in the National Park the Forestry Commission will implement the recommendations contained within their management programmes for sites which contain active black grouse lek sites. These recommendations include enhancing black grouse habitat through restructuring upper edges of plantations, grazing management, fence marking and predator control.

Taken together these initiatives can succeed in turning round the fortunes of this fascinating bird whilst bringing about habitat improvements that will benefit other wildlife across much of the National Park.

On-going population monitoring by NPA, the RSPB and FCS staff along with volunteers from the Central Scotland Black Grouse Study Group will assess the outcome of these efforts across the National Park.

11 Lochs, Rivers & Ponds Programme

Introduction

The freshwater lochs in the National Park are some of the best-loved landscape features within the area and are heavily visited throughout the year. Along with Loch Lomond, there are 21 other large lochs and numerous smaller lochs and lochans. There are also approximately 50 rivers and larger burns, including the headwaters of the Tay and Forth rivers.

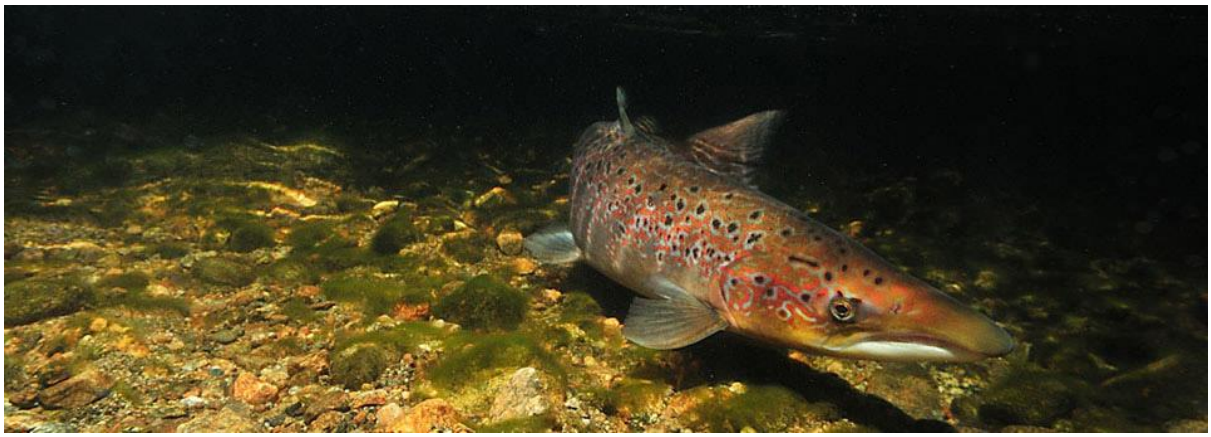
The lochs and rivers are very important from a natural heritage perspective, supporting important salmon and trout populations along with rare populations of Arctic charr, powan and river, brook and sea lampreys.

They also are hugely important in terms of ecosystem services, providing drinking water supply to the population of much of central Scotland including Glasgow as well as renewable energy generation through the large hydroelectric power stations such as Loch Sloy and numerous smaller run-of-river schemes.

Loch Lomond is the largest area of freshwater in Great Britain, covering an area of 71 square kilometres and is 36 kilometres in length. It is unique in terms of the high diversity and combination of fish species present with 19 species of freshwater fish including the larger of only two natural populations of powan, the other being in Loch Eck.

The Water Framework Directive classifies the water bodies in the National Park and determines their ecological status by assessing factors such as the level of modification,

diffuse pollution, etc. Maintaining the ecological quality of the water bodies and their surrounding habitats is one of the key objectives of Wild Park 2020 along with addressing the issues that are lowering the classification of some of our rivers. This involves ensuring that our use of the water resource is sustainable in a way which conserves the important habitats and species. Allowing space for river processes such as flooding to occur and for river channels to evolve naturally is also important in maintaining their biodiversity.



Lochs, Rivers & Ponds, in 25 years time

- The lochs, rivers and ponds of the National Park are all in good ecological status for each of the parameters defined in the Water Framework Directive.
- The potential to improve heavily modified water bodies has been fully implemented where feasible.
- Water quality problems including diffuse pollution and nutrient enrichment have been prevented from worsening at Loch Lomond and the Lake of Menteith. The acidity of the headwaters of the Forth on the eastern flanks of Ben Lomond has improved such that salmonids once again breed successfully in the Keltie and the feeder burns round Loch Chon.
- The habitat quality for native fish species and other native wildlife has been improved on the Teith and Fruin catchments by improvements to riparian habitats to prevent excessive widening of channels, and adjustments to compensation flows to ensure that water levels are not suppressed to unacceptable levels.
- Fish stocks for angling are managed using best-practice management for ecologically sustainable fisheries. Fishery management plans are in place for major lochs with an emphasis on stocking with native species everywhere except the long-established rainbow trout fisheries. The importance of the National Park for its remarkable freshwater biodiversity and rare fish is widely appreciated.
- Invasive non-native species including riparian weeds and mink are under control in many locations, with well-established programmes in place on the Teith and Fillan/Dochart catchments.
- Biosecurity measures are in place across the National Park to prevent new introductions.
- The Tay catchment beaver population has expanded into the National Park at Loch Earn and Glen Dochart and is managed sympathetically to prevent damage to

fisheries and forestry production, whilst also providing a significant new attraction to tourists and habitat benefits such as coppicing and pond creation in acceptable locations.

- The major lochs and main rivers have integrated management for biodiversity, fishery and recreation objectives. Ecologically sustainable recreational use and shore-based development of Loch Lomond, Loch Eck, Loch Earn and the other large lochs is ensured using a Limits of Acceptable change approach incorporating a programme of monitoring water bird populations and loch shore habitats, to prevent over use or over development at the expense of the natural heritage.
- Whole loch management plans are in place across the major lochs and rivers to properly integrate RBMP objectives and landscape considerations with fishery and recreation management. These help to ensure that each loch is looked at as a coherent, identifiable whole that is meaningful to riparian owners, local people and other stakeholders.
- The River Tay Catchment and the River Earn System (both of which have Freshwater Protection Orders) are being managed sustainably for their biodiversity.
- Flood-plain restoration along rivers is in place with soft engineering solutions being used along loch shores to address erosion.

Lochs, Rivers & Ponds Projects

Project Status:

- Project completed or progressed on schedule
- Project behind schedule
- Project not progressed

(More information on project status is available in Appendix II: Project List)

- **Project 1:** Rare Fish in the National Park
- **Project 2:** Smolt Trapping of Salmon and Sea Trout
- **Project 3:** Luss Water Sea Trout Recovery Programme
- **Project 4:** Habitat Carrying Capacity for Salmon - Endrick
- **Project 5:** River Fruin Salmon
- **Project 6:** Forth & Teith Salmon
- **Project 7:** Conservation actions for Arctic charr in Loch Eck

- **Project 8:** Population structuring in the brown trout complex of Loch Lomond
- **Project 14:** Trossachs Water Vole Reintroduction project
- **Project 15:** Water Voles Across the National Park
- **Project 16:** Freshwater mammals Sightings
- **Project 21:** Glen Dochart Wader Project
- **Project 22:** WeBs and BBS surveys
- **Project 24:** Scottish Dragon Finder Amphibian & Reptile Events
- **Project 29:** Endrick and Blane INNS **- Unknown**
- **Project 32:** INNS reporting systems
- **Project 33:** Forth INNS Programme Phase 1 and 2
- **Project 34:** Upper Tay INNS Project
- **Project 35:** Control of INNS in The Great Trossachs Forest
- **Project 36:** Canada Goose Research project
- **Project 37:** National Park Mink Control Forum
- **Project 56:** Management of Brig O Turk Mire
- **Project 62:** Loch Lomond Harms Initiative
- **Project 63:** River Basin Management Planning – Ecological status of water bodies
- **Project 65:** RSPB Loch Lomond Reserve
- **Project 66:** Loch Lomond Long Term Management Plan
- **Project 67:** Management of Carrick Golf Course **- Unknown**
- **Project 73:** Little Leny Meadows Management
- **Project 79:** Whole Farm and Estate Plans
- **Project 87:** Duchray Water Natural Flood Management
- **Project 89:** Tay Salmon in the Classroom
- **Project 91:** Glenfalloch Estate

Trossachs Water Vole Project

Water voles are seriously threatened throughout Britain, mainly due to habitat loss and predation by American mink. They have been absent from most of the National Park since the early 1990s. In 2008, the Trossachs water vole reintroduction project brought back a healthy population to vole friendly watercourses where suitable riparian habitat had been restored in Loch Ard Forest. It was the first water vole reintroduction to take place in Scotland. Careful monitoring of the release sites and the surrounding areas is carried out each year by the Water Vole project officer, National Park and FCS staff and volunteers. The continued presence of water voles has been confirmed at all the release sites since 2011. Evidence has been found that the voles have started to colonise new areas of suitable habitat up to 4 kilometres away.

Alongside this work, mink monitoring is carried out using a network of more than 60 mink rafts. These were established inside and beyond the project area and are checked each fortnight for mink tracks. Targeted trapping is carried out where mink are detected as water vole colonies can be very quickly exterminated by them. The project steering group (consisting of FCS, RZSS, NPA and SNH) are now examining a second phase of the project to maintain the good progress that has been made within the reintroduction areas. This project aims to work closely with any other mink control projects and landowners (such as RSPB Loch Lomond) in the National Park so that a planned approach to mink control can use resources effectively.

12 Lowland & Farmland Programme

Introduction

The transition from highland to lowland is a striking characteristic of the landscape of Loch Lomond & The Trossachs National Park, with the lowland habitats south of the Highland Boundary Fault forming a mosaic of woodlands, farmland (with mainly silage crops and pasture), hedges, stone dykes, parkland and road-side trees and small settlements.

The lowland areas contain wildlife habitats not seen elsewhere in the National Park and therefore make an important contribution to the biodiversity of the area.

One biodiversity priority is maintaining the quality of the farmland and wetland habitats that support the population of rare Greenland white fronted geese as well as pink footed geese which overwinter in the lowland areas. Part of the RSPB Loch Lomond reserve is designated an SPA for roosting Greenland white fronted geese in particular, however the surrounding arable farmland provides essential foraging habitat for geese and so an ecosystem approach is needed to help these species.

Other habitats such as wet grassland, meadows, shelterbelts and hedgerows are essential for farmland bird species which have suffered large declines in numbers due to changes in farming practices. Maintaining these habitats at a landscape scale can help these bird populations to recover in the National Park. The waders project in Glen Dochart (a

collaborative project funded through SRDP) is a good example of practical measures that can be achieved to help our farmland biodiversity.

Achieving the biodiversity vision for the lowland and farmland programme requires adequate financial support and a close alignment between the governments financial support criteria (for example the priorities within the Scotland Rural Development Programme) and our biodiversity priorities.

Lowland & Farmland, in 25 years time

- The upland hill farms and lowland farms are productive and more economically viable while maintaining their biodiversity value and designed landscape features.
- Recreation and tourism development is managed in a way that conserves the lowland landscape and biodiversity special qualities.
- Research into non-native Canada geese and their impacts on crops, amenity grassland or native wildfowl has been carried out. Recommendations following the research results have been implemented.
- In-bye land on the glen floors are actively managed farms providing wide ranging benefits of landscape, natural flood management and good ecological connectivity.
- Suitable areas of wet grassland are retained and managed as habitat for farmland wading birds in several major glens including Glen Fruin, Strathfillan and Glen Dochart, Endrick Marshes and Lake of Menteith areas.
- Farm woodlands, hedgerows and boundary features are being maintained in good condition providing the benefits of retaining distinctive landscape quality and ecological connectivity.
- Diffuse pollution of watercourses has been reduced through good farming practises and other measures being put in place.
- Organic farming and other measures are used widely to promote in-field biodiversity.
- Designed landscapes round southern Loch Lomond, Gartmore, Callander, Ardgartan, Glen Branter and Strath Eachaig are under active management to ensure the long term future of features including hedgerows, avenues of trees, parkland trees, shelter

belt woodlands and stone walls that add habitat diversity and ecological connectivity for the long-term.

Lowland & Farmland Projects

Project Status:

- Project completed or progressed on schedule
- Project behind schedule
- Project not progressed

(More information on project status is available in Appendix II: Project List)

- **Project 10:** Barn Owl monitoring
- **Project 20:** Farmland Wader Management Project
- **Project 21:** Glen Dochart Wader Project
- **Project 25:** Lepidoptera Surveys
- **Project 28:** Butterfly Orchid monitoring
- **Project 36:** Canada Goose research project
- **Project 56:** Management of Brig o' Turk Mire
- **Project 67:** Carrick Golf Course Biodiversity Management Plan **- Unknown**
- **Project 69:** Gardening for Biodiversity
- **Project 73:** Management of Little Leny Meadows
- **Project 74:** Wildflower Seeding project
- **Project 79:** Whole Farm & Estate Plans
- **Project 80:** Designed Landscape Project
- **Project 81:** Habitat Audit Data checks
- **Project 82:** Integrated Habitat Network Model

Whole Estate Plans

The National Park Authority are working with farms and estates on holistic and integrated business planning, with the aim of achieving better economic and environmental sustainability. Existing enterprises are examined for efficiencies and new opportunities for diversified income streams are considered.

These whole estate plans have the potential to deliver benefits across ecosystems at a landscape scale. In relation to biodiversity, the plans identify the key habitats and species on each holding and any significant environmental issues and opportunities and make practical recommendations for future management. Recommendations are costed to assess whether they can viably be incorporated into existing management systems or whether additional grant funding is required, in which case advice is provided on relevant funding sources. In this way, farms and estates are encouraged to consider conservation as a viable part of their business. An early prototype estate plan was used as the basis of an application to the SRDP, securing £220k for managing and creating priority habitats along with associated infrastructure such as new fencing.

The National Park Authority intends to extend this service subject to the findings of a pilot phase in 2012 and 2013.

13 Coastal Marine Programme

Introduction

The National Park in Cowal includes 39 miles of coastline around three sea lochs: Loch Long, Loch Goil and the Holy Loch. This coastal marine environment is a unique ecosystem in the context of the National Park and there are great opportunities for people who live and visit the area to enjoy the wildlife found along the seashore and in marine waters.

This marine environment within the National Park includes the intertidal zone and is extremely rich in biodiversity. The National Park coastline has a range of habitats including rocky shores, cliffs, small areas of salt marsh and mudflats rich in marine invertebrates, which in turn support a range of wading birds. Further offshore there is the chance for visitors to spot other marine wildlife such as harbour seals, porpoises and foraging gannets.

Sustainable management and development of this coastline is an essential objective for Wild Park 2020, balancing the needs of biodiversity with the coastal and marine uses such as recreation, boating, fish farming and tourism developments. Potential threats from climate change such as sea level rise and changes in storminess resulting in enhanced erosion and coastal squeeze must also be considered.

Coastal Marine in 25 years time

- The sea lochs and coastlines are widely recognised for the range of marine species and habitats that they add to the biodiversity of the National Park.
- The National Park coastal areas are promoted as an eco-tourism and sustainable recreation destination.
- The coast and marine habitats are conserved and protected through legislation and active management
- The Loch Fyne and Loch Goil Marine Protected Area is in place. The MPA management plan has been produced and its implementation is underway.
- Invasive non-native marine species have been surveyed and mapped, with surveillance in place for potential new arrivals. Control measures to limit their further spread are implemented as part of a national programme.
- Marine litter prevention and management measures are in place to discourage the deposition of plastic and other waste. Shore-line litter picks are undertaken routinely at beaches and the heads of the lochs to prevent accumulation of unsightly plastic waste.
- The likely effects of sea level rise and storm surge behaviour are better understood and the need to allow space for coastal processes to adapt to these is recognised and planned for.

Coastal Marine Projects

Project Status:

- Project completed or progressed on schedule
- Project behind schedule
- Project not progressed

(More information on project status is available in Appendix II: Project List)

- **Project 32:** INNS reporting systems

- **Project 57:** Marine Wildlife Sightings Scheme
- **Project 58:** Marine Wildlife Leaflet
- **Project 59:** Seasearch
- **Project 60:** Beachwatch
- **Project 61:** Sea Level Rise and Storm Surge Behaviour in the Firth of Clyde

Marine Protected Areas

The Marine (Scotland) Act 2010 includes new powers and duties to designate Marine Protected Areas (MPAs) to protect features of importance to Scotland. Site protection is an integral part of achieving a clean, healthy, safe, productive and biologically diverse marine and coastal environment that meets the long term needs of people and nature. It is a component of the three pillar approach to marine nature conservation advocated by Marine Scotland. The three pillars are species measures, site protection measures and wider seas policies and measures and are discussed in Marine Scotland's Strategy for Marine Nature Conservation in Scotland.

The Upper Loch Fyne and Loch Goil MPA is one of 33 new Scottish Marine Protected Areas (MPAs) proposed by SNH and JNCC. A further 4 MPA search locations remain to be fully assessed. The possible MPAs were selected according to Scottish Government's guidelines and involved 5 national stakeholder workshops to allow stakeholders to influence the development of the suite of MPAs. The Upper Loch Fyne and Loch Goil MPA has been proposed for the mud habitats and associated species that sit on the beds of these deep, sheltered sea lochs. If this sites goes forward as an MPA it will offer this part of the National Park an additional layer of protection to conserve its biodiversity.

14 Species Action Programme

Introduction

The National Park is home for a huge variety of biodiversity, including a number of rare species and habitats which are conservation priorities at a UK and Scottish level. The National Park straddles the Highland Boundary Fault so the area contains both lowland and highland habitats. This variety of habitats means that the National Park supports a wide range of species.

Approximately 184 UK BAP Species of Conservation Concern and 37 UKBAP Priority Species have been identified in the National Park. A full list of these species along with others which have protected status through European and National legislation is available on our website listed under supporting documents.

The National Park has a range of species that are under pressure from land-use changes, climate change, recreational impacts and other issues. Overall there is a greater emphasis within Wild Park 2020 on ecosystems and habitat management, with only a few species being the focus of conservation management. Focusing on having habitats and ecosystems in good health will benefit the largest number of species that are reliant on those habitats. This programme however, lists all the projects that partners have submitted that have a species focus and provides objectives which relate particularly to species action that is required over the next 25 years.

The National Park Partnership Plan policies gives priority on species that are most under threat and highlights a few species in particular for conservation management: wading birds, Greenland white-fronted geese, black grouse, red squirrel, powan, salmon and water vole.

Our Species in 25 years time

- Populations of declining and threatened species are recovering and expanding back into areas previously occupied, thanks to landscape scale habitat management projects and targeted species management work.
- Keystone species are present and actively shaping their environment, adding to the structural diversity and biodiversity present and improving ecosystem structure and function.
- Native fish populations thrive and the threatened spread of alien invasive fish, plants, parasites and diseases has been largely controlled.
- A programme of actions is in place for each species highlighted in the NPPP. Targets for an increase in red squirrel and water vole populations and a decline in grey squirrel and mink populations have been achieved.
- The National Park is used as a model for studies of the feasibility of species reintroduction proposals to fully examine all aspects of them and for piloting any new Scottish reintroduction programmes.
- The number of occupied home ranges of golden eagles is stable or increasing in comparison with the 2013 baseline.

Species Action Projects

Project Status:

- Project completed or progressed on schedule
- Project behind schedule
- Project not progressed

(More information on project status is available in Appendix II: Project List)

- **Project 1:** Rare fish in the National Park
- **Project 2:** Smolt Trapping of Salmon & Sea Trout
- **Project 3:** Luss Water Sea Trout Recovery Programme
- **Project 4:** Habitat Carrying Capacity for Salmon - Endrick
- **Project 5:** River Fruin Salmon
- **Project 6:** Forth & Teith Salmon
- **Project 7:** Conservation actions for Arctic Charr of Loch Eck
- **Project 8:** Population structuring in the brown trout complex of Loch Lomond
- **Project 10:** Barn owl monitoring
- **Project 11:** Bat box monitoring
- **Project 12:** Wild Challenge Red Squirrels
- **Project 13:** Scottish Wildcat Surveys
- **Project 14:** Trossachs Water vole project
- **Project 15:** Water voles across the National Park
- **Project 16:** Freshwater mammals sightings project
- **Project 17:** National Park black grouse monitoring project
- **Project 18:** Habitat enhancement for black grouse
- **Project 19:** Callander black grouse project

- **Project 20:** Farmland Wader Management project
- **Project 21:** Glen Dochart Wader project
- **Project 22:** WeBs and BBS Surveying
- **Project 23:** 'What's Up?'
- **Project 31:** Response to bryophytes to R. ponticum removal
- **Project 38:** Habitat Improvements for priority species
- **Project 45:** Ben Lomond juniper restoration
- **Project 46:** Juniper assessment survey
- **Project 57:** Marine Wildlife Sightings Scheme
- **Project 65:** RSPB Loch Lomond Reserve
- **Project 67:** Management of Carrick Golf Course **- Unknown**
- **Project 83:** Swift Training for NPA Rural Development staff
- **Project 89:** Tay Salmon in the Classroom

Our Wild Challenge – Red Squirrels

One of our flagship Wild Challenge projects within the National Park is our partnership work which supports the conservation of our native red squirrels.

This large partnership project contributes to the aims of the Saving Scotland's Red Squirrels national initiative which aims to reverse the current decline in the distribution and numbers of red squirrels in Scotland. The long-term vision is to secure red squirrel populations in all the areas they currently occupy, together with expansion into some of their former range. The most serious threat to red squirrel populations is the ever expanding population of grey squirrels with the attendant risk of squirrel pox (SQPV), which is fatal to red but not grey squirrels.

There is an area to the west and north of Scotland (approximately along the line of the Highland Boundary Fault) where currently there are no grey squirrels, only populations of our native red squirrels. To the east and south of this line there are populations of red and grey squirrels. This line falls diagonally across the National Park.

Within the Loch Lomond & The Trossachs National Park the project will seek to protect identified red squirrel populations and other existing grey-free areas by undertaking grey squirrel control to reduce the risk posed to the major grey-free populations of red squirrels.

In the past three years, a partnership of the Scottish Wildlife Trust, the National Park Authority, land managers, private estates, volunteers and Forestry Commission employees have worked together to establish long term survey and monitoring of both red and grey squirrel populations and a strategy for targeted grey squirrel control which is primarily funded through the Rural Priorities element of the Scottish Rural Development Plan (SRDP). The continuation of this project will rely upon the sustained contribution of these partners over the following years.

Our commitment is to work closely together to continue with this flagship project so that the woodlands and forests can support healthy populations of our native red squirrels and further reduce the threat posed by the grey squirrel populations. Our ambition is to push back the grey squirrel population to the south and eastern boundaries of the National Park and to promote it as a place where visitors can experience our much-loved red squirrels.

15 Invasive Non-Native Species & Biosecurity Programme

Introduction

Invasive non-native species (INNS) are a threat to native biodiversity and cost a large amount of money to deal with once they have established themselves within an ecosystem. Biosecurity measures which help prevent INNS becoming established and protocols to deal with new INNS and pathogens (such as plant health diseases) are crucial alongside measures to control INNS that are already present in the National Park.

The National Park has several invasive non-native species (both plants and animals) which are having an adverse impact on our native biodiversity. INNS that are being targeted for control include common Rhododendron (Rhododendron ponticum), Japanese knotweed, Himalayan balsam, giant hogweed and American skunk cabbage, grey squirrel and North American mink. It is essential that a strategic approach is taken to control these species in order for their populations to be reduced in the long term. The following objectives outline this strategic approach.

INNS & Biosecurity in 25 years time

- A suite of biosecurity measures is well established and operating. These measures focus on prevention, early detection and treatment. They include:
- The establishment of new invasive non-native species and pathogens has been prevented through the following measures:
- Systems and facilities used routinely for disinfection of fishing gear and boats prior to their use in the Park after use abroad.
- Angling clubs, bailiffs, police and NP Rangers keep watch for any use of live bait fish (an illegal act and known vector for the spread of ruffe and other non-native fish)
- Systems and procedures are used routinely by construction workers, foresters, bailiffs, rangers and other outdoor professionals for cleaning vehicles, equipment and other kit before moving between vulnerable locations.
- Awareness campaigns discourage the keeping or planting of known invasive species in situations where there is a risk of them escaping, spreading or seeding into the wild.

- Any INNS or pathogens that do arrive are detected early on and effective action is taken to remove them through the following measures:
- A register of potential threat species is in place and updated regularly.
- Surveillance programmes are implemented to check for the arrival of known imminent threats.
- Rapid response measures are in place for removal and control of new colonies or outbreaks, including training and advice for land managers.
- Existing INNS have been markedly reduced in extent and their damaging impact on the biodiversity of the National Park has been greatly reduced.
- Management to eradicate Rhododendron ponticum, from 50% of the National Forest Estate within the National Park has been put in place and clearance programmes are underway and on schedule for completion. Clearance programmes are underway along the Trunk Road corridor on West Loch Lomond and round Aberfoyle to prevent spread into SAC woodlands.
- The assemblage of invasive riparian plants (including Japanese knotweed, giant hogweed, Himalayan balsam and North American skunk cabbage) has been completely removed from Strathfillan/ Glen Dochart and the Loch Earn catchment.
- Control programmes are underway to remove these plants from a) the Teith and upper Forth catchments from the headwaters to downstream of the Park Boundary, b) the headwaters of the Endrick and Blane to the mouth of the Endrick and c) the whole of the Loch Eck/River Eachaig catchment
- A North American mink control programme is in place covering all of the Tay, Forth/Teith catchments and the Loch Lomond basin
- A line of control is being maintained to exclude grey squirrels from all areas north of a line of control extending from Helensburgh's north edge to Balloch, Drymen, Callander and Comrie. This includes monitoring to detect grey squirrels north of the line and control for several km on either side. As a consequence, they are largely absent from the whole of the National Park and Rosneath and red squirrels are a common sight across the area including round settlements such as Balloch and Drymen.
- On the basis of research results, the Canada goose population is monitored and if necessary controlled to levels where it has no significant impact on competing forage for overwintering visiting goose populations.

INNS Projects

Project Status:

🟢 Project completed or progressed on schedule
🟡 Project behind schedule
🔴 Project not progressed

(More information on project status is available in Appendix II: Project List)

- **Project 6:** Forth & Teith Salmon 🔴
- **Project 12:** Wild Challenge Red Squirrels 🟢
- **Project 14:** Trossachs water vole project 🟢

- **Project 15:** Water voles across the National Park
- **Project 16:** Freshwater mammals sightings project
- **Project 29:** Endrick/Blane INNS project **- Unknown**
- **Project 30:** Rhododendron Control
- **Project 31:** Response of bryophytes to R. ponticum removal
- **Project 32:** INNS reporting systems
- **Project 33:** Forth INNS project Phase 1 and 2
- **Project 34:** Upper Tay INNS project
- **Project 35:** Control of INNS – The Great Trossachs Forest
- **Project 36:** Canada Goose research project
- **Project 37:** National Park Mink Control Forum
- **Project 58:** Marine Wildlife leaflet
- **Project 64:** Management of Whinney Hill
- **Project 67:** Carrick Golf Course Management **- Unknown**
- **Project 80:** Designed Landscape Project
- **Project 91:** Glenfalloch Estate

Our Wild Challenge – Invasive Non-Native Species

Among the range of non-native species to be found in the National Park, growing along some of our river banks and lochs are four invasive plants (INNS):Japanese knotweed, American skunk cabbage, giant hogweed, and Himalayan balsam which this Wild Challenge seeks to address. These particular INNS pose a threat to our water environment. In the Forth area, volunteers are working to control these plants as part of a large Forth INNS Project (project 23.33)

Working in partnership with landowners, fishery trusts, statutory agencies and volunteers, our Wild Challenge is to reduce the extent and damaging impact of these species, taking a strategic approach to their management. Several projects within this programme focus on this issue with different partners taking a lead in different river catchments.

One INNS project is being carried out in the Upper Tay Catchment, led by the National Park Authority. The project aims to completely eradicate the four invasive non-native plant species from the entire catchment of the River Tay within the National Park. The project area includes the areas of Strathfillan, Glen Dochart, Glen Ogle and Loch Earn.

Now in its second year over 64 separate stands of Japanese knotweed and giant hogweed have been chemically treated using knapsack sprayers and hand held stem injectors, as well as hand pulling Himalayan balsam along the shores of Loch Earn and St Fillans. The National Park Authority is working closely with the local community, with over 25 different landowners now involved in the project, ranging from several larger estates to individual house holders, local businesses and local community trusts.

As part of the project 7 volunteers have been trained in NPTC Level 2 award in the safe use of pesticides and have now clocked up over 120 hours of volunteer time eradicating these invasive plants, as well as carrying out surveys of the area to identify where these plants are. There have already seen some very positive results from last year's efforts, however, many of the sites targeted will need to be treated several times over the next 3 to 5 years before complete eradication will be achieved.

A second INNS project that is being developed is American mink control on a catchment scale. During 2013, alongside the on-going programme of invasive plant eradication, a series of mink survey rafts are being deployed across the project area to help build a detailed picture of the presence of American mink in the upper Tay catchment. This is hoped to be followed in the future by a targeted programme of trapping in areas where presence of mink have been recorded.

Our challenge is to build on these projects and to expand the area covered by effective control programmes to other major river catchments in the National Park.

16 Geodiversity Programme

Introduction

The diversity of the National Park's landscape derives from the effects of the Highland Boundary Fault which divides the Park into two distinct regions with vastly differing rocks, soil types and topography.

The geology of the area, climatic conditions and land use practices have resulted in a strong interaction of forests, water, mountains, coastline and vegetation that combine to form some of the finest scenery in Scotland. From mountains to Scottish sea lochs, the geodiversity of the National Park is intrinsically linked with its biodiversity. The landform is still being shaped by natural processes, for example landslides and coastal and river processes.

Geodiversity in 25 years time

- Soils which support ecosystem services are managed in a sustainable way to remain fit for current and future use.
- Existing special sites for earth science including SSSIs, GCR and Local Geodiversity sites are all safeguarded. A programme of enhancement is in place at selected sites to improve access for study or visitor interest.
- The National Park is well covered by recent survey and mapping programmes for earth science features and the information is widely available.
- Research into earth science features and processes including landslides, glacial features, and mineral formation and deposition is promoted and supported when opportunities arise.
- Education and interpretation measures are in place raising understanding and appreciation of the relevance of geology and geomorphology to the National Park as a location. The history of the major geological events including the Caledonian Orogeny, continental drift, the Highland Boundary Fault and glaciations are all addressed, as are landslides, river morphology, the relevance of local stone for vernacular architecture and the history of mining for minerals.
- Geodiversity interpretation builds on the potential identified in the British Geological Society report:- Geodiversity of the Loch Lomond and Trossachs National Park: Statement of Significance and Identification of Opportunities 2008, K M Good

enough, A Finlayson and H F Barron which identifies particular sites worthy of interpretation and potential interpretation projects such as 'rock routes' and interpretive panels.

- Likely coastal changes are better understood; and the need to allow space for natural processes, such as river flooding and coastal change is widely recognised and taken into account in management decisions.
- Restoration of bog habitats contributes to the prevention of peat loss and the promotion of active peat formation ecosystems.

Geodiversity Projects

Project Status:

- Project completed or progressed on schedule
- Project behind schedule
- Project not progressed

(More information on project status is available in Appendix II: Project List)

- **Project 50:** NTS Blanket Bog Restoration
- **Project 51:** Peatland Restoration
- **Project 61:** Sea Level Rise & Storm Surge Behaviour in the Firth of Clyde
- **Project 75:** Callander Geodiversity Trail Booklet
- **Project 76:** Ben Vane Geological Site Management
- **Project 77:** Balmaha Visitor Centre
- **Project 78:** Moorland Indicators of Climate Change Initiative
- **Project 88:** Geology and Landscape of Loch Lomond & The Trossachs **- Unknown**

17 The Scottish Biodiversity Duty

The Scottish Biodiversity Duty in the Nature Conservation (Scotland) Act 2004 gives all public bodies and office- holders the duty to further the conservation of biodiversity so far as is consistent with the proper exercise of their functions.

Leading and co-coordinating the production and implementation of Wild Park 2020, the second edition of the National Park Biodiversity Action Plan is a discrete action for the National Park Authority in its Corporate Plan. However, biodiversity is integral to many other parts of its work and is central to its key theme of conservation management. In recognition of the need for an integrated approach, the Park Authority has produced the following checklist of how it will implement the Scottish Biodiversity Duty as part of its functions.

The National Park Authority Biodiversity Duty Checklist:

NPA Function	Our Commitments
Conservation	Lead on the production of the Wild Park 2020 and facilitate and coordinate its delivery, monitoring and reporting.
	Advocate for resources and national strategy development which align with the conservation objectives of the National Park to enable effective biodiversity delivery on our priority species and habitats.
	Promote local species recording and monitoring to increase knowledge and understanding of the status of priority species, focusing in particular on those which require conservation management to safeguard their populations.
	Undertake wildlife surveys as part of key species conservation projects and national recording schemes
	Promote biodiversity data sharing by partners to aid land management decisions
	Improve the existing biodiversity information base to give greater confidence in its use for land management decisions and for identifying conservation priorities.
	Develop use of the Integrated Habitat Network model to aid land management planning to enhance habitat connectivity and protect core areas of habitat
	Provide advice on woodland and forestry management plans and proposals to safeguard and enhance biodiversity.
	Promote biodiversity and conservation as a specific opportunity for volunteer involvement. Engage with community partnerships and support the development of their biodiversity initiatives and work in partnership with other conservation organisations such as RSPB Loch Lomond.
	Lead on biodiversity initiatives which bring together different stakeholders to address objectives identified in Wild Park 2020
Visitor Experience	Promote responsible behaviour in the outdoors and the Scottish Outdoor Access Code.

	Promote awareness of our biodiversity through the Learning Development initiatives
	Promote people engagement through Citizen Science initiatives and the John Muir Award
	Implement the Loch Lomond Byelaws regulating recreation and navigation
	Help safeguard species and habitats from recreational impacts through visitor management partnership initiatives such as Operation Ironworks
	Integrate biodiversity measures as part of the management and maintenance of National Park Authority property
	Implement the Inchcailloch Reserve Management Plan
	Integrate biodiversity management into plans for high pressure visitor management zones e.g. The 5 Lochs Plan
	Develop new paths and infrastructure in ways that safeguard and enhance biodiversity
	Promote green transport solutions which reduce the carbon footprint of visitors to the National Park
	Promote public awareness of the National Park's biodiversity through events, publications and campaigns
	Monitor the impacts of visitors on the ecology of the Loch Lomond islands habitats and address identified problems in a visitor management plan for the islands
Rural Development	Provide supplementary planning guidance on renewable energy developments and environmental sustainability in new developments
	Include Local Development Plan (LDP) policies which protect designated sites and UKBAP habitats and species
	Include provision within the LDP policies which safeguards carbon storing habitats (e.g. Deep peat)
	Include LDP policies which protect water bodies, flood plains and coastal areas
	Input to the Flood Risk Management Plans and Strategies as a stakeholder of the Local Advisory Groups (LAGs) which are led by SEPA.
	Promote the continued use of sustainability checklists as part of planning applications
	Incorporate opportunities for biodiversity enhancement as part of development management and continue to provide development advice on planning and biodiversity.
	Provide ecological specialist support and advice to the planning team
	Undertake Habitats Regulation Appraisals (HRA) to safeguard European designated sites and their features
	Undertake Environmental Impact Assessment (EIA) screening against relevant development proposals and assess Environmental Statements
	Request and assess the relevant environmental information supplied by developers as part of their proposals
	Set relevant planning consent conditions to safeguard biodiversity interests

Other	Implement the Environmental Management Strategy (EMS) to ensure the authority manages its own property and operations with due attention to biodiversity and other environmental considerations,

18 Our Approach

Working at the Ecosystem Level

An ecosystem is a community of living organisms (plants, animals, fungi and microbes) in conjunction with the non-living components of their environment (such as air, water, sediment and rock) interacting as a system. An ecosystem can be defined as the life cycles of plants and animals and how these relate to each other and their environment. Understanding how these communities of plants and animals function together and focusing biodiversity management at an ecosystem level can help towards sustainable and effective use of resources.

Our programmes and projects have taken account of changes in approach which are being encouraged at a national level, such as those outlined in the '2020 Challenge for Scotland's Biodiversity' which promotes an 'ecosystem approach' to working with nature for a healthy environment for people and nature. An ecosystem approach is a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use of those resources. SNH provide more information on the key principles which guide this approach.

Taking account of the 'ecosystem services' is one part of an ecosystem approach. Ecosystem services are the benefits which biodiversity can provide for people and society e.g. food and water, regulating processes such climate change, cultural uses such as recreation and base processes such as soil formation.

We have sought to focus on the National Park ecosystems and landscape scale projects within the programmes, and to show how the combined efforts of smaller projects can have an impact for particular ecosystems across the National Park. Displaying these projects on a geographical basis using GIS tools fosters a greater understanding and joint working between partners in the same field (for example invasive species control projects) and helps to focus future effort. We have also listed projects against each of the programmes that it relates to. An example of this ecosystem approach is the Duchray Water Natural Flood Management project which looks at addressing flooding issue within the Duchray through various means including woodland and wetland management. This project is therefore listed both under the lochs, rivers and ponds programme and the woodlands and forest programme.

Wild Park 2020 contains programmes on each of the main ecosystems in the National Park. There is also a programme on Invasive Non-Native Species (INNS) and Biosecurity which looks at the challenges presented by INNS. Catchment wide projects within this programme show how this landscape scale approach can work to address the threats posed by INNS to our biodiversity. A further programme covers the geodiversity that underpins the biodiversity of the Park. This programme looks at the rocks, landforms, sediments and soils of the Park and the processes (e.g. coastal and river processes) that form and alter them.

Within each of the programmes in Wild Park 2020, the plan sets out what we aim to achieve over the next 25 years. These objectives will help to focus effort and resources over the period of the plan and beyond. Setting longer term goals at an ecosystem level recognises

that some changes, such as establishing new woodlands, can take a while to achieve. Some of these objectives may not have any immediate projects to help deliver them, however Wild Park 2020 will help to prioritise future resources in these areas and maintain the commitment towards those long term goals.

Our Natural Capital

Loch Lomond & The Trossachs National Park has the potential to be an even greater generator for growth in Scotland. The scenery and natural heritage attracts almost 7 million visitors each year and the area is an asset for Scotland's tourism businesses. Alongside this, other services that the ecosystems provide include fresh drinking water, renewable energy and timber resources. It is crucial that this natural capital is recognised, conserved and enhanced for future generations and that the ecosystems are managed and used sustainably by people who live and work in the Park.

During the lifespan of Wild Park 2020, natural capital projects and ecosystem services projects will be developed to build our understanding and recognition of the value of our ecosystems and to develop approaches which take account of these natural assets. There is a commitment within the National Park Partnership Plan to develop an approach which takes account of the value of natural resources and a recognition that there needs to be greater understanding of the role that natural resources can play in delivering economic growth (forestry, agriculture, tourism, fishing, countryside sports, recreation) and the need to conserve these resources through effective management of resources to support economic growth and society over the long term.

Our Protected Areas

Protecting and enhancing our biodiversity requires a comprehensive approach involving the protection of statutory nature conservation designated areas and the wider ecosystems around them.

The National Park has a rich natural heritage and has a number of European and National designated areas. The European Sites include eight Special Areas of Conservation (SACs) and two Special Protection Areas (SPAs). There are also two National Nature Reserves, a RAMSAR site, 57 Sites of Special Scientific Interest (SSSIs) and a possible Marine Protected Area (pMPA). Statutory Designation as a mechanism limits or prevents damage to the conservation interest, however active management is still needed to maintain and enhance the biodiversity value of these sites.

One of the government's targets under the National Performance Framework is to 'improve the condition of protected nature sites' across the country. European sites and SSSIs represent the very best of Scotland's landscapes, plants and animals, rocks, fossils and landforms. Together they form a network of the best natural features throughout Scotland and support a wider network across Great Britain and the European Union.

Scottish Natural Heritage has the main responsibility for delivering the National Indicator for SSSIs and sets priorities and direction, and provides financial support to land owners and others to secure improvement in the condition of habitat features and for priority species. Some of this support will be delivered through Rural Development Contracts under the Scotland Rural Development Programme.

This management is important not only for the designated sites but the other biodiversity rich areas which are around them and which form an important habitat network across the National Park. The designated sites highlight some of the very special areas within the National Park, however management of this wider habitat network is essential if the sites are to function as part of a larger ecosystem. Managing the designated sites also requires an understanding of the dynamics that influence each site and its surrounding area in order to achieve favourable condition.

A key goal for Wild Park 2020 is to take an ecosystem approach to the management of designated sites and protect these habitat networks to sustain the habitats and species across the National Park.

Building on the First Edition

The final report for the first edition National Park Biodiversity Action Plan (NPBAP) is available on the National Park Authority website. This report reviewed the successes and the lessons learned with the aim that Wild Park 2020 can adapt and improve the management of the NPBAP process.

Features of the first edition:

- The first edition included programmes on climate change, biodiversity duty, biodiversity audit, habitats and ecosystems (lochs, rivers and ponds; coastal marine; farmland; woodland and forest; moorland and mountains; built environment) , species

(red squirrel; water vole; black grouse; capercaillie; powan and lampreys; fresh water pearl mussel)and invasive species audit and action.

- There were a total of 133 projects in the first edition, of which 95 were completed or progressed, 15 were progressed but were behind schedule at the end of the first edition period and 23 had not been progressed or were stopped.
- There were 28 aspirational (unfunded) projects which were included at the start of the period by the end of first edition reporting period, 21 of these projects had been resourced and progressed.

Lessons Learned From the First Edition:

- The NPBAP working group (a group consisting of partner organisations involved in delivering the NPBAP) reviewed the process and focused on the strengths and weaknesses of the NPBAP and the approach which they wished to see adopted for this second edition. The conclusions and proposals included:
- The lifespan of the second edition should tie in with the '2020 Challenge for Scotland's Biodiversity' (the updated Scottish Biodiversity Strategy).
- The approach and direction of the second edition should seek to align with the '2020 Challenge for Scotland's Biodiversity'.
- In 2012/2013 partners would form a working group and would define and propose projects. Wider stakeholders would be engaged in this process through direct contact and a number of topic workshops.
- There would be public consultation on the draft in 2013 with the aim of producing the final document by the end of 2013.
- A mid-term review of the plan should be held in 2017 (in line with the NPPP cycle, the current NPPP runs from 2012 – 2017), which will include updates and revisions to projects.
- There will continue to be a project orientated approach and programmes will include some projects which are aspirational alongside those which have a firm commitment.
- Projects which target landowner engagement should be included and there should be a greater partnership engagement with landowners on a project basis.
- The plan will include a section on Geodiversity and an Invasive Non-Native Species strategy and associated projects.
- There should be a focus on a few large catchment landscape scale projects alongside smaller habitat and species projects.
- There should be a celebratory event and accompanying publicity when launching the second edition in order to raise awareness of the plan and its projects.
- The second edition should have a fresh look (and title) which reaches new audiences, particularly tourism businesses.

Working in Partnership

Wild Park 2020 aims to build on the successful delivery of the biodiversity projects in the first edition which was the result of the enthusiastic participation and partnership working of public agencies, voluntary organisations and land owner representative groups. As most of the National Park is privately owned, the partnership work with landowners in particular

helped to deliver valuable contributions to biodiversity management. We will continue with this successful partnership approach in the second edition.

The National Park Authority is responsible for leading and coordinating the production and implementation of Wild Park 2020 and this task is a priority in the NPPP. The production of this document could not have happened without the contribution of key partners throughout this period. The successful implementation of Wild Park 2020 will depend on the continued enthusiastic participation of the wide range of partners who helped produce it.

The Delivery and Monitoring Group will have a role in pushing forward the implementation of the confirmed actions, for developing the provisional list of projects and to report on progress. As part of monitoring Wild Park 2020, the Delivery and Monitoring Group will undertake a mid-term update of the programmes in 2017 and an end of plan update in 2020.

The Delivery and Monitoring Group is made up of the following organisations:

- Loch Lomond & The Trossachs National Park Authority (Chair)
- Scottish Natural Heritage (SNH)
- Forestry Commission Scotland (FCS)
- Scottish Environment Protection Agency (SEPA)
- RSPB Scotland

Alongside our Wild Park 2020 partners who are delivering projects, this document has relevance to a much wider group of stakeholders, including individuals with specialist knowledge such as botanists, communities, landowners and visitors to the National Park.

Engaging and involving these wider stakeholders is essential for achieving the vision outcomes outlined in the programmes above. It is recognised that a targeted approach to engagement is needed, which recognises the different audiences and the different biodiversity messages we are trying to market.

A campaign plan for reaching these audiences will be rolled out over the plan period. As part of this campaign plan, which will begin with a launch event in 2014, there will be an engaging promotional publication to complement the on-line document along with the development of Wild Park 2020 webpages, summer events and media campaigns on the Wild Challenges. These different communication mechanisms will seek to promote key biodiversity messages relevant to the tourism and business sector with the aim of fostering wider stakeholder engagement.

National Park Board Endorsement

A steering group of National Park board members have commented at various stages during the production of this document. A draft version of the document was approved by the National Park Board for public consultation and the final version has been amended in light of responses received through that consultation. This final version has been adopted by the National Park Board in March 2014.

Public Consultation

Consultation of the draft document took place over a 7 week period from 23rd September 2013 to 15th November 2013. Lengthy discussions and informal consultation which involved 52 organisations had been carried out prior to this public consultation and this had helped to produce the draft document. A total of 19 responses were received to the formal consultation from organisations or individuals. There were in total 390 unique visits to the Wild Park 2020 webpage on the National Park website during the consultation period. Of these visits, 216 individuals signed the Wild Park 2020 Terms and Conditions pages and thereby visited the draft document. Their responses have been taken into account in shaping this final version. A full consultation report is available on the Wild Park 2020 webpages.

Strategic Environment Assessment (SEA)

An SEA screening report was submitted to the SEA Gateway and was assessed by the consultee agencies (SNH, SEPA and Historic Scotland). They agreed with the screening report conclusions that the second edition of the NPBAP 'Wild Park 2020' contained only minor modifications to the first edition plan which was subject to SEA. Any new or additional effects are likely to be Minor Positive Effects and these minor modifications and the programmes are unlikely to have significant environmental effects.

The National Park Authority has concluded that a full SEA of Wild Park 2020 is not required and has posted the SEA determination on the NPA website.

Habitats Regulation Appraisal (HRA)

The requirement for a Habitats Regulations Appraisal (HRA) of Wild Park 2020 has been considered in relation to the requirements of the Habitats Regulations 1994.

An HRA has not been undertaken. The general policy statements in Wild Park 2020 such as long-term vision and programme descriptions are all elements that are screened out in a HRA process. The outlines of the delivery projects are not sufficiently detailed for meaningful HRAs to be carried out on them.

Our conclusion is that an HRA of Wild Park 2020 is not necessary and that individual projects will need to be considered against the Regulations in their own right.

A fuller record of the consideration is included in the Appendix VI.

19 Biodiversity Strategy and Policy Context

Overview

A brief overview of the strategy and policy context that guides Wild Park 2020 is set out below:

The National Park

The National Parks (Scotland) Act 2000 provides the basis for National Parks in Scotland and sets out four statutory aims. The high biodiversity value of the area was one of the main reasons for Loch Lomond & The Trossachs being designated as a National Park. Conserving its biodiversity is essential for the delivery of the first aim of the Park, which is 'to conserve and enhance the natural and cultural heritage'. Under the Act, if a conflict arises between achieving conservation and enhancement of the natural and cultural heritage and the other aims then the Authority must give greater weight to the first aim. The biodiversity health of the Park will be a key test of the achievement of fully sustainable economic and social development of the area and is critical to the public's enjoyment of the National Park.

The National Park Partnership Plan 2012 - 2017

The National Park Partnership Plan (NPPP) provides the main policy context for Wild Park 2020 and provides guidance for all organisations that operate in the National Park on biodiversity issues.

- The NPPP Conservation Challenges and Outcomes Appendix
- NPPP Conservation Policies Appendix
- NPPP Conservation Priorities Appendix

The National Park Local Development Plan 2010 – 2015

The National Park Local Development Plan aims to protect and enhance biodiversity by integrating environmental considerations into the design of development at an early stage. There are 31 Local plan policies which seek to protect the National Park's biodiversity.

- Local Plan Environmental Policies Appendix

The Scottish Biodiversity Strategy

The Scottish Biodiversity Strategy was updated in 2012 to reflect the new targets towards conserving biodiversity in the period leading up to 2020. 'The 2020 Challenge for Scotland's Biodiversity' sets out the direction of travel for biodiversity management in response to the EU's Biodiversity Strategy for 2020 and to the Aichi targets set by the United Nations Convention on Biological Diversity at Nagoya in Japan in 2010. These international targets set out to halt the loss of biodiversity and to restore the essential services that a healthy natural environment provides.

UK Biodiversity Framework

The UK Post-2010 Biodiversity Framework has succeeded the UK Biodiversity Action Plan (UK BAP). Much of the work previously carried out under the UK BAP is now focused at a country level. All UK BAP species found in Scotland are shown on the Scottish Biodiversity List.

Climate Change Act

The Climate Change Act sets in statute the Government Economic Strategy target to reduce Scotland's emissions of greenhouse gases by 80% by 2050, with an interim target of 42% by 2020.

Wildlife and Natural Environment (Scotland) Act 2011

The 'WANE' Act includes new legislation in relation to vicarious liability, the close season for hares, the management of deer, snaring law, badgers, SSSI sites and Muirburn. Public bodies also have a new duty to report on how they comply with their biodiversity duty outlined in the Nature Conservation (Scotland) Act 2004.

Nature Conservation (Scotland) Act 2004

The Act places a statutory duty on all public bodies to further the conservation of biodiversity. The duty is aimed at connecting people and their environment and managing biodiversity in the wider environment, not just protecting specific sites or species.

Marine (Scotland) Act 2010

The Marine (Scotland) Act provides a framework which will help balance competing demands on Scotland's seas. It introduces a duty to protect and enhance the marine environment and includes measures to help boost economic investment and growth in areas such as marine renewables.

Water Environment and Water Services (Scotland) Act 2003 (WEWS Act)

The Water Framework Directive (WFD) is a wide ranging piece of European legislation which became law in Scotland at the end of 2003 (the WEWS Act). The WFD establishes a new legal framework for protection, improvement and sustainable use of surface waters, transitional waters, coastal waters and groundwaters across Europe.

Under the Directive, water body status is determined not only by the chemical condition of the water but also by morphology and the health of the animals and plants that live in it. The WFD looks at the water environment on a larger river basin scale, rather than at rivers or lochs individually. There are two River Basin districts in Scotland (the Scotland RBD and the Solway-Tweed RBD). River Basin Management Plans (which are a product of the WFD) sets out objectives for improving the quality of this water environment.

Floods Directive

The Floods Directive places a duty on government departments to produce Preliminary Flood Risk Assessments and maps. These will be the basis for Flood Risk Management Plans which will help to focus prevention, protection and preparedness. These plans are to be completed by 2015.

Scotland Rural Development Programme

Funding opportunities identified in the 2014 – 2020 programmes will have a significant impact on the delivery of the Wild Park 2020 projects. Options in the new scheme to support habitat creation and enhancement and species conservation will be an important source of funding for implementing actions in this plan.

Scottish Forestry Strategy

The core principles of the Scottish Forestry Strategy are based on sustainable development and social inclusion, achieved through a culture of ‘forestry for and with people’ and delivered in well-managed forests and woodlands that integrate effectively with other land uses and businesses.

Scottish Land Use Strategy

The Scottish Land Use Strategy is a strategic framework bringing together proposals for getting the best from Scotland’s land resources. Public sector bodies are expected to take a leading role by utilising its principles in managing their own land; developing and implementing plans and strategies; and promoting partnership working.

Scottish Soil Framework 2009

The Scottish Soil Framework 2009 is a 5 year Scottish Government strategy which gives policy direction and which will be reviewed in 2014. It describes key pressures on soils, particularly climate change, relevant policies to combat those threats, and identifies the future focus for soil protection, key soil outcomes, and actions across a range of sectors.

Scotland's Geodiversity Charter

The Geodiversity Charter sets out why geodiversity is important, and presents a vision that geodiversity is recognised as an integral and vital part of our environment, economy, heritage and future sustainability to be safeguarded for existing and future generations in Scotland. The Charter includes recommended actions for different stakeholders and a range of case studies.

National Performance Framework Outcomes

Wild Park 2020 will help deliver the Scottish Government Outcomes as detailed in the National Park Partnership Plan.

Scotland's Wild Deer: A National Approach

This is an approach to the sustainable management of wild deer. Developed by land managers and public bodies, it guides actions on the ground and informs strategic thinking, amongst other principles, to manage deer as an integral and essential part of biodiversity.

UKBAP Priority Habitats

The table below shows the UKBAP priority habitats that are present within the National Park. All UK BAP species found in Scotland are shown on the Scottish Biodiversity List. There are many hundreds of species (plants, mammals, fish, birds, insects, etc) which are protected through wildlife legislation and/or which are regarded as conservation priorities at a UK level living within the National Park. A simple spreadsheet showing the ones within the National Park which have known records on the NBN Gateway can be found on our website.

UKBAP Priority Habitat
UKBAP Priority Habitat
Upland oakwood
Upland mixed ashwood
Upland birch woods
Lowland mixed deciduous woodlands
Wet woodlands
Wood pastures and parkland
Native pine woodlands
Hedgerows
Lowland meadows
Lowland dry acid grassland
Upland hay meadows
Lowland & upland calcareous grassland
Blanket bog
Montane heaths and willow scrub
Upland flushes, fens and swamp
Inland rock outcrops and scree
Rivers
Oligotrophic and dystrophic Lakes
Mesotrophic Lakes

20 Reporting on Wild Park 2020

Reporting Cycle

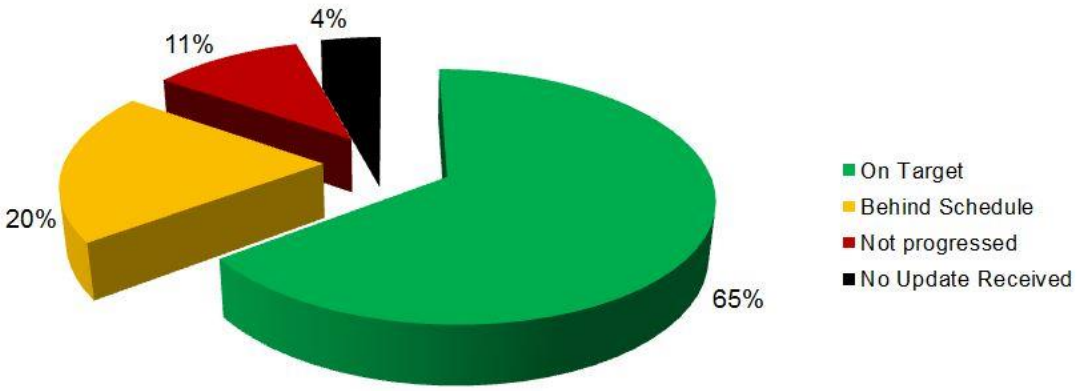
The Delivery and Monitoring Group will undertake a mid-term review in 2017 of progress overall on the projects and programmes in Wild Park 2020. A brief project status update will be provided by partners prior to this review and this update will be reported online in the relevant project table, under 'project status'. The mid-term review will allow for new projects to be added, any obsolete proposals removed and an update on live projects to be provided. It will also help to focus on the main challenges which need to be addressed in the remaining plan period. Similarly, a project status update will be provided in the year prior to the final report in 2020 to aid forward planning on the biodiversity objectives beyond 2020.

Wild Park 2020 reports showing overall progress on the programmes and projects will be made available on the National Park Authority website. The timing of the reporting cycle is proposed as follows:

- Launch of Wild Park 2020: 2014
- Midterm Review: 2017
- Final Report: 2020

The mid-term review in 2017 of Wild Park 2020 will be timely in relation to the production of the next edition of the National Park Partnership Plan and will help to provide background information on the biodiversity objectives which will form part of this higher level plan.

Project Progress



The chart above shows the percentage of projects progressed by October 2015 according to the ‘traffic lights’ . Looking at the collated progression of projects, 65% of projects are on target, of which 8 have been completed. 20% of projects are behind schedule and 11% have not progressed.

Indicators of Success

Alongside the monitoring of progress being made on the projects contained in WILD PARK 2020 the reporting cycle will measure progress on the direction of travel on delivering the

programme's 25 year aspirations and achieving the overall long term vision for the National Park's biodiversity.

In order to measure this direction of travel against these long term objectives, the Delivery and Monitoring Group have produced a set of Indicators for Success derived from both national and regional datasets. The aim in producing this set of indicators was to at least two indicators for each programme within Wild Park 2020 which would show the state of biodiversity within the National Park. This would complement the reports on project delivery and would show whether progress on the programme objectives is being made. The indicators are made up of three types: indicators within the National Park Partnership Plan, indicators from datasets which are available for the National Park such as data on black grouse populations and indicators which are being used at a national level to measure progress on the Scottish Biodiversity Strategy and which could potentially be selectively shown at a regional level. Confirmation on the suitability of using these Scottish Biodiversity Indicators at a regional level is still being sought.

The National Park Partnership Plan has set out a number of indicators of success in order to establish whether the NPPP as a whole is having a positive effect on the National Park. To ensure that it does, the Park Authority and its partners will track and report on key indicators in the NPPP. These indicators will provide regular updates during the lifespan of the plan and will be on the Authority's website so that viewers can track progress at a glance. A number of these indicators are of relevance to Wild Park 2020 and are shown in the table below.

Wild Park 2020 Indicators of Success

	WP2020 Indicators (# means it is still to be confirmed whether the data can be shown selectively for the LLTTNP) (*same indicator used at national level)	Climate Change	People & Nature	Woodlands & Forests	Mountain & Moorland	Lochs River & Ponds	Lowland & Farmland	Coastal Marine	Species Action	INNS	Geodiversity	Data provided by:
1	% of designated site features in favourable condition (features include notified species and notified habitats)*			✓	✓	✓	✓	✓	✓		✓	SNH
2	No. of hectares of restored peatland	✓			✓							NPA
3	% of waterbodies achieving good ecological status*					✓						SEPA
4	% of land under woodland	✓		✓								FCS
5	% of land under agri-environment schemes						✓					SG/NPA
6	Number of groups undertaking outdoor learning in the National Park		✓								✓	NPA
7	Scotland's People and Nature Survey - Characteristics of National Parks (NP3)		✓									SNH
8	No. Of Volunteer hours engaged in biodiversity in LLTTNP		✓									NPA
9	No. Of visitors involved in Biodiversity & Geodiversity events in LLTTNP		✓								✓	NPA
10	No. Of John Muir Awards in LLTTNP		✓									JMT
11	Wild Challenge - Mountain Bog Project Outputs				✓							NPA
12	Wild Challenge - Woodland Network Collective Project Outputs			✓								FCS
13	Wild Challenge - Central Scotland Black Grouse Study Group Data Project								✓			CSBGSG
14	Wild Challenge - Saving Scotland's Red Squirrel Data & Project Outputs								✓			SSRS
15	Wild Challenge - INNS Project Outputs									✓		NPA/RAFTS
16	Habitat quality and condition - Habitat Extent mapped by Eunis Category			✓	✓	✓	✓	✓				SNH
17	Extent of Semi-natural habitat - High Nature Value Farming Characterisation #						✓					SNH
18	Soil Carbon #	✓										JHI
19	Fragmentation - Indices of habitat connectivity			✓	✓	✓	✓					SNH
20	Carbon Sequestration #	✓										JHI
21	Extent of Selective INNS #									✓		SNH
22	Terrestrial breeding birds #								✓			SNH
23	Wintering waterbirds #								✓			SNH
24	Area of new planting #			✓								FCS
25	Area of PAWS with a commitment to restoration under long term plans #			✓								FCS

Colour Code

National Park Partnership Plan Indicators
Other datasets for the National Park which can be used as indictators
Scotland's Biodiversity Indicators: http://www.snh.gov.uk/publications-data-and-research/our-changing-environment/scotlands-indicators/biodiversity-indicators/

Appendix I: Policies

The NPPP Conservation Outcome

'An internationally renowned landscape where the natural beauty, ecology and the cultural heritage are positively managed and enhanced for future generations.'

Relevant National Park Partnership Plan Policies

Con Policy 1: Conservation (Sandford) Principle

a) In exercising their functions in the National Park all public agencies will give greater weight to the first aim of the National Park if it appears to be in conflict with the other National Park aims. Additionally any plan or project will only proceed if it does not adversely affect the integrity of a designated site.

Outcome: Long- term protection of the National Park.

Con Policy 2: Natural Heritage

Native species, habitats and geodiversity features within the National Park should be protected and enhanced through management and development that is in keeping with the Park's protected status. Priority will be given to:

a) Species that are most under threat, in particular: wading birds, Greenland white fronted geese, black grouse, red squirrel, capercaillie, powan, salmon and water vole.
b) Ensuring that designated sites features are in favourable condition or are under management that leads to that condition.
c) An ecosystem approach focusing on peatland, wetlands, heath, moorland and woodland at a landscape scale to deliver carbon sequestration, flood management and the creation of integrated habitat networks across the Park as part of the National Ecological Network for Scotland, that delivers resilience to climate change and mitigates fragmentation.
d) Reducing the impact of invasive non-native species focusing on grey squirrel, American mink, Japanese knotweed, Rhododendron ponticum and invasive riparian species.
e) Preventing the establishment of other invasive non-native species in the Park.
f) Promoting awareness and understanding of geodiversity features.

Outcome: The National Park is widely recognised as a leading area in the management and enhancement of its habitats and species

Con Policy 3: Landscapes

The outstanding landscapes and special qualities of the Park should be protected and where possible enhanced. The benefit of these landscapes for the economy of the Park should be understood. Priority will be given to:

a) Protecting the relative wildness of the National Park, specifically the core areas of wild land character, acknowledging the role of land management in maintaining these core areas.
b) Maintenance and promotion of dark skies in the National Park
c) Supporting land-based businesses with long-term management plans that deliver tangible benefits for the conservation, visitor experience and rural development outcomes of the National Park.
d) Land-use changes that enhance the environment and economy of the National Park.
e) Supporting the management and improvement of the Park's designed landscapes focusing on those locations with maximum opportunities for public enjoyment.
f) Forest design that is sympathetic to the Park's landscapes, designated sites and ecosystems. This includes restoring Planted Ancient Woodland sites and where appropriate increases the area of the National Park under continuous cover forest management.

Outcome: Maintain high quality landscapes that deliver multiple environmental benefits and an economic return.

Con Policy 4: Water

The Park's water resources are key for economic development and public enjoyment as well as being among the defining conservation features of the Park. The conservation of these resources is critical for their long-term sustainability and ability to deliver economic development and public enjoyment. Priority will be given to:

a) Achieving good ecological status for all the Park's rivers and lochs and preventing any deterioration in ecological status.
b) Achieving sustainable use of Loch Lomond to deliver a balance between recreation, conservation and economic uses.
c) Sustainable flood management solutions that safeguard designated sites and other important ecological assets, focusing initially on the River Teith in the Forth catchment.

Outcome: Water resources to be protected and enhanced to deliver multiple benefits for local communities, businesses and visitors.

Con Policy 5: Carbon Storage

The National Park's peatlands and woodlands are a valuable resource. Part of that value is the carbon stored within them. Priority will be given to:

a) Supporting land-use practices that store carbon
b) Woodland expansion on suitable sites
c) Protection of existing peatland resources and restoration of suitable sites.

Outcome: Increased carbon storage within the National Park

Relevant National Park Partnership Plan Priorities

Conservation (Sandford) Principle - (link to Con Policy 1)

Outcome: Long-term protection of the National Park

Priority for Action	What does this Mean?	Target for 2017	Lead Partners	Other Organisations
C1 Asset management	The maintenance of the Park's resources for future generations is still not fully taken into account in decision making. There needs to be greater understanding of the role that natural resources can play in delivering economic growth (forestry, agriculture, tourism, fishing, countryside sports, recreation) and the need to conserve these resources through effective management of resources to support economic growth and society over the long term.	By end 2013 raise awareness of the role that natural assets perform in the economic performance of the National Park. By end 2014 develop an approach that takes into account the value of natural resources in all decision making by public bodies in the National Park.	• National Park Authority • Scottish Natural Heritage	• Forestry Commission Scotland / National Forest Estate • Scottish Enterprise • Highlands and Islands Enterprise • VisitScotland • Local Authorities • sportscotland

Natural Heritage - (link to Con Policy 2)

Outcome: The National Park is widely recognised as a leading area in the management and enhancement of its habitats and species.

Priority for Action	What does this Mean?	Target for 2017	Lead Partners	Other Organisations
C2 Species Management	The National Park has a range of species that are under threat from land-use changes, climate change, recreation pressure and other issues. Species management in conjunction with a focus on integrated habitat networks should provide a robust approach to delivering conservation outcomes.	By end 2013 revise the NPBAP and then implement. By 2017 wading birds, Greenland white-fronted geese, red squirrel, black grouse, capercaillie, salmon and water vole populations to have increased in numbers or extent on 2011 baseline or for their habitat to have been improved.	• National Park Authority • Scottish Natural Heritage • Forestry Commission Scotland / National Forest Estate	• NGOs including RSPB, SWT, WTS, NTS etc • Private Land Managers • National Farmers Union of Scotland • Scottish Land and Estates • Fishery Trusts and Boards • The Great Trossachs Forest • Loch Lomond and The Trossachs Countryside Trust
C3 Integrated Habitat Network	The National Park's habitats are still too fragmented. To encourage ecological sustainability there is a need to join up areas of woodland and other priority habitats across the National Park as part of the National Ecological Network for Scotland and linking to adjacent areas, such as the Central Scotland Green Network (CSGN). This should also help with resilience to climate change through allowing populations to spread more easily.	By end 2013 identify key areas of woodland, wetland, grassland and moorland/ heathland habitats that need to be protected, enhanced and/ or expanded, connecting to the CSGN Integrated Habitat Network. By 2015 pro-actively support applications to the SRDP (or other support mechanisms) that deliver landscape-scale habitat enhancement.	• National Park Authority • Scottish Natural Heritage • Forestry Commission Scotland / National Forest Estate • Scottish Environment Protection Agency	• NGOs including RSPB, SWT, WTS, NTS etc • Private Land Managers • National Farmers Union of Scotland • Scottish Land and Estates • Central Scotland Green Network • The Great Trossachs Forest • Loch Lomond and The Trossachs Countryside Trust
C4 Invasive non-native species	Invasive non-native species are a threat to native biodiversity and cost a large amount of money to reverse once they have established themselves within an ecosystem. The National Park will collectively tackle invasive species and focus on those with the best evidence base to begin with. This is a large area of work and a focus is needed but should not detract from work being undertaken in other areas by communities or landowners.	By end 2012 start management of riparian invasive plants in the Fillan/ Dochart and Earn catchments. By end 2013 develop Invasive Non-Native Species Strategy for National Park. By 2015 ensure grey squirrel and American mink populations are reducing. By 2015 put in place management to eradicate Japanese knotweed and other non-native riparian plants from the Teith system in National Park. By 2017 put in place management to eradicate *Rhododendron ponticum* from 50% of National Forest Estate in National Park.	• National Park Authority • Scottish Natural Heritage • Forestry Commission Scotland / National Forest Estate • Scottish Environment Protection Agency	• NGOs including RSPB, SWT, WTS, NTS etc • Local Authorities • Private Land Managers • National Farmers Union of Scotland • Scottish Land and Estates • The Great Trossachs Forest • Fishery Trusts and Boards • Loch Lomond and The Trossachs Countryside Trust

Landscapes - (link to Con Policy 3)

Outcome: Maintain high quality landscapes that deliver multiple environmental benefits and an economic return.

Priority for Action	What does this Mean?	Target for 2017	Lead Partners	Other Organisations
C5 Land of Wild Land Character	Wild land characteristics are an important feature of a National Park. To ensure the National Park does not lose the special qualities that so many people value, the relatively wild areas must be protected from extensive or intrusive man-made development. This approach needs to be balanced with the ability of the people who own or manage the land to develop sensitively and undertake land management operations. Dark skies are a special quality associated with the wilder areas of the park. This quality should be enhanced and promoted for recreational enjoyment.	By end 2013 develop supplementary planning guidance on relative wildness (and potentially an associated action plan) and ensure policy development for next National Park Local Plan By end 2014 apply for Dark Sky Reserve status for National Park From 2012 maintain the existing area of core wild land in the National Park as in 2011 relative wildness baseline.	• National Park Authority • Scottish Natural Heritage	• Forestry Commission Scotland / National Forest Estate • Stirling Council • sportscotland • NGOs including John Muir Trust • Cairngorm National Park Authority • Private Land Managers
C6 Support Schemes	The Scottish Rural Development Programme (SRDP) is the main mechanism for delivering environmental enhancement on private and NGO land in the National Park. A new Scottish scheme is planned to be in place for 2014-15. The National Park needs to have a scheme that is responsive to local needs that delivers park and national outcomes.	2012–14 promote the recognition of the National Park as a priority area within the new SRDP. By 2014-15 a new scheme in place delivering the National Park Partnership Plan priorities across conservation, visitor experience and rural development.	• Scottish Government	• National Park Authority • Scottish Natural Heritage • Forestry Commission Scotland • National Farmers Union of Scotland • Scottish Land and Estates • ConFor • Private Land Managers
C7 Land Management Plans	The development of long-term land management plans that help to guide investment in land-based businesses is considered a high priority. This has been successfully trialled during the existing Park Plan period and should be rolled out. There is a potential link to any new support scheme and to long-term forest plans.	By 2017 25% of all private land in the National Park has a long-term management plan.	• National Park Authority • Forestry Commission Scotland • Private Land Managers	• Scottish Government • Scottish Natural Heritage • NGOs including RSPB, SWT, WTS, NTS etc • National Farmers Union of Scotland • Scottish Land and Estates • ConFor
C8 Designed Landscapes	The Park's designed landscapes are an important part of its cultural heritage (five inventory designed landscapes and 40 of local significance). The management of these designed landscapes is important as they contribute significantly to the Park's landscape character and many of them are under pressure from development or land-use change.	By 2017 20% of designed landscapes in management agreements.	• National Park Authority • Historic Scotland	• Scottish Natural Heritage • Forestry Commission Scotland • Private Land Managers

Water - (link to Con Policy 4)

Outcome: Water resources to be protected and enhanced to deliver multiple benefits for local communities, businesses and visitors.

Priority for Action	What does this Mean?	Target for 2017	Lead Partners	Other Organisations
C9 Ecological Status of Water Bodies	The ecological status of the rivers and lochs of the National Park is a priority. The National Park will focus on helping to achieve good ecological status for water bodies, required under the Water Framework Directive and to ensure no deterioration in water status.	By end 2012 contribute to the implementation of measures set out in relevant River Basin Management Plans. By 2017 an improvement in the ecological status of water bodies in the National Park .	• Scottish Environment Protection Agency	• National Park Authority • Scottish Natural Heritage • Private Land Managers • Fisheries Trusts and Boards • River Basin Management Groups
C10 Loch Lomond	Loch Lomond is unique in Scotland. It is one of the most heavily used lochs for recreation, it is designated for many important features and its banks are under development pressure. There is a need to ensure that the loch is managed in a way that delivers multiple outcomes without compromising its special qualities and protected features. There is a proposal to connect Loch Lomond to the Clyde via a new canal link. This proposal will need to consider the loch's management issues, specifically looking at water ecology, additional boat numbers, infrastructure issues and the effects on the River Endrick SAC.	By end 2012 review the existing navigational byelaws and submit revised Loch Lomond Byelaws to Scottish Government for approval. By 2017 limits of acceptable change framework with stakeholders for the future management of environmental and recreation pressures on Loch Lomond in place.	Loch Lomond: • National Park Authority Canal Link: • West Dunbartonshire Council • British Waterways	Loch Lomond: • Scottish Natural Heritage • Scottish Environment Protection Agency • Loch Lomond Stakeholder Group • Private Land Managers • Community Councils • sportscotland • NGOs Canal Link: • Scottish Water • Scottish Environment Protection Agency • National Park Authority • NGOs • Loch Lomond Stakeholder Group
C11 Sustainable Flood Management	The National Park contains the headwaters of four river systems. The Park's uplands have the ability to hold flood waters for longer through land-use management, such as increased woodland cover, flood water storage etc. The National Park should be an exemplar for a natural flood management approach which involves the restoration of riparian areas of water bodies, wetlands and floodplains to slow down water flow, whilst safeguarding riverine SACs. The National Park has six potentially vulnerable areas to flooding and there will be Local Flood Risk Management Plans prepared by relevant local authorities across the park area.	By end 2014 establish natural flood management options for the Teith area of the Forth catchment as part of the development of Flood Risk Management Plans to reduce flood pressure on Callander and Stirling. By 2015, work to develop Flood Risk Management Plans, providing opportunities for natural flood management. By 2015 support applications to SRDP (or alternative sources of funding) for flood management options on the Teith.	• Scottish Environment Protection Agency • National Park Authority • Stirling Council	• Scottish Natural Heritage • Forestry Commission Scotland / National Forest Estate • Private Land Managers • Scottish Water

Carbon Storage - (link to Con Policy 5)

Outcome: Increased carbon storage within the National Park.

Priority for Action	What does this Mean?	Target for 2017	Lead Partners	Other Organisations
C12 Carbon Storage	The National Park stores a large amount of carbon in its woodlands and peatlands. The extent of woodlands and the extent and quality of peatlands have a significant impact of the storage capability of the Park. The National Park can play a role in achieving national objectives by ensuring that carbon storage capability is enhanced in the Park in tandem with improvements to landscape and biodiversity. There remains capacity in this National Park for expanding woodland cover in line with Scottish Government policy for woodland expansion for climate change mitigation and other, multi-purpose, public benefit reasons. Forestry Commission Scotland and the Park Authority will continue to monitor the scale and extent of any expansion, bearing in mind the scale of previous woodland creation, and amend its approach to encouraging woodland expansion where appropriate and in discussion with all key stakeholders.	By end 2013 have in place a Local Woodland Strategy that provides a basis for a wider land use action plan by 2014. By 2017 increase the area of woodland in the National Park in line with historic trends (around 600 hectares a year) using locations and designs that bring landscape and biodiversity benefits, whilst avoiding adverse impacts on landscape special qualities, designated sites and soil carbon stores. By end 2014 identify and assess the condition and management of peatland in the National Park. Identify areas for restoration and management focussing on the most degraded sites first.	• Forestry Commission Scotland / National Forest Estate • National Park Authority • Scottish Natural Heritage	• Private Land Managers • NGOs including RSPB, SWT, WTS, NTS etc • The Great Trossachs Forest

Relevant Local Plan Policies

Policy ENV1 European Sites (SACs and SPAs)

Development that is likely to have a significant effect on a European Site (either alone or in combination with other plans or projects) will be subject to an Appropriate Assessment of the implications for the site's conservation objectives. Where an assessment cannot conclude that the development will not adversely affect the integrity of the site, either individually or in combination with other development, the proposal will only be permitted where:

(a) there are no alternative solutions; and

(b) there are imperative reasons of overriding public interest. Where the site concerned hosts a priority natural habitat type these reasons must relate to human health or public safety, beneficial consequences of primary importance for the environment, or further to an opinion from the European Commission (through Scottish Ministers) or other imperative reasons of overriding public interest.

Policy ENV2 Sites of Special Scientific Interest, National Nature Reserves and RAMSAR Sites

Development that affects a Site of Special Scientific Interest, National Nature Reserve or RAMSAR site will only be permitted where it is demonstrated that:

(a) there is no adverse effect on the site that would compromise the objectives and overall integrity of the designated area; or

(b) any adverse effects on the qualities for which the area has been designated are clearly outweighed by social or economic benefits of national importance.

Policy ENV3 Local Nature Conservation Sites

Developments that affect the wildlife interest and conservation management of local nature conservation sites will not normally be permitted unless it can be demonstrated there will be no adverse effect to the overall integrity of the site.

Policy ENV4 Legally Protected Species

Development will not be permitted where it would have an adverse impact on any protected species under schedules 2, 3 and 4 of the Conservation (Natural Habitats, &.) Regulations 1994, wherever they occur unless it is demonstrated that:

(a) it would not be detrimental to the maintenance of the United Kingdom population or conservation status of the species concerned;

(b) there is no alternative; and

(c) the applicant can demonstrate public health, public safety or other imperative reasons of overriding public interest, including those of a social or economic nature, and that there are beneficial consequences of primary importance for the environment.

In addition full consideration will be given to the protection of species protected under schedules 1, 5 and 8 of the Wildlife and Countryside Act 1981 (as amended), species listed in Annex 1 of the Birds Directive and badgers under the Protection of Badgers Act 1992 (as amended).

Where there is good reason to believe that a protected species may be present on a proposed development site, an ecological survey will be required to determine whether the species is present, the likely impacts on the species or habitat, and any mitigation and compensation measures that will be undertaken.

Policy ENV5 Species and Habitats Identified in National Action Plans

Development that would have an adverse impact (including cumulative impact) on habitats or species identified in the UK Biodiversity Action Plan or on the Scottish Biodiversity List will only be permitted where:

(a) it is demonstrated that the need and justification for the development outweighs the local, national or international contribution of the area of habitat or populations of species;

(b) significant harm or disturbance to the ecological functions, continuity and integrity of the habitats or species populations is avoided, or minimised where harm is unavoidable, and appropriate compensatory and/or management measures are included either within or outside of the site; and

(c) the functions of woodlands, peat and bog lands for carbon sequestration will not be impaired in the medium to long term.

Policy ENV6 Enhancing Biodiversity in New Developments

New developments involving the construction of new buildings and the significant restoration and remodelling of existing buildings in the Park will enhance biodiversity by:

(a) securing the protection, management and enhancement of natural landscape, wildlife and wildlife habitat, and where possible the creation of new wildlife habitats; and

(b) aiming to have native species planted and preventing the planting of invasive species including those listed in Schedule 9 of the Wildlife and Countryside Act 1981.

Policy ENV7 Protecting Geological Conservation Review Sites

Development that affects a Geological Conservation Review Site will only be permitted where it is demonstrated that:

(a) there will be no adverse effects on the overall integrity of the identified site or on opportunities to access the site for research purposes; and

(b) any adverse effects on the qualities for which the area or site has been identified are outweighed by social or economic benefits of national importance.

Sites of geological importance in the National Park identified through future research and audit will be recognised and appropriately protected from any significant adverse effects.

Policy ENV8 Ancient, Long-established and Semi-natural Woodlands

Planning permission will not be granted for any development that would result in the loss or deterioration of an ancient, long-established or semi-natural woodland unless there are overriding public benefits from the development that outweigh the loss of the woodland habitat. Where development is accommodated compensatory planting is to be undertaken which must achieve the aims of the Loch Lomond and The Trossachs Woodland and Forestry Framework and comply with the Scottish Government's Policy on Control of Woodland Removal.

Policy ENV9 Development Impacts on Trees and Woodlands

The Park Authority will resist development likely to lead to the loss or damage to important individual trees or groups of trees or woodlands that contribute to local amenity, the character of the area and/or are of nature conservation value or historic significance.

Where important trees or woodlands may be potentially affected by development or land-use change, the Park Authority will:

(a) ensure that adequate provision is made for the protection, management and planting of new trees and woodlands in keeping with distinctive landscape character of the area and where possible enhance existing or create new wildlife habitat;

(b) seek to use Tree Preservation Orders to protect important trees or groups of trees or woodlands perceived to be under threat of damage or removal if it appears expedient in the interests of amenity, and/or the trees and woodlands are of cultural or historical significance; and,

(c) use management agreements and/or legal agreements to encourage positive management of woodlands on or adjacent to development sites.

Where development is proposed that may affect trees or woodland of amenity and/or historic or cultural value on or adjacent to the site, measures following the recommendations and guidance in *British Standard 5837:2005 Trees in Relation to Construction (4)* shall be followed to identify trees to be retained and adequately protected so that they form part of the finished development.

Policy ENV10 Protecting the Water Environment

New development will be required to:

(a) protect and enhance the ecological status, natural heritage, landscape values and physical characteristics of water bodies (including biodiversity and geodiversity);

(b) ensure no adverse impact on the water environment;

(c) protect opportunities for public access to and recreation and enjoyment on and around lochs, rivers, burns, wetlands and the coastal marine area;

(d) have regard to any international designated Bathing Waters in the Park;

(e) ensure that development has no adverse impact on the quantity of water available for drinking water and other uses; and

(f) demonstrate that there would be no significant adverse impact on protected species or their habitats in the water body or its catchment area.

Policy ENV11 Connection to Sewerage and Water Supply

All development within or adjacent to publicly sewered areas must connect to the public network unless:

(a) The development is in a small settlement where no public sewer exists or where the public sewer serves a limited number of dwellings. If the public sewerage system cannot be developed due to technical constraints or the connection is unacceptable to Scottish Water, then a private system may be permitted subject to the system not creating or exacerbating an environmental risk from cumulative development; or

(b) The development is in an area where connection to the public sewer is not possible due to lack of capacity, but where Scottish Water has confirmed that investment has been allocated within its investment programme to address this constraint. In such cases a private wastewater system must be designed and built to a standard to allow adoption by Scottish Water (drainage will require to be provided to a likely connection point). The developer will be required to fund Scottish Water's completion of the connection following upgrading of the sewerage system and a planning condition will be attached requiring the development to connect when available. In some areas, such as Strone, Kilmun and Blairmore, in order to satisfy Policy ENV 10, effluent may require to be treated prior to connection to the public sewer.

Private water supplies will only be supported where a public water supply system and/or capacity are unavailable and where there is no adverse effect on the water environment or the lawful interests of other land and water users.

Policy ENV12 Surface Water Drainage

Sustainable Urban Drainage Systems (SUDs) will be required for all new developments except for single dwellings or where the surface water discharge is made directly to coastal waters. SUDs will be incorporated into the design of developments. Developments should also consider the impact of discharging surface water from large developments to any watercourse by undertaking a Drainage Impact Assessment.

Policy ENV13 River Engineering Works and Culverts

River engineering work in or near water bodies that would have a significant adverse effect on water quality, quantity or flow rate, ecological status, riparian habitat, protected species or floodplains, either up or downstream from the works will not be supported.

There will be a presumption against the culverting of watercourses unless there is no alternative. Proposals for culverting of watercourses for land gain may only be justified if the applicant can demonstrate that:

(a) no other practical option exists that would allow the watercourse to remain open; and

(b) the proposed development is of over-riding public interest.

Policy ENV14 Marine and Inland Aquaculture

Shellfish and finfish aquaculture will be supported where there is no significant adverse effect directly, indirectly or cumulatively on:

(a) statutory protected nature conservation sites, habitats or species, and native fish populations;
(b) landscape character;
(c) communities and settlements;
(d) any area controlled by the Ministry of Defence that is used by the United Kingdom, NATO and allied nations for training purposes;
(e) navigational and fishing interests;
(f) sites of historic or archaeological interest and their settings;
(g) recreational interests;
(h) the water environment, and
(i) existing aquaculture sites.

Policy ENV15 Development in the Coastal Marine Area

Development along the coastline will be supported where it:

(a) is located within a settlement or is consistent with Policies TOUR1 and REC1;
(b) does not adversely affect habitats and species protected by Policies ENV1, ENV2, ENV3, ENV4, ENV5, ENV6 and ENV8;
(c) is of a scale and character appropriate to the surrounding area;
(d) is located outside an area at medium to high risk of flooding or erosion and does not interrupt coastal processes;
(e) is sensitive to any cumulative impacts from existing development in the area;
(f) is outside the natural foreshore unless the development is considered essential for public utility services, water-based leisure or recreational uses in accordance with other local plan policies;
(g) is able to protect public access to and along the coast; and
(h) does not have a significant adverse effect on water quality.

Policy ENV16 Development in Medium to High Flood Risk Areas

New development on undeveloped or sparsely developed functional floodplain will not be supported, unless it is demonstrated that the proposed development complies with the Risk Framework as defined in Scottish Planning Policy or subsequent national planning guidance. Development in the National Park will not normally be permitted in areas that are:

(a) outwith existing settlements and that have been identified as medium to high flood risk on SEPA's flood map or in areas known to flood frequently that have not been identified by SEPA unless:
   i. the location is essential for operational purposes such as navigation and water-based recreation uses, agriculture, transport or utilities infrastructure;
   ii. an alternative lower risk location is not physically available; and
   iii. a flood risk assessment in compliance with (b) i, ii, iii, and approved by the relevant flooding authority can demonstrate that the risk can be mitigated; and

(b) within existing settlements and that have been identified as medium to high risk on SEPA's flood map or in areas otherwise known to flood frequently unless a flood risk assessment is approved by the relevant flooding authority and can demonstrate that:
   i. the assessment has been developed in consultation with SEPA and complies with SEPA's *Technical Flood Risk Guidance*;
   ii. the site will not be at risk of flooding, and;
   iii. the development will not increase the risk of flooding elsewhere and where land raising is proposed on functional floodplains new development will seek to provide compensatory flood storage to ensure that the lost storage volume is replaced in full. Provision of like-for-like replacement storage will be the preferred method.

Policy ENV17 Natural Flood Management

Flood prevention schemes will be expected to adopt a natural flood management approach which involves the restoration of riparian areas of water bodies, wetlands, floodplains and woodlands to slow water flow. Traditional hard engineering approaches for flood prevention will only be supported where it can be demonstrated that a natural flood management approach is not feasible and where there will be minimal adverse effects on the natural, cultural and historic environment.

Policy ENV18 Protecting Air Quality

Development proposals will not be supported where they would have a significant adverse effect on air quality, could cause harm to human health or be damaging to the natural or built environment.

Policy ENV19 Historic Land Contamination

Where development is proposed on or close to historic land contamination, applicants will be required to provide a risk assessment which demonstrates that:

(a) potential impacts on human health and the wider environment, including all aspects of the water environment, arising from land contamination as a result of historical activities have been investigated and addressed. Where appropriate, consideration should be given to both radioactive and non-radioactive sources of contamination; and

(b) the site has been remediated or the development proposal provides for remediation of the site in a manner consistent with the requirements of PAN 33 to ensure that the site is made suitable for use and is not causing unacceptable risk.

(c) opportunities for new and existing wildlife habitat are provided for.

Policy ENV20 Conservation Areas

Development and demolition within a conservation area or affecting its setting will only be supported where:

(a) it preserves or enhances its character and appearance and is consistent with any relevant conservation area appraisal or management plan that may have been prepared;

(b) its design, materials, scale, layout and siting is appropriate to the character or appearance of the conservation area and its setting. Replacement windows and doors on traditional buildings within conservation areas should normally match the original in relation to materials, proportions, method of opening and appearance.

Trees which are considered by the planning authority to have amenity value shall be preserved in accordance with Policy ENV9 Development Impacts on Trees and Woodlands.

Planning permission in principle will not normally be considered appropriate for developments in conservation areas due to the importance of assessing detailed design matters.

Policy ENV22 will apply where an existing unlisted building contributes positively to the character or appearance of the conservation area. In all other circumstances, proposals for demolition will not be considered in the absence of a detailed planning application for a replacement that enhances or preserves the character of the conservation area. Demolition must not begin until it has been demonstrated to the satisfaction of the planning authority that contracts have been let for the approved development.

Policy ENV21 Listed Buildings

Development affecting a listed building or its setting shall preserve the building, its setting, important views of, to and from the listed building or any features of special architectural or historic interest which it possesses. The layout, design, materials, scale, siting and use of any development shall be appropriate to the character and appearance of the listed building and its setting. There is a presumption against demolition or other works that adversely affect the special interest of the building or its setting.

Enabling development will be supported where a listed building is seriously at risk from neglect as a result of the inability to stabilise its decay or to find an appropriate new use. It will be necessary to demonstrate that financial assistance is not available from any other source and that development will be restricted to the minimum required to secure the long-term future of the listed building. Enabling development will only be supported if designed to conserve and enhance the special interest, character and setting of the listed building.

Policy ENV22 Demolition of Listed Buildings

Proposals for the total or substantial demolition of a listed building will only be supported where it has been demonstrated to the satisfaction of the planning authority that:

(a) the building is not of special interest; or

(b) the building is incapable of physical repair and reuse through the submission and verification of a thorough structural condition report produced by a qualified structural engineer; or

(c) the demolition of the building is essential to delivering significant benefits to economic growth or the wider community; or

(d) the repair of the building is not economically viable and that it has been actively marketed at a reasonable price and for a period reflecting its location, condition and possible viable uses without finding a purchaser.

The Royal Commission on the Ancient and Historical Monuments of Scotland (RCAHMS) will be formally notified of all proposals to demolish listed buildings to enable features to be recorded.

Policy ENV23 The Wider Built Environment and Cultural Heritage of the Park

Where applicable development proposals will be expected to protect, conserve and/or enhance a building or feature of architectural and/or historical merit or of cultural significance. Buildings or features of merit which contribute positively to the cultural heritage of the National Park should be retained and incorporated in new developments where possible and any adverse impacts of the development should be avoided or mitigated.

Policy ENV24 Historic Gardens and Designed Landscapes

Development affecting historic gardens and designed landscapes shall protect, conserve and enhance such places and shall not impact adversely on their character, important views to, from or within them or their wider landscape setting. Significant development proposals in historic gardens and designed landscapes will require management plans as a condition of any planning permission.

Policy ENV25 Scheduled Ancient Monuments and Candidate Scheduled Ancient Monuments

Scheduled monuments and other identified nationally important archaeological sites shall be preserved in situ within an appropriate setting and development shall not be permitted which adversely affects scheduled monuments or their settings. The Park Authority, in consultation with its archaeological advisors and Historic Scotland, will deal with candidate sites for scheduling as if they were scheduled.

Policy ENV26 Other Unscheduled Sites of Archaeological Importance

Unscheduled archaeological heritage will be expected to be retained, protected and preserved in situ in an appropriate setting. This includes all significant sites, structures, buildings, landscapes and battlefields of archaeological or historical interest. Where it can be demonstrated that the preservation of the archaeological interest in situ is not possible, planning approval will be conditional upon satisfactory compliance with a programme of archaeological work, a written scheme of archaeological investigation, archaeological protection, mitigation, monitoring, post-excavation analysis and publication as required by the Park Authority.

Policy ENV27 Sites with Unknown Archaeological Potential

In the case of development proposals on sites which are considered to have significant archaeological potential the developer will be required to submit details of the results of an archaeological evaluation before determination of the planning application. This is expected to establish the sensitivity of the site to development. In cases where the preservation of the archaeological interest in situ is not possible, planning approval may be refused or may be conditional on satisfactory compliance with an appropriate programme of archaeological mitigation to include the full implementation of an agreed written scheme of archaeological investigation, archaeological protection, monitoring, post-excavation analysis and publication as required by the Park Authority.

Policy ENV28 Conservation and Re-use of Redundant Buildings

Proposals for sympathetic conversion and re-use of redundant buildings of vernacular quality and local historic and/or architectural quality will be supported where this will stop the building from falling into disrepair and where the building is structurally sound and capable of conversion without significant degrees of rebuilding or new building elements.

Policy ENV29 Protecting Playing Fields and Sports Pitches

Development proposals on playing fields and sports pitches will not be supported unless it is demonstrated that:

(a) the proposed development is ancillary to the principal use of the site as a playing field and/or involves a minor area of the playing field that would not affect its continued use and potential for sport and recreational activities; or

(b) the playing field or sport pitch, or part of it, which would be lost as a result of the proposed development, would be replaced by:

i. a new playing field of comparable or greater benefit for sport in a convenient and accessible location for its users; or

ii. the upgrading of an existing playing field to provide a better quality facility for its users, either within the same site or at another location which is convenient for its users and which maintains or improves the overall playing capacity in the area; or

(c) a playing field strategy prepared by the responsible local authority and agreed by Sportscotland has demonstrated that there is a clear excess of sports pitches to meet current and anticipated future demand in the area and that the site could be developed without detriment to the overall quality of provision.

Policy ENV30 Protecting Other Important Open Space

Development on formal and informal open space in public or private ownership will generally not be supported unless it can be demonstrated that:

(a) the open space is not of community value and has no other multifunctional purposes such as cultural, historical, biodiversity or local amenity value; and

(b) the proposal meets other local plan policies and an alternative high quality formal open space provision within a convenient distance and accessible location is provided; or

(c) the proposal complements the principal use of the site and will result in improved maintenance or enhancement of open space.

Policy ENV31 New Open Space Opportunities

Where appropriate, development proposals will:

(a) provide for new active and passive open space provision; and

(b) retain and maintain for the long term such open space; or

(c) provide a commuted sum in lieu of either open space provision or maintenance, in accordance with Policy DCON1 Developer Contributions.

As an interim guideline, until standards informed by an open space audit and strategy have been prepared and published in supplementary planning guidance, the level of open space provision required by criterion (a) shall be based on the national standard of 2.4 ha per 1,000 population.

Appendix II: Project List

Project 1: Rare Fish in the National Park

Project Description	The Powan in the Classroom Project involved 5 primary schools in the National Park successfully rearing powan from incubated eggs and later releasing the young fish into Loch Lomond. This project hopes to follow on from the success of the Powan in the Classroom project, but will focus on other rare fish found within the National Park including lamprey, salmon and Arctic charr. It will focus on inspiring schools and the wider community about the special nature of aquatic biodiversity within Loch Lomond and The Trossachs National Park.
Project Outputs	**School educational projects**
Partners (Lead organisation in bold)	**LLFT**, NPA
Project Status (updated October 2015)	● **Project ~~completed or~~ progressed on schedule** The "Powan in the Classroom" project has been delivered to a number of local primary schools within the National Park since 2009. In 2015/2016 four schools will participate with the project to learn more about Powan and Loch Lomond. The project also helps to raise awareness about the sea lamprey and the unique dwarf river lamprey present in Loch Lomond. The LLFT have also delivered talks on other fish species such as the European eel, sea trout and Atlantic salmon to Luss Primary school.
Start Date	-
End Date	-
Map	Park Wide

Project 2: Smolt Trapping Of Salmon and Sea Trout

Project Description	The availability of nursery habitat areas need to be quantified at a whole catchment scale in order to identify the potential capacity for juvenile production of Salmon and Sea trout of different sub catchments within the Lomond system. Wild smolt numbers are one of the best indicators of the health of salmon and sea trout populations in a river and the conservation of smolts is critical to the long term health of the system. The Blane and Endrick are important nursery tributaries of the Lomond catchment, and this project will

	involve smolt trapping during the spring migration in both rivers to assess the status of salmon and sea trout populations and determine how the health of the system can be improved.
Project Outputs	Salmon and Trout population trend data
Partners (Lead organisation in bold)	**LLFT**
Project Status (updated October 2015)	● **Project ~~completed or~~ progressed on schedule** Smolt trapping of Atlantic salmon and sea trout has been carried out within the Endrick system since 2009. The data from 2015 is still to be analysed separately and as part of Loch Lomond Fisheries Trust's overall monitoring programme.
Start Date	2012
End Date	2017
Map	Still to be supplied

Project 3: Luss Water Sea Trout Recovery Programme

Project Description	Conservation initiatives and Curriculum for Excellence related project work with local schools to aid the recovery of the sea trout population within the Lomond system. Baseline surveys of sea trout populations will be undertaken through a combination of e-fishing, smolt trapping and installation of fish counters at appropriate sites.
Project Outputs	Baseline surveys
Partners (Lead	**LLFT**

organisation in bold)	
Project Status (updated October 2015)	🔴 **Project not progressed** Although no action has been taken, the LLFT has reviewed the project and is currently considering ways to develop this project.
Start Date	2012
End Date	2017
Map	Still to be supplied

Project 4: Habitat Carrying Capacity for Salmon – Endrick

Project Description	This project aims to establish the current carrying capacity within the River Endrick for salmon. The Endrick is an important nursery tributary of the Lomond Catchment, however, to establish the overall carrying capacity, surveys are required to be undertaken to establish the habitat capacity for all life stages of the salmon, i.e. to support juvenile, spawning and adult stages.
Project Outputs	Fish Survey Information
Partners (Lead organisation in bold)	**LLFT**
Project Status (updated October 2015)	🟡 **Project behind schedule** River habitat data has been collected and analysed for the upper and middle Endrick Water and three of its main tributaries. The results from these surveys have been written up in an interim report.
Start Date	2010
End Date	2013
Map	Still to be supplied

Project 5: River Fruin Salmon

Project Description	This project aims to firstly establish the current carrying capacity within the River Fruin for salmon by undertaking surveys to establish the habitat capacity for all life stages of the salmon, i.e. to support juvenile, spawning and adult stages. The subsequent stages of the project aims to restore the salmonid habitat using a variety of different techniques and re-establishing connectivity within the Fruin tributaries affected by water abstraction. Efforts will be concentrated on the Auchengaich Burn. The Upper Fruin will then be used as a demonstration site.
Project Outputs	Fish Survey Information & Habitat Restoration
Partners (Lead organisation in bold)	**LLFT**
Project Status (updated October 2015)	● **Project behind schedule** Electrofishing surveys of the Auchengaich Burn have been carried out to determine the status of juvenile Atlantic salmon and sea trout populations. The LLFT are in early discussions with project partners interested in improving the River Fruin habitat and catchment area.
Start Date	2014
End Date	2017
Map	Still to be supplied

Project 6: Forth & Teith Salmon Project

Project Description	This project aims to assess and implement options to improve habitat and access to the habitat for salmon, trout and lamprey within the Forth and Teith Catchments of the National Park. Surveys will be carried out, and appropriate habitat restoration works undertaken where appropriate.
Project Outputs	Surveys and Habitat Restoration Works
Partners (Lead organisation in bold)	**FFT & NPA partnership**, SEPA, SNH, land owners
Project Status (updated October 2015)	🔴 **Project not progressed** This project has been delayed due to lack of funding, however, the Forth Fisheries Trust are looking into a possible ECAF bid for a Freshwater Pearl Mussel Project which has been identified in the Teith.
Start Date	2012
End Date	2018
Map	***Click here to view an interactive map***

Project 7: Conservation Actions for the Endangered Arctic Charr Population of Loch Eck

Project Description	The Arctic charr is closely related to salmon and trout and is found in cold northern climates including Scotland. Thought to be the first species to recolonize Scotland's freshwaters after the last ice age, they are found in deep lochs where if land locked they spend their entire life cycle, unlike salmon and trout. Due to a number of factors such as climate change, this species is threatened. This project will examine the population of Arctic charr in Loch Eck and assess opportunities for the identification and creation of a conservation refuge site for this highly threatened population.
Project Outputs	Research papers

Partners (Lead organisation in bold)	**SCENE (University of Glasgow)** and SNH
Project Status (updated October 2015)	● **Project completed** ~~or progressed on schedule~~ **Project completed** SCENE would like to progress this further, however, they have reached a natural end point and the end of funding.
Start Date	2012
End Date	2014
Map	***Click here to view an interactive map***

Project 8: Population Structuring In the Brown Trout Complex of Loch Lomond

Project Description	This project will examine the phenotypical and genetic structuring of the brown trout (Salmo trutta) population of the Loch Lomond catchment. Reports and scientific papers will be produced which will increase the conservation knowledge of this species, and look at methods of increasing the population across the catchment.
Project Outputs	Research papers
Partners (Lead organisation in bold)	**SCENE (University of Glasgow)**
Project Status (updated October 2015)	● **Project** completed or **progressed on schedule** The project is progressing very well and is due for completion in 2016.
Start Date	2013
End Date	2015
Map	***Click here to view an interactive map***

Project 9: Owl Nest Box Monitoring

Project Description	Traditional nest sites for tawny and barn owls are in decline due to a number of factors such as a fall in the number of veteran trees, and traditional barns. FCS has approximately 150 barn owl nest boxes, and 300 tawny owl nest boxes in forests throughout the National Park. This project continues to monitor these boxes annually to gather information on distribution and status of different owl species within the area.
Project Outputs	Species Conservation & Survey Information
Partners (Lead organisation in bold)	**FCS**
Project Status (updated October 2015)	● **Project** ~~completed or~~ **progressed on schedule** This project is on-going. Numbers of boxes being used this year are, however, poor due to low vole populations.
Start Date	2012
End Date	2017
Map	***Click here to view an interactive map***

Project 10: Barn Owl Monitoring

Project Description	Modern buildings and many renovation projects do not generally allow for barn owls to find suitable nest sites. From spring 2010, National Park Rangers have assisted a local volunteer Mike Steward to erect a total of 38 boxes (funded by the Natural Heritage Grant Scheme) on farms across the National Park. This successful project will continue to monitor and record the box usage and all barn owl adults and chicks found in the boxes will continue to be ringed. This work will complement owl box monitoring carried out in woodlands by FCS.
Project Outputs	Species Conservation & Survey Information
Partners (Lead organisation in bold)	**Mike Stewart**, NPA
Project Status (updated October 2015)	● **Project ~~completed or~~ progressed on schedule** The project is on-going. This year 43 nest boxes were checked; 41 eggs or young were found and 15 young were ringed. Of these 23 either didn't hatch, the young died or disappeared (eaten by siblings) and included 1 nest that was predated. 3 fledged before ringing. Compared to the bumper year in 2014 this is well down but it's around the average, possibly slightly lower on the south and east Loch Lomond area but certainly around average for west Loch Lomond and Breadalbane area.
Start Date	2012
End Date	2020

Map	***Click here to view an interactive map***

Project 11: Bat Box Monitoring

Project Description	This project aims to understand the behaviour of bats through a combination of ringing and monitoring of bat boxes located across Cowal, Loch Ard, Achray and Katrine Forest areas. Approximately 200 boxes have been monitored since 2008, and all bats are given a unique ring. The project aims to explore: 1. How far bats travel, exploring territory sizes and determining if the bats return to the same roosts each year. 2. Bat mortality rates within different species, locations etc. 3. The distribution and status of different bat species within the project area.
Project Outputs	Species Conservation & Survey information
Partners (Lead organisation in bold)	**FCS**
Project Status (updated October 2015)	● **Project ~~completed or~~ progressed on schedule** This project is on-going. Boxes will be monitored later in the year (2015).
Start Date	2012
End Date	2017
Map	***Click here to view an interactive map***

Project 12: Wild Challenge – Red Squirrels

Project Description	Red squirrels are a UKBAP priority species with only 121 000 left in Scotland today. This partnership project aims to safeguard red squirrels across the National Park. This will be achieved through a combination of awareness raising, surveying, habitat improvements and targeted control of grey squirrels. Screening of grey squirrel blood samples across a representative area for squirrel pox virus will also be undertaken.
Project Outputs	Surveys, Species & Habitat Management, Grey Squirrel Control
Partners (Lead organisation in bold)	**SWT/SSRS**, NPA, FCS, Local squirrel groups
Project Status (updated October 2015)	● **Project ~~completed or~~ progressed on schedule** A new project officer was appointed in September 2015. Public engagement within the National Park and surrounding areas has been successful in 2015. Targeting events and assisting with other organisations squirrel awareness days have allowed engagement with over 500 people. The sightings page on Saving Scotland's Red Squirrels has seen the continuation of good records and interest from the general public in the area. Spring surveying with the help of local volunteers continued in 2015 and the result of the survey will soon be available. Grey squirrel control was undertaken by a short seasonal staff member as well as squirrel pox sampling. Local landowners under the grey squirrel control SRDP scheme continue to assist the project

	by covering many important grey squirrel dispersal zones.
Start Date	2014
End Date	2020
Map	Park wide

Project 13: Scottish Wildcat Surveys

Project Description	The Scottish wildcat population is currently in decline. One of the main factors thought to be responsible for this decline is the breeding with domestic cats. There have been a number of anecdotal sightings of wildcats at various locations across the National Park. Contributing to the Scottish Wildcat Conservation Action Plan, this project will develop a wildcat camera trap survey with support from partners and landowners to check for and document any wild cat presence on areas where there are these repeated anecdotal reports of sightings. Locations could include west Strathyre, TGTF, QEFP Achray and Ard Forests and Glen Kinglas. If partner agreement and support, it is anticipated that surveys would commence in 2014.
Project Outputs	Species survey information
Partners (Lead organisation in bold)	**NPA**, FCS, SNH, land managers
Project Status (updated October 2015)	● **Project behind schedule** Cameras have been purchased and an initial partnership meeting held. A Project Initiation Document has been produced with the initial start date delayed until Q4 of 15/16
Start Date	2014
End Date	2017
Map	Park wide

Project 14: Trossachs Water Voles

Project Description	Water Voles have been in decline throughout the National Park and the UK as a whole since the early 1990s due to a combination of reasons, including predation by mink, and degradation of available habitat. This project builds on the successful Trossachs Water Vole Reintroduction Project and will continue to monitor the reintroduced populations and manage the habitats of the project area. In order to assess the extent of the spread of the Water Vole population outwith this area, further Water Vole surveys would be undertaken of adjacent sites which have suitable habitat for Water Voles. Targeted mink control will also be undertaken.
Project Outputs	Species Survey Information, Mink Control
Partners (Lead organisation in bold)	**FCS**, NPA, National Park volunteers, RZSS, SNH
Project Status (updated October 2015)	● **Project ~~completed or~~ progressed on schedule** A successful training day was held in April recruiting 11 new volunteers to the project. 17 volunteers took part in 22 surveys in 2015. Water voles are thriving and continuing to expand into new areas around much of the core release area. They will continue to colonise good habitat as long as mink are controlled in and around their new distribution. There have been no signs of mink or any mink caught within the original project area/re-introduction area of the Loch Ard Forest which is good news. (see Mink Forum update for further update on Mink across wider area). New areas will be surveyed next year to track the expansion of the water voles, whilst also re-visiting known sites.
Start Date	2012
End Date	2017
Map	***Click here to view an interactive map***

Project 15: Water Voles across the National Park

Project Description	Surveys would also be carried out at other sites where there are known water vole populations within the National Park such as Glen Dochart. The results of these surveys would determine where there are other viable existing populations and highlight potential areas where further habitat work can be prioritised across the National Park. Targeted mink trapping with the use of monitoring rafts may also be carried out. An initial project meeting to prioritise surveys will be held by March 2014, and subsequent surveys undertaken in 2014/15
Project Outputs	Species Survey Information, Mink Control
Partners (Lead organisation in bold)	**Trossachs Water Vole Partnership (NPA, FCS, NP Volunteers)**
Project Status (updated October 2015)	● **Project ~~completed or~~ progressed on schedule** Three surveys have been carried out of potential areas holding water vole populations in Glen Dochart. Two new populations have been found, bringing the total number of known populations in the Glen Dochart area of the National Park to four. Further sites will be surveyed in 2016.
Start Date	2014
End Date	2015
Map	Park wide

Project 16: Freshwater Mammals Sightings

Project Description	This project will raise awareness of freshwater mammals including mink, water voles and otters within the National

	Park, and highlight the work currently being undertaken to reintroduce water voles in the Trossachs. A sightings database will be created, with the general public encouraged to report sightings of these aquatic mammals. Opportunities will be taken where appropriate to engage with visitors and communities at events, and undertake curriculum based education at local schools. As well as building up a picture of populations of our native and non-native freshwater mammals for strategic INNS projects, this work will also help advise planning applications where relevant. Sightings maps will be produced annually and data fed into national surveys and the National Biodiversity Network Gateway. It is aimed to raise awareness of the project at 2-3 events annually.
Project Outputs	Species Records
Partners (Lead organisation in bold)	**NPA**, General Public, RAFTS
Project Status (updated October 2015)	● **Project not progressed** Project has not progressed, initial meetings are scheduled to progress the project. Re-scheduled to 2016/17.
Start Date	2013
End Date	2020
Map	Park wide

Project 17: National Park Black Grouse Monitoring

Project Description	This project is a continuation of the annual black grouse lek counts and surveys which have been undertaken across the National Park in previous years, and aims to determine black grouse populations and distribution across the Park. In addition to the long term monitoring of both FCS lek sites and those on private land, further lek searches will also be carried out across the National Park using a co-ordinated approach

	of searching within prioritised 5km squares. Updated information on distribution will be used to inform assessment of forestry and development proposals, as well as RDC applications which could affect black grouse.
Project Outputs	Species Survey Information
Partners (Lead organisation in bold)	**RSPB**, NPA, FCS
Project Status (updated October 2015)	● **Project ~~completed or~~ progressed on schedule** Six 5km x 5km square surveys have been undertaken across the National Park and 5km buffer area. Five of these squares were fixed. Of the fixed squares, numbers of lekking males were down by 18% with an increase in 1 lek. Out with the fixed squares, the numbers of lekking males counted at leks was slightly up from 2014 to 2015.
Start Date	2012
End Date	2020
Map	Park wide

Project 18: Habitat Enhancement for Black Grouse

Project Description	Management programmes have been produced for areas of FCS land with active black grouse leks. This project will continue with the implementation of these recommendations which will enhance available black grouse habitat. These recommendations include: Restructuring of upper edges of plantations, grazing management, fence marking and predator control. Annual monitoring of the black grouse population at Loch Katrine will also be undertaken.
Project Outputs	Habitat Enhancement
Partners (Lead organisation in bold)	**FCS**
Project Status (updated October 2015)	● **Project ~~completed or~~ progressed on schedule**

	Project is on-going, woodland creation and grazing of leks is continuing.
Start Date	2012
End Date	2017
Map	***Click here to view an interactive map***

Project 19: Callander Black Grouse

Project Description	Nine key lek management appraisals of largely private land were produced by FWAG for SNH, NPA and RSPB. This SRDP funded project aims to stabilise and ideally increase the Black grouse population across 5 estates within one of these areas, which is situated between Callander and Loch Earn. Outputs of the project involve habitat management for black grouse including bracken spraying and native woodland expansion. On-going advice and support is provided by the National Park Authority and lek counts and searches are undertaken on an annual basis. The outcomes of the project will be reviewed in 2017. Provided there is sufficient land manager support and subject to funding, the project may be continued for a further 5 years, and possibly expanded to include new areas elsewhere in the National Park.
Project Outputs	Habitat Management, Species Conservation
Partners (Lead organisation in bold)	**NPA**, RSPB, Land managers, SNH, SEPA
Project Status (updated October 2015)	🟡 **Project behind schedule** Monitoring in 2015 indicates population remains low. Assessment of habitat improvement and other effects of management to be undertaken as part of discussion with land managers re potential SRDP applications for contract renewal

	from 2016. Attention required re resource availability to make this happen.
Start Date	2012
End Date	2017
Map	***Click here to view an interactive map***

Project 20: Farmland Wader Management

Project Description	The populations of wading birds such as lapwing, snipe, redshank and curlew have declined, not only across the National Park, but throughout the UK as a whole over recent years. This SRDP funded project involves habitat management for wading birds along low lying ground of the Glen Finglas Estate. This 5 year project aims to stabilise or increase the wading bird population at these sites.
Project Outputs	Habitat Management & Species Conservation
Partners (Lead organisation in bold)	**WTS**
Project Status (updated October 2015)	**Project behind schedule** Habitat management is continuing for waders, however, numbers are low and some of the habitat is under grazed. WTS are working on increasing the grazing pressure on Milton Low ground. Believed wader decline is part of a wider trend.
Start Date	2012
End Date	2017
Map	***Click here to view an interactive map***

Project 21: Glen Dochart Wader Project

Project Description	The Glen Dochart Wader Project covers an area of 335 ha in the north of the National Park. Originally a stronghold for farmland waders such as snipe, lapwing, redshank, curlew and oystercatcher, numbers of these birds have shown a rapid decline in recent years, not only across the National Park but across the UK as a whole. This project aims to stabilise and ideally increase the population of breeding waders. Working with four farm businesses across Glen Dochart, Land Management Advisers from Loch Lomond & The Trossachs National Park Authority helped to develop successful SRDP funding applications with the farms now in five year contracts to manage their land to improve the habitat for these birds. Measures include grazing management, re-profiling of drainage ditches, and installation of sluices to raise water levels. The outcomes of the project will be reviewed in 2015. Provided there is sufficient land manager support and subject to funding, the project may be continued for a further 5 years.
Project Outputs	Habitat Management & Species Conservation
Partners (Lead organisation in bold)	**NPA**, RSPB, Land managers, SNH, SEPA
Project Status (updated October 2015)	● **Project ~~completed or~~ progressed on schedule** Results from 2015 monitoring show 86% increase in breeding pairs from baseline year of 2010, although 5% decline from 2013. Land managers informed with targeted advice. Two SRDP applications submitted in 2015 – outcome expected late 2015. Number of issues experienced arising from new SRDP. Discussions required with remaining two holdings re whether they wish to apply for SRDP contract renewal in 2016.
Start Date	2011
End Date	2015
Map	***Click here to view an interactive map***

Project 22: WeBs And BBS Surveys

Project Description	At present National Park Rangers and National Park volunteers carry out National BTO bird surveys including WeBs and BBS. The results of these surveys not only provide information on populations and distribution of birds across the National Park, but also monitor populations and trends across Scotland and the UK as a whole. As well as on-going surveys, this project will seek to identify gaps in survey coverage in the National Park, and match National Park staff and volunteers to these areas. Training sessions will be run if required.
Project Outputs	Species Survey Information
Partners (Lead organisation in bold)	**BTO**, RSPB, NPA, National Park Volunteers
Project Status (updated October 2015)	● **Project ~~completed or~~ progressed on schedule** Project is on-going with surveys continuing across the National Park by staff and volunteers. Gaps have been identified and will potentially look to be filled in 2016/17 by volunteers.
Start Date	2014
End Date	2020
Map	Park wide

Project 23: What's Up?

Project Description	Factors such as climate change, grazing management and afforestation are all affecting the biodiversity of the upland ecosystems within the National Park. This Scotland wide project seeks to engage volunteers in monitoring upland wildlife, with a particular focus on birds. Involving National Park volunteers within this project will help us monitor effects of these changes across the upland areas of the National Park, whilst also contributing to the project aims across Scotland as a whole.
Project Outputs	Species Survey Information
Partners (Lead organisation in bold)	**BTO**, NPA
Project Status (updated October 2015)	● **Project completed** ~~or progressed on schedule~~ **Project completed** successfully
Start Date	2013
End Date	2015
Map	***Click here to view an interactive map***

Project 24: Scottish Dragon Finder Amphibian and Reptile Events

Project Description	The Scottish Dragon Finder Project aims to work across the whole of Scotland to increase the dataset of amphibian and reptile records; increase suitable habitat for amphibians and reptiles and raise awareness of amphibian and reptile conservation. By holding a number of educational events within the National Park, it is hoped to raise awareness and gain a better understanding of the distribution of priority amphibians and reptiles across the National Park and throughout Scotland.
Project Outputs	Public Engagement
Partners (Lead organisation in bold)	**Froglife**
Project Status (updated October 2015)	● **Project** ~~completed or~~ **progressed on schedule** An amphibian and reptile event was held in June at Cashel East Loch Lomond. Froglife also took part in a Bioblitz in August. Additional dates for activities across the National Park are being scheduled.
Start Date	2013
End Date	2018
Map	No map required

Project 25: Lepidoptera Surveys

Project Description	This project will involve a programme of butterfly and moth surveys co-ordinated by Butterfly Conservation Scotland and undertaken by volunteers and land managers to survey and monitor key species within the National Park. Species include pearl bordered fritillary, welsh clearwing, mountain ringlet, rannoch brindled beauty and argent & sable. Knowledge of the presence of these species will help inform and direct appropriate habitat management decisions. Surveys for pearl bordered fritillary at Loch Katrine will take place each year to define the breeding areas, and will then be followed by implementation of a monitoring plan. Surveys for mountain ringlet will also take place on an annual basis to define the breeding areas, and will then be followed by implementation of a monitoring plan.
Project Outputs	Species Survey Information
Partners (Lead organisation in bold)	**Butterfly Conservation Scotland**, FCS, NPA, National Park Volunteers
Project Status (updated October 2015)	● **Project behind schedule** Surveys for Pearl Bordered Fritillaries have continued at Loch Katrine. Surveys for additional species have also been undertaken across a wider area.
Start Date	2014
End Date	2020
Map	Park wide

Project 26: Lichen Surveys

Project Description	Lobaria pulmonaria (Tree lungwort) is found mainly in Scotland, particularly the west coast, where the wetter climate provides the moisture it requires to thrive. South of the border, tree lungwort has been greatly reduced in range since the 19th century because of atmospheric pollution and is now restricted mainly to a few sites in the Lake District, Wales and the southwest of England. The presence of this species indicates sites of ancient woodland. This partnership project with Plantlife Scotland involves National Park volunteers surveying historical sites within the park area for this species. Volunteers received training from Plantlife Scotland and are supported by National Park Rangers.
Project Outputs	Species Survey Information
Partners (Lead organisation in bold)	**Plantlife Scotland**, NPA, NP volunteers, FCS
Project Status (updated October 2015)	● **Project ~~completed or~~ progressed on schedule** The main survey was completed in 2013. Discussions to take place with NPA to determine re-surveying areas in approximately 2 years time.
Start Date	2012
End Date	2013
Map	Park wide

Project 27: Fungi, Lichen and Bryophyte Management

Project Description	Argyll and Bute is one of the most important locations in the world for its diversity of lichens, however, they are currently under recorded. Training events will be run for both novices and those wishing to take their skills further still in order that recording of lichens can be increased in this area of the National Park.
Project Outputs	Public Engagement

Partners (Lead organisation in bold)	**British Lichen Society**
Project Status (updated October 2015)	**Unknown** No update received
Start Date	2014
End Date	2014
Map	No map required

Project 28: Butterfly Orchid Monitoring

Project Description	This long term monitoring project will look at the population dynamics of both greater and lesser butterfly orchid in managed grasslands at prioritised sites across the Callander area. The results of these surveys will feed into local recording schemes.
Project Outputs	Species Survey Information
Partners (Lead organisation in bold)	**Plantlife Scotland**, Callander's Countryside
Project Status (updated October 2015)	● **Project ~~completed or~~ progressed on schedule** This project is on-going. Hoped to have discussions regarding conservation management with land manager in 2016.
Start Date	2012
End Date	2020
Map	***Click here to view an interactive map***

Project 29: Endrick and Blane INNS

Project Description	This project aims to reduce the number of riparian invasive non-native species along the riverbanks of the Blane and Endrick. A controlled eradication and monitoring framework will be set up, with surveys and eradication being carried out by volunteers. The project is confirmed for year 1.
Project Outputs	INNS Control
Partners (Lead organisation in bold)	**LLFT**
Project Status (updated October 2015)	**Unknown** Distribution and abundance surveys of Japanese knotweed, giant hogweed and Himalayan balsam along the Endrick and Blane Water were completed in 2012. Eradication methodologies were researched and a project strategy was designed between 2012-2014. Intensive eradication has

	been applied to INNS within prioritised areas of the Blane Water and Endrick Water in 2014 and 2015. Monitoring of project progress has occurred throughout the eradication season.
Start Date	2012
End Date	2013
Map	Still to be supplied

Project 30: Rhododendron Control

Project Description	A strategic Rhododendron ponticum control project will be set up initially assessing target areas which link existing control sites and significant islands of Rhododendron habitat across the park. The aim of the project is to assess the feasibility of a third sector SRDP application in 2014 for target sites. The scope of the potential uptake of such a scheme by landowners will be considered and the risks involved in engaging in a collaborative contract identified. Options for key areas of private land not eligible for uptake of funded Rhododendron control will be assessed.
Project Outputs	INNS Control
Partners (Lead organisation in bold)	**Loch Lomond & The Trossachs Countryside Trust**, NPA, FCS, SNH, land managers
Project Status (updated October 2015)	● **Project ~~completed or~~ progressed on schedule** The project is on target and on-going with key sites at Stronachlachar and Loch Lomond Golf Course.
Start Date	2013
End Date	2020
Map	Park wide

Project 31: Response of Bryophytes to Rhododendron Removal

Project Description	This project will involve on-going monitoring to determine the response of important oceanic bryophyte communities to Rhododendron removal. The project will be carried out in conjunction with National Park volunteers at Hilary's Wood in the Cowal area of the National Park.
Project Outputs	Research Information
Partners (Lead organisation in bold)	**Plantlife Scotland**, NPA
Project Status (updated October 2015)	🟡 **Project behind schedule** No progress made in 2015.
Start Date	2012
End Date	2020
Map	***Click here to view an interactive map***

Project 32: INNS Reporting Systems

Project Description	This project will increase public sightings of INNS across the National Park, whilst also helping to raise awareness of and improve early detection of all species. Web-based database and recording apps will be produced to allow the general public to easily report on freshwater and marine invasive plants and animals. International best practice on biosecurity in the marine environment will be sought, and a practical guide published.
Project Outputs	Public Engagement
Partners (Lead organisation in bold)	**RAFTS**, CEH, GBNNSS, Clyde Forum, SNH
Project Status (updated October 2015)	🟢 **Project completed or progressed on schedule** The INNS work has been **completed** and converted into Marine Biosecurity Planning Guidance and can be found on the SNH website.
Start Date	2012
End Date	2013
Map	Park wide

Project 33: Forth INNS Programme - Phases 1 & 2

Project Description	The spread of Invasive Non-Native Species is known to be one of the greatest threats to our biodiversity. Working on a catchment wide approach, this two phase project aims to survey and control invasive non-native species within the Forth catchment area both within and outside Loch Lomond & The Trossachs National Park. Priority species being

	targeted include giant hogweed, Japanese knotweed, American skunk cabbage and American mink. This project aims to train a group of volunteers to undertake both monitoring and control of surveyed species and will also raise awareness of the threat of INNS through an outreach education programme.
Project Outputs	INNS Control
Partners (Lead organisation in bold)	**RFFT**, LEADER – Forth Valley Lomond LAG, Tyne-Esk LAG, West Lothian LAG
Project Status (updated October 2015)	● **Project** ~~completed or~~ **progressed on schedule** INNS Reporting – Although this is shown as completed, the website is still live and used as part of FINNS, RFFT has paid for the updating of the site until 2017. FINNS 1 & 2 – **Project completed** FINNS 3 now underway and **proceeding** as required despite a late start and due for successful conclusion at the end of March 2016. FINNS 4 is under development and has already received some pledges of funding support, to start April 2016 until March 2017.
Start Date	2012
End Date	2014
Map	***Click here to view an interactive map***

Project 34: INNS Tay Catchment

Project Description	Working on a catchment scale, this project aims to identify and eradicate colonies of four invasive non-native plants within the headwater catchment of the Tay. Target species are Japanese knotweed, Himalayan balsam, giant hogweed and American skunk cabbage. National Park Volunteers are working with land managers to chemically spray or physically

	remove colonies as well as monitoring effectiveness and walking the catchment to identify, record and then treat additional colonies. Volunteers and a number of land managers are installing mink rafts throughout the area during 2013. These will be monitored for signs of mink and otter activity. Where mink are shown to be present and land owners are in agreement mink traps will be set. The vision for this catchment is that key invasive plant species are eradicated and can no longer seed down river and that mink are monitored and controlled as required.
Project Outputs	INNS Control
Partners (Lead organisation in bold)	**NPA**, SEPA, Land managers, Local community groups and NP volunteers
Project Status (updated October 2015)	● **Project ~~completed or~~ progressed on schedule** The fourth season of INNS control has been completed (September 2015). 87 sites were treated with the number of locations showing no regrowth rising from 14 in 2014 to 33 in 2015. 7 trained volunteers completed a total of 77 hours of INNS eradication work. No Giant hogweed was recorded in the entire Upper Tay IINNS catchment area in 2015. Mink monitoring continues with mink prints recorded on 4 rafts in 2015.
Start Date	2012
End Date	2020
Map	***Click here to view an interactive map***

Project 35: INNS Control - The Great Trossachs Forest

Project Description	This project aims to eradicate invasive non-native species across The Great Trossachs Forest Project area. Species targeted for control include Rhododendron ponticum, American mink and Japanese knotweed. INNS on adjacent land out with the partnership area will also be targeted where possible.
Project Outputs	INNS Control
Partners (Lead organisation in bold)	**TGTF**
Project Status (updated October 2015)	● **Project ~~completed or~~ progressed on schedule** Ongoing INNS control.
Start Date	2014
End Date	2017
Map	***Click here to view an interactive map***

Project 36: Canada Goose Management

Project Description	This project would assess the distribution and trends in the Canada goose population in the National Park using data from an annual programme of WeBs counts. An assessment would then be made of the impacts being caused to agriculture, ecosystems or native wildlife. Where required, suitable control measures would then be identified and implemented. Controls might be a combination of scaring, shooting, pricking eggs or oiling eggs. Habitat management such as fencing or hedge planting to make locations such as nesting or roosting sites less attractive may also be undertaken.
Project Outputs	Species Information
Partners (Lead organisation in bold)	**NFUS**, NPA, SNH, landowners
Project Status (updated October 2015)	● **Project not progressed** This project has not progressed.
Start Date	2014
End Date	2017
Map	No map required

Project 37: National Park Mink Control Forum

Project Description	In order to carry out coordinated control of mink across the catchments within the National Park, it is proposed that a Mink Control Forum is set up with partner organisations including CNPA, FCS and SNH. The forum will share information on mink sightings and current mink control projects already happening, and explore scope for more coordination and possible expansion of work, in particular the scope for extending the Cairngorms and NE Scotland control programme across the rest of the Tay catchment and

	LLTNP. If there is support it is proposed to develop and implement a control programme.
Project Outputs	INNS Control
Partners (Lead organisation in bold)	**NPA**, SNH, CNPA, FCS, Fishery Trusts
Project Status (updated October 2015)	● **Project ~~completed or~~ progressed on schedule** Partners involved in controlling mink have met this year to discuss mink control with particular emphasis on the TWVP area. A strategy to control mink in an extended area has been proposed along with resource requirements to take this forward. The River Forth Fisheries Trust is now a project partner in the Trossachs Water Vole Project. Additional mink police have been provided via the FINNS3 project and discussions are on-going to support an extension of the project to provide additional buffers and link to other projects. There have been several (10+) mink caught on the Teith between Doune and Callander – extra effort will be put into firming up mink control in this area. There have been repeated mink signs in Brig O Turk but so far the animal(s) has not been caught. Three mink have been caught on Lake of Menteith and a plan for mink monitoring and control has been agreed for the lake next year. There have been reports of mink and signs of mink on the Endrick catchment – the TWVP will continue to work with local landowners here to improve the network of mink rafts and mink control in this area. Mink monitoring continues as part of the Upper Tay INNS project, with mink prints recorded on 4 rafts in 2015.
Start Date	2013
End Date	2017
Map	Park wide

Project 38: Habitat Improvements for Priority Species

Project Description	The deployment of 100 cattle into the Loch Katrine area as a grazing tool for habitat management will help improve the ecological diversity of both woodlands and open areas. This project aims to improve the habitat for key species such as pearl bordered fritillary at identified sites. By monitoring vegetation across the project area, it is hoped that habitat improvements can be made resulting in multiple ecological benefits.
Project Outputs	Habitat Management
Partners (Lead organisation in bold)	**FCS**
Project Status (updated October 2015)	● **Project ~~completed or~~ progressed on schedule** This project is on-going and has expanded from Loch Katrine into Loch Ard Forest.
Start Date	2012
End Date	2020
Map	***Click here to view an interactive map***

Project 39: Wood Pasture Restoration & Management

Project Description	Glen Finglas was once covered with alder, birch, oak, hazel, rowan and willow, but over the centuries the ancient woodland has been reduced to scattered remnants. This project focuses on the long term vision for Glen Finglas, which is to restore wood pasture across the estate creating a vast mosaic of woodland, scattered trees and open ground.
Project Outputs	Habitat Management
Partners (Lead organisation in bold)	**WTS**
Project Status (updated October 2015)	● **Project ~~completed or~~ progressed on schedule** Woodland Trust Scotland continue attempts to restore wood pasture. Current threats are continued over-browsing of young trees by deer, and by contrast under grazing of older wood pasture leading to excessive epicormic growth. However, WTS are seeing some natural regeneration of individual and small groups of trees which should be proven by the results of ongoing monitoring. Hope that the work will be continued in SRDP 2014-20 scheme being drafted.
Start Date	2014
End Date	2017
Map	***Click here to view an interactive map***

Project 40: East Loch Lomond Native Woodland Conversion

Project Description	FCS land to the east of Loch Lomond totals approximately 1,899 ha, of which half is tree covered. This project will continue with the restructuring of plantation forests on the east side of Loch Lomond to native woodland. This will not only be an improvement in landscape terms, but will also improve the habitat for species such as black grouse to thrive in. In this plan period, it is estimated a further 46 ha will be felled and allowed to revert to native woodland at Sallochy and Rowardennan, with the possibility of 20 ha at Ptarmigan.
Project Outputs	Habitat Restoration
Partners (Lead organisation in bold)	**FCS**
Project Status (updated October 2015)	● **Project ~~completed or~~ progressed on schedule** Plans are in place to fell some 28 ha of non- native conifers above the eastern shores of Loch Lomond. The woodland will then be replanted or regenerated with native woodland. This will improve the woodland habitat network on the east side of the National Park, contributing to the Woodland Habitat Network Wild Challenge.
Start Date	2014
End Date	2017
Map	***Click here to view an interactive map***

Project 41: Woodland Regeneration in Coire Corrach

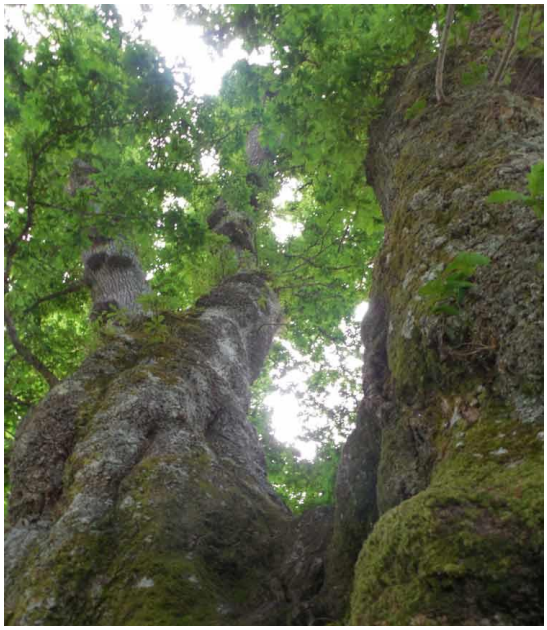
Project Description	This project is a continuation of a native woodland regeneration project started in 1990 to increase the area of native woodland across the Central Coire Corrach area of the Ben Lomond site. New exclosures will be created and old exclosures removed or reduced. This will allow year round targeted grazing throughout. The target for woodland expansion is from 12 ha at present to 15 ha in next 15 years.
Project Outputs	Woodland Management
Partners (Lead organisation in bold)	**NTS**
Project Status (updated October 2015)	● **Project ~~completed or~~ progressed on schedule** The area is now in its 5th growing season since wintering sheep were removed, and the dwarf shrub communities are responding well. NTS are already seeing many of the higher knolls re-colouring with the dark of heather, and blaeberry is coming through strongly too. There is still heavy browsing of trees by deer though; although tree numbers are high from rootstock - around 3K to 6K/ha - browsing is still about the

	30% to 50% on shoots so there is a small incremental gain in height but very slow. On-going discussions with FCS.
Start Date	1990
End Date	2020
Map	***Click here to view an interactive map***

Project 42: Gleann a'Chlachain Mountain Woodland - Biodiversity Monitoring

Project Description	This project will see what impact the establishment of mountain woodland has had on the biodiversity of the glen. It is important to know what impact woodland establishment at high altitude in areas that have been un-wooded for many decades will have on biodiversity and the landscape. The project will involve bird and vegetation monitoring in the Gleann a'Chlachain mountain woodland at SRUC Kirkton. Monitoring was carried out at the start of the woodland project in 2000 and this will be repeated (subject to funding) to establish further changes. Since the woodland is at high altitude (350-550m) tree growth has been slow so the monitoring is unlikely to be carried out until after 2015. Monitoring of the trees within the woodland is being carried out (summer 2013) and this will provide information on the viability of planting woodland at high altitude in the National Park.
Project Outputs	Survey Information
Partners (Lead organisation in bold)	**SRUC**
Project Status (updated October 2015)	● **Project ~~completed or~~ progressed on schedule** SRUC are hoping to include some of the proposed biodiversity monitoring in the Gleann a'Chlachain mountain woodland as part of some new Scottish Government funded research being tendered for, starting in 2016. May move from Provisional to Confirmed. The tree monitoring was carried out in summer 2013 and data from this monitoring has been presented at a Farm Woodland Forum conference and will be included in a future issue of 'Scrubbers Bulletin'.
Start Date	2015
End Date	2020
Map	***Click here to view an interactive map***

Project 43: Heritage Tree Management & Replacement Programme



Project Description	This project will interpret and help promote important heritage trees in the National Park. It will also help identify and action opportunities to replace examples of key specimen trees which enhance the landscape and biodiversity around the towns, villages and settlements of the Park. Landowners, community groups, organisations or individuals will be eligible to apply for funding. Examples of work will include interpretation, individual arboricultural remedial work, trees for planting, tree guards, etc.
Project Outputs	Woodland Management
Partners (Lead organisation in bold)	**Loch Lomond & The Trossachs Countryside Trust,** NPA, FCS, land managers
Project Status (updated October 2015)	**Project behind schedule** This project is on-going – project objectives currently being re-assessed.
Start Date	2013
End Date	2014
Map	Park wide

Project 44: Tree Health in the National Park

Project Description	National Park Rangers will work with local communities and National Park volunteers to firstly raise awareness of tree health issues within the Park. Volunteers will then be asked to engage in a citizen science survey led by FCS which will provide information on the condition of our trees. The Ranger team will provide basic training and information and FCS will

	provide field guides.
Project Outputs	Public Engagement
Partners (Lead organisation in bold)	**NPA**, FCS, Communities, NP volunteers, land managers
Project Status (updated October 2015)	🟡 **Project behind schedule** Initial training delivered to Ranger Team Leaders in 2015.
Start Date	2013
End Date	2015
Map	Park wide

Project 45: Ben Lomond Juniper Restoration

Project Description	Juniper and other sub montane scrub species such as dwarf willows are largely absent from the National Park and are in decline across the UK. Fragmented populations do, however, remain across the National Park, and this project on Ben Lomond aims to increase one of these remaining populations from one plant to a minimum of 50 across a 100m radius.
Project Outputs	Species Conservation
Partners (Lead organisation in bold)	**NTS**
Project Status (updated October 2015)	🟢 **Project ~~completed or~~ progressed on schedule** Survival rate of planted junipers taken from cuttings is approximately 80%, with good new growth evident. This is above the target of 50 juniper plants growing in the vicinity of the last Ben Lomond plant.
Start Date	2009
End Date	2015
Map	***Click here to view an interactive map***

Project 46: Juniper Assessment Survey

Project Description	This project will carry out an assessment of the abundance and condition of juniper that lies within the National Park, but out with the National Forest Estate. Working in conjunction with National Park Rangers and National Park volunteers, prioritised areas where juniper is known to be present will be surveyed and health and condition assessed. This will provide a baseline for future restoration of this fragile species. Initial training will be provided. There will then follow a promotional aspect of this project to encourage reporting of additional populations of juniper within the National Park area.
Project Outputs	Species Survey Information
Partners (Lead organisation in bold)	**Plantlife Scotland**, NPA, NP volunteers
Project Status (updated October 2015)	**Project behind schedule** Second training session in Dec 2014. All sites identified and assigned to volunteers, however, no further progress made. Project re-scheduled to 2016/17.
Start Date	2013
End Date	2014
Map	Park wide

Project 47: Montane Scrub Restoration - The Great Trossachs Forest

Project Description	Sub-montane scrub plant communities with dwarf willows and juniper are largely absent in the National Park. This project will involve initial surveys to assess the extent of this existing habitat across The Great Trossachs Forest Project Area. Possible follow up restoration projects at suitable sites where herbivore grazing pressure is low enough may be

	identified in the future.
Project Outputs	Species Survey Information & Restoration
Partners (Lead organisation in bold)	**TGTF**
Project Status (updated October 2015)	● **Project ~~completed or~~ progressed on schedule** Surveying has been completed and it is hoped that the first phase of works will commence in Spring 2016. The first phase will include 22 hectares of sub-montane planting going up and down the ridge between Groddach (WTS) and Primrose Hill (FCS).
Start Date	2017
End Date	2020
Map	***Click here to view an interactive map***

Project 48: Natural Habitat Regeneration on Lower Ptarmigan

Project Description	This project aims to increase natural regeneration of species such as dwarf willow over a 60 ha area on Lower Ptarmigan. Vegetation monitoring shows scattered and patchy tree growth, reliant on natural regeneration. With the removal of winter stock grazing, and further monitoring of deer numbers, it is hoped to increase the natural regeneration of some of these sub montane species.
Project Outputs	Habitat Management
Partners (Lead organisation in bold)	**NTS**
Project Status (updated October 2015)	● **Project ~~completed or~~ progressed on schedule** Project progressing (Please see progress on Project 23.41).
Start Date	2010
End Date	2030
Map	***Click here to view an interactive map***

Project 49: Rest & Be Thankful A83 Tree Planting To Help Mitigate Landslips

Project Description	The aim of this project is to establish approximately 100 ha of woodland, composed principally of native species, with the objective of helping to stabilise the hill slopes above the A83 at the Rest & be Thankful and thus help mitigate landslips onto the public highway. There will be secondary but significant woodland habitat network benefits as well.
Project Outputs	Habitat Management

Partners (Lead organisation in bold)	**FCS**, Transport Scotland, landowner
Project Status (updated October 2015)	● **Project ~~completed or~~ progressed on schedule** Planning for this is progressing, work hoping to start in 2016/17.
Start Date	2014
End Date	2018
Map	***Click here to view an interactive map***

Project 50: NTS Blanket Bog Restoration

Project Description	Continuing on from the success of previous restoration work funded by the National Park Authority at Mon Eich, this project aims to identify suitable additional areas for peatland restoration across 30 + hectares of the Ben Lomond property. By damming muir grips and subsequently raising the surface water level, this will result in habitat improvements for a number of priority species including black grouse.
Project Outputs	Habitat Management
Partners (Lead organisation in bold)	**NTS**
Project Status (updated October 2015)	● **Project ~~completed or~~ progressed on schedule** The proposed project funded through the Green Stimulus Scheme was completed, including experimental machine work on steeper grips which has proved very successful. A pre and post study by the Crichton Carbon Centre estimated that the work over the 22ha of the project has reduced carbon release by the equivalent of three and a half diesel engined vehicles, doing around 18K miles, per year. Work continues through volunteer efforts.
Start Date	2009
End Date	2019
Map	***Click here to view an interactive map***

Project 51: National Park Peatland Restoration

Project Description	Restoring peatland habitat which has been drained or damaged will help ensure these areas remain as long term carbon sinks which will help to reduce carbon emissions into the atmosphere. These fragile habitats are also important for wildlife. This project is currently funded by the NPA and SNH via SG Green Stimulus Fund and consists of the following

	three phases: **Phase 1** - A desktop study to assess the extent and condition of the peatland resource within the park. **Phase 2** - This phase of the project will focus on 2 areas identified as a priority in Phase 1 and will involve working with land managers to identify and specify cost effective solutions. A report of costs and site specific specifications will also be produced. **Phase 3** - This phase will implement practical management works including ditch blocking, grazing management etc. subject to available funding and land manager agreement.
Project Outputs	Research, Costed Action Plans, Habitat Restoration
Partners (Lead organisation in bold)	**NPA**, Land managers, NTS, SNH
Project Status (updated October 2015)	● **Project ~~completed or~~ progressed on schedule** In 2015/2016, progress has been made on two peatland restoration areas in the National Park working with SRUC and Luss Estates. A further funding bid has been successful to take forward four peatland restoration sites before the end of the financial year 2015/216.
Start Date	2013
End Date	2017
Map	***Click here to view an interactive map***

Project 52: Heather Moorland Management

Project Description	Upland heathland is a UKBAP priority habitat and supports a large number of priority species including black grouse. Factors limiting heather moorland across the Glen Finglas Estate and across the National Park area include widespread and long term grazing by sheep, bracken encroachment and afforestation. This project is a Scotland Rural Development Fund five year funded project which seeks to manage the habitat of the open hill to restore heather.
Project Outputs	Habitat Management
Partners (Lead organisation in bold)	**WTS**
Project Status (updated October 2015)	● **Project ~~completed or~~ progressed on schedule** The reduction in sheep grazing and reduced deer browsing is allowing for recovery of e.g. dwarf heath shrub communities. It is hoped this work will continue in an SRDP 2014-20 scheme currently being drafted.
Start Date	2012
End Date	2017

Map	Park wide

Project 53: Ben Lomond Grazing Project

Project Description	Historic long term grazing by sheep and deer at levels which limit heather growth are one of the factors limiting the biodiversity of upland habitats across the National Park. This project on Ben Lomond will seek to reduce sheep numbers whilst undertaking long term vegetation monitoring giving grazing utilisation rates to steer management.
Project Outputs	Habitat Management
Partners (Lead organisation in bold)	**NTS**
Project Status (updated October 2015)	🟡 **Project behind schedule** This is a looser project, trying to take into account the general approach at Ben Lomond with balancing grazing use. NTS have made a lot of progress, and the general conclusion is that most areas and habitats are either in, or moving to, favourable/recovering status in SSSI terms. The main problem is the summit area, and a couple of dry heath areas, where localised, intensified grazing is still a problem in the height of summer. Still looking to a solution for this.
Start Date	1996
End Date	2020
Map	***Click here to view an interactive map***

Project 54: Vegetation Monitoring Of Open Ground

Project Description	Vegetation monitoring will be undertaken across the Great Trossachs Forest project area to determine herbivore grazing impacts. Methodologies will be site specific based on project outcomes of open ground and will contribute to individual herbivore management plans, steering grazing levels into the future.
Project Outputs	Habitat Management
Partners (Lead organisation in bold)	**TGTF**
Project Status (updated October 2015)	🟢 **Project** ~~**completed or**~~ **progressed on schedule** All partners progressing with respective monitoring across TGTF project area.
Start Date	2012
End Date	2020
Map	***Click here to view an interactive map***

Project 55: Cattle Radio-tagging

Project Description	The open ground areas across Glen Finglas Estate are currently grazed by a combination of red deer, Luing or Sim-Luing cattle and sheep. This project involves radio tagging cattle in order to determine their movement within the estate. This increased knowledge of their grazing behaviour will feed into the estate grazing management plan and determine optimum grazing levels for the restoration and management of wood pasture.
Project Outputs	Habitat Management
Partners (Lead organisation in bold)	**WTS**
Project Status (updated October 2015)	● **Project behind schedule** This project is behind schedule due to staff changes, but it is hoped will get back on track.
Start Date	2014
End Date	2017
Map	***Click here to view an interactive map***

Project 56: Management of Brig O'Turk Mire

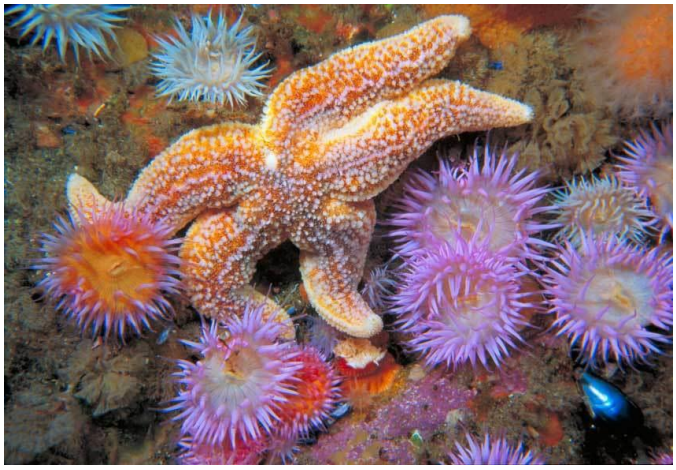
Project Description	The Brig o' Turk Mires is a Site of Special Scientific Interest and is considered to be one of the best valley mires in Central Scotland. It is comprised of a relatively undisturbed and extensive valley mire system with adjacent fens and groundwater flushes, and drier slopes dominated by grassland communities and open birchwood. The Brig O'Turk Mire supports a rich biodiversity of plants, birds and invertebrates, many of which are priority species. This project

	involves the continued management of the mire in order to maintain its favourable status.
Project Outputs	Habitat Management
Partners (Lead organisation in bold)	**WTS**
Project Status (updated October 2015)	● **Project ~~completed or~~ progressed on schedule** The focus on reducing run off in to the mires from cattle feed stances and on-going seasonal cattle grazing suggests the mire is still in favourable condition. This work will be continued in an SRDP 2014 to 2020 agri-environment scheme recently rolled over from the old SRDP for management of this area.
Start Date	2012
End Date	2017
Map	***Click here to view an interactive map***

Project 57: Marine Wildlife Sightings Scheme

Project Description	This project is a nationwide scheme encouraging members of the public to use an online recording system to report ad-hoc sightings of basking sharks, jellyfish and turtles. Posters and online resources are available.
Project Outputs	Species Survey Records, Public Engagement
Partners (Lead organisation in bold)	**Marine Conservation Society**, NPA, General Public
Project Status (updated October 2015)	● **Project completed or progressed on schedule** MCS is still running its citizen science wildlife sighting schemes for Leatherback turtles, Basking Sharks and Jellyfish. This includes sightings within the National Park. For sightings on the National Park coastline please click on this link here: http://www.mcsuk.org/sightings/map/index.php MCS hope to improve awareness of the schemes within the park by issuing updated posters and to look at the possibility of running some collaborative citizen science events and training.
Start Date	2012
End Date	2020
Map	***Click here to view an interactive map***

Project 58: Marine Wildlife Leaflet



Project Description	The coastline and sea lochs of the National Park are important for Biodiversity and are also a marine gateway into the park. This leaflet will highlight the rich biodiversity of our marine life, and also provide information for visitors on where it can be found. Invasive marine plants and animals will also be highlighted with information on how to report sightings.
Project Outputs	Public Engagement
Partners (Lead organisation in bold)	**NPA**
Project Status (updated October 2015)	● **Project completed** ~~or progressed on schedule~~ **Project completed** - Leaflet produced
Start Date	2012
End Date	2013
Map	***Click here to view an interactive map***

Project 59: Seasearch

Project Description	Seasearch is a project for volunteer sports divers who have an interest in what they're seeing under water, want to learn more and want to help protect the marine environment around the coasts of Britain and Ireland. The aim of the project is to map out the various types of sea bed found in the near-shore zone around the whole of Britain and Ireland. Surveys will help identify the richest sites for marine life and the sites which need protection. After reviewing existing records for the sea lochs of the National Park, if further surveys are required, training can be provided for divers at local clubs. MCS provides initial training, often organised through a local dive club, and provides continuing support to Seasearch divers. Loch Goil is an important area for species that live in mud habitats and fireworks anemones.

Project Outputs	Survey Information
Partners (Lead organisation in bold)	**Marine Conservation Society**, NPA
Project Status (updated October 2015)	🟡 **Project behind schedule** Training events are currently being planned for next year by the new Scottish coordinator for Seasearch.
Start Date	2012
End Date	2020
Map	***Click here to view an interactive map***

Project 60: Beachwatch

Project Description	Some of our best-loved marine wildlife is under threat from the waste and litter in our seas, with lots of species accidentally eating or becoming entangled in litter. Litter on our beaches is also hazardous to people so we all have a part to play in turning the tide on litter. This nationwide project supports local individuals, groups and communities to care for their local shoreline, and it is hoped to support such groups care for the shorelines within the National Park with possible assistance from the National Park Ranger team and National Park volunteers where required.
Project Outputs	Habitat Improvement, Public Engagement
Partners (Lead organisation in bold)	**Marine Conservation Society**, NPA, NP volunteers, GRAB Trust, General Public
Project Status (updated October 2015)	🟢 **Project** ~~**completed or**~~ **progressed on schedule** MCS have had what looks to be a record breaking year for Scotland for this year's Great British Beach Clean with over 70 events registered during the weekend of the 18th-21st September. There are currently 5 beaches that have been registered through the MCS Beachwatch Programme within the National Park. Arrochar - east of metal bridge, Arrochar Shore, Ardmay North Shore, Ardmay South Shore, Ardentinny – Shephards Point. Two of these are being coordinated with the National Park Ranger Service with beach cleans having been completed as part of the Great British Beach Clean in 2015 with volunteers and the local community. MCS will work with the National Park to look to fill any gaps in organizers required for above beaches where organizers are required.
Start Date	2012
End Date	2020
Map	***Click here to view an interactive map***

Project 61: Sea Level Rise and Storm Surge Behaviour in the Firth of Clyde

Project Description	This project seeks to assess the amount and quality of the data available regarding Sea Level Rise and storm surges in the Clyde. It will involve working with partners to ensure that areas with significant risk are identified and levels of certainty are quantified. An assessment on impact of sea level rises will then be produced.
Project Outputs	Habitat Assessment
Partners (Lead organisation in bold)	**Clyde Forum**, 7 local authorities, BGS (Marine Geoscience), NPA
Project Status (updated October 2015)	● **Project ~~completed or~~ progressed on schedule** This study calculates the likely rise in sea level (including negligible storm surge changes) at 2020, 2050 and 2080 under a High Emissions scenario. By 2080 the rise across the whole of the Firth of Clyde is predicted to be 47cm. This increase has been mapped along with Local Authority land use layers, to identify areas at risk of flooding. The output of the project should inform future long-term strategies with regard to flooding and erosion which affect the built and natural environments. The project is in the final stages of delivery. All field work and mapping is now complete and the final report is due by the end of 2015/beginning of 2016.
Start Date	2013
End Date	2013
Map	***Click here to view an interactive map***

Project 62: Loch Lomond Harms Initiative

Project Description	The purpose of this project is to address multiple water pollution and morphological pressures, causing environmental harms on waterbodies within the National Park, which threaten the ecological status of waterbodies under the Water Framework Directive. Six specific objectives have been identified for inclusion within the project: 1. Achieve bathing water quality compliance at the designated bathing beach at Luss 2. Address issues with effluent quality at small treatment works and septic tanks at seasonal caravan and camping sites and hotels. 3. To reduce the number of pollution incidents associated with Combined Sewage Overflows on the River Leven 4. To identify reasons for oil pollution and reduce the number of incidents & complaints on Loch Lomond & River Leven

	5. Review phosphorous discharge limits in the Loch Lomond area. 6. Assess morphological pressures and fish passage impacts with relevant asset owners.
Project Outputs	Habitat Improvements
Partners (Lead organisation in bold)	**SEPA**, NPA, SNH, land managers, Fisheries Trusts and Boards, River Basin Management Groups
Project Status (updated October 2015)	● **Project completed** ~~**or progressed on schedule**~~ **Project completed**
Start Date	2013
End Date	2020
Map	***Click here to view an interactive map***

Project 63: River Basin Management Planning - Ecological Status of Water Bodies

Project Description	River Basin Management Plans are one of the requirements of the Water Framework Directive and are tools which seek to ensure the protection, improvement and sustainable use of the water environment for future generations. The plans are produced on a 6 yearly cycle, with the first round of plans nearing completion. As part of the first round assessment, a map of water bodies that have not achieved the target of 'good ecological status' within each plan area will be produced. Potential catchments within the NP for waterbodies that have not achieved the target status will then be assessed to identify where partnership working could bring about improvements in water body status.
Project Outputs	Catchment Management
Partners (Lead organisation in bold)	**SEPA**, NPA, FCS
Project Status (updated October 2015)	● **Project completed** **or progressed on schedule** **Project completed** - All mapping completed
Start Date	2014
End Date	2015
Map	Park wide

Project 64: Management of Whinney Hill

Project Description	Whinney Hill is a popular Woodland Trust Scotland site situated in the south of the National Park. It consists of young and mature mixed broadleaved woodland interspersed with

	open space. There are a number of small wildlife sites within the National Park, and the management of Whinney Hill is an example of how such sites are managed for both biodiversity and recreational interest. The woodland at the site was previously planted with commercial conifers and belts of beech and sycamore. However, since acquiring the site in 1997, the Trust has removed many of the conifers and replanted with native species. This project aims to continue with the establishment of native woodland and removal of invasive non-native species whilst improving opportunities for recreational use by the general public.
Project Outputs	Habitat Management
Partners (Lead organisation in bold)	**WTS**
Project Status (updated October 2015)	● **Project ~~completed or~~ progressed on schedule** Management of Whinny Hill is proceeding as planned. Removal of invasive non-native species regeneration of Sitka spruce and Western Hemlock have been removed to help with conversion of the site to native broadleaved woodland.
Start Date	2012
End Date	2020
Map	***Click here to view an interactive map***

Project 65: RSPB Loch Lomond Reserve

Project Description	This project aims to develop and implement a management plan for the RSPB Loch Lomond Reserve as a key part of the Loch Lomond NNR and a biodiversity hotspot in the National Park. The management plan drafting starts in 2013 and will be completed in 2014. Long term management of this reserve will continue beyond 2020.

Project Outputs	Habitat & Species Management
Partners (Lead organisation in bold)	**RSPB**, NPA, SNH
Project Status (updated October 2015)	● **Project ~~completed or~~ progressed on schedule** The RSPB management plan for delivery of ecological and people engagement objectives at RSPB Loch Lomond has been completed and work towards delivering this is fully underway. Grassland restoration continues to progress with changes to the grazing regime, weed wiping and rush cutting all contributing significantly. Progress here has led to additional fields on site being used by grazing geese including Greenland white front geese and pink-footed geese. There has also been breeding lapwing recorded in additional fields on site. Spotted crake, a sporadic breeder on site, has been confirmed in good numbers during site monitoring. Two scarce invertebrates, Great Otter Spider *(Pirata piscatorious*) and Valerian Pug (*Eupithecia valerianata)* have been recorded during summer surveys. The site access track has been used well by increasing numbers of staff, volunteers and members of the public who have been attending a variety of different wildlife themed events on site. Planning permission has been granted for a temporary visitor hub for meeting and greeting visitors during busy periods, it is estimated this will be operational in summer 2016. The site team continues to work on projects to deliver additional access to areas of the site via paths.
Start Date	2013
End Date	2020
Map	***Click here to view an interactive map***

Project 66: Loch Lomond Long Term Management Plan

Project Description	Loch Lomond is one of the most heavily used lochs in the National Park. It is designated for many important features, including Loch Lomond National Nature Reserve and numerous Sites of Special Scientific Interest. There is a need to ensure the loch is managed to deliver multiple outcomes without compromising on its special qualities and features. This project will see the development of a long term management plan which will ensure the sustainable use of Loch Lomond, whilst delivering a balance between conservation, recreation and economic uses.
Project Outputs	Ecosystem Management
Partners (Lead organisation in bold)	**NPA**, SNH, SEPA, Land managers
Project Status (updated October 2015)	● **Project not progressed** Project not progressed.
Start Date	2012
End Date	2017
Map	***Click here to view an interactive map***

Project 67: Management of a Golf Course for Biodiversity

Project Description	The Carrick occupies an area of 117 ha on the south-western shores of Loch Lomond and contains a number of retained habitats from its original agricultural land use plus several new ones incorporated during the construction of the golf course. These include a nature reserve (flooded gravel pits surrounded by wet woodland), native woodland, dry grassland, wet grassland and lagoons. The Carrick's aim is to protect and enhance the habitats and species within the estate thereby optimising biodiversity. Biodiversity work carried out by the estate's Countryside

	Ranger will include: bird, mammal and vegetation surveys, woodland management, management of the grassland and wetland area and monitoring and control of invasive non-native species. Nest boxes and feeding stations will support breeding birds and bats. Assistance from volunteer groups greatly helps achieve some of the larger conservation tasks. A programme of activities designed to educate, inform and interpret the natural surrounds of the estate will be offered to resort guests, members of the public and school and youth groups.
Project Outputs	Habitat Management
Partners (Lead organisation in bold)	**Carrick Golf Course**
Project Status (updated October 2015)	**Unknown** No update received.
Start Date	2014
End Date	2020
Map	***Click here to view an interactive map***

Project 68: Our Park Scheme

Project Description	The Our park scheme aims to engage people in caring for and improving the nature and landscapes of the National Park. Working with the tourism sector in particular, it enables voluntary contributions of time or money to be donated to directly enhance and improve the natural features of the park. This project will continue to support conservation projects across the National Park, whilst enhancing opportunities for volunteers and providing positive benefits for visitors and communities within the park.
Project Outputs	Public Engagement
Partners (Lead organisation in bold)	**FOLLAT**
Project Status (updated October 2015)	🟡 **Project behind schedule** OUR park Scheme (now called 'Friends of OUR park' Scheme). Since 2010, the project has progressed well. 100 businesses and over 100,000 individuals contributing £200,000 to support a breadth and range of 60 projects to protect and enhance the natural heritage of Loch Lomond & The Trossachs National Park. Over 600 individuals have delivered 46 environmental improvement tasks through Make a Difference Days and other volunteer events. The scheme has supported a number of projects featured in Wild Park with either grant funding or volunteer effort, such as the

	'Powan in the Classroom' project, red squirrel conservation, Beachwatch surveying and enhancing recreational opportunities by improving footpaths, such as at Whinny hill. Project classified as amber as Friends of Loch Lomond & The Trossachs wish to continue the project but funding to employ part-time project officer to be secured for continuation of project beyond March 2016.
Start Date	2012
End Date	2014
Map	Park wide

Project 69: Gardening For Biodiversity

Project Description	This project will provide information on gardening for wildlife with the aim of increasing awareness of wildlife gardening and also the threats to wildlife from invasive non-native species. Participation in BeeWatch and Bumblebee Conservation Trust wider countryside transect surveys will also be encouraged through poster and presentation attendance at public events and through the bumblebee education programme. This will improve knowledge of the distribution of bumblebees in Argyll and Bute and encourage public participation in conservation.
Project Outputs	Public Engagement
Partners (Lead organisation in bold)	**Argyll & Bute Council**, BBCT
Project Status (updated October 2015)	● **Project ~~completed or~~ progressed on schedule** Project progressing.
Start Date	2013
End Date	2013
Map	No map required

Project 70: Wild Lomond Website

Project Description	The Wild Lomond Website provides information on the wildlife which can be seen within the National Park and where and when to see it. This project will continue to develop and provide up to date information on the biodiversity of the park, so residents and visitors alike can engage with the rich habitats and species that make up Loch Lomond & The Trossachs National Park.
Project Outputs	Public Engagement
Partners (Lead organisation in bold)	**FOLLAT**

Project Status (updated October 2015)	● **Project completed** ~~or progressed on schedule~~ **Project completed** with information from the website now integrated in to the Friends of Loch Lomond & The Trossachs website.
Start Date	2012
End Date	2020
Map	Park wide

Project 71: Education and Volunteering Biodiversity Programme

Project Description	The Great Trossachs Forest education pack aims to support outdoor learning across the project area and deliver key partnership messages. Working with partner organisations including the NPA and local communities, the pack will be used to work with visiting schools at a number of key sites to deliver Curriculum for Excellence linked learning opportunities. Volunteers are also encouraged to be part of this visionary landscape restoration project and opportunities working with partner organisations will also be sought across the project area. Target outputs are to support a minimum of 150 school pupils a year and increase the total number of volunteer days for projects which support biodiversity to a total of 466 days between 2013 and 2017.
Project Outputs	Public Engagement
Partners (Lead organisation in bold)	**TGTF**
Project Status (updated October 2015)	● **Project** ~~completed or~~ **progressed on schedule** 2014/2015 school year supported 92 school days. The majority of visits were for Geography students.
Start Date	2013
End Date	2017
Map	***Click here to view an interactive map***

Project 72: Strathfillan Community Woodlands

Project Description	Community woodlands within the National Park are rich in biodiversity and enjoyed by local communities and visitors. The Strathfillan Community Woodlands in Crianlarich and Tyndrum currently have management plans in which biodiversity, cultural heritage and recreation are the primary objectives. With input from community groups and volunteers, prioritised management and on-going survey work will be undertaken. Key biodiversity outputs will include

	botanical surveys, the creation of a tree nursery and management of existing conifer stands to increase biodiversity.
Project Outputs	Habitat Management, Public Engagement
Partners (Lead organisation in bold)	**Strathfillan Community Development Trust**, FCS
Project Status (updated October 2015)	● **Project ~~completed or~~ progressed on schedule** Project progressing. Funding has been received to move forward with plans with the Community Woodlands. Training has been undertaken by Strathfillan Community Development Trust staff, with further training scheduled for 2016 in woodland management. Funding will allow installation of interpretation boards and signage to promote and open up paths, and install picnic tables in suitable locations to enable more people to access the natural and cultural heritage of the woodlands. A 'Community Hub` is also being installed with forest classroom, picnic area, information and Gruffalo Trail in Tyndrum Community Shelterbelt. To accomplish Support is being given by local volunteers and a local pre-school/early years nature group, set up by local parents who are keen to get their children involved in the their environment. Projects due to be completed or near completion by the end of March 2016.
Start Date	2012
End Date	2020
Map	***Click here to view an interactive map***

Project 73: Management of Little Leny Meadows

Project Description	Little Leny Meadows is one of only a few Flood Meadows in this area of the National Park. Management of the habitat is necessary for regeneration of flood meadow flora, including Northern bedstraw, Globe flower, Marsh marigold, Meadow vetchling, Ragged robin, Bugle, Bistort and Lady's bedstraw. Management will be carried out with National Park and SWT volunteers. This will include limited planting of native trees and shrubs to reduce erosion of the riverbank. Nest boxes will be erected to encourage small birds, owls and bats to breed and opportunities offered for accessible wildlife education, e.g. bird and bat ringing, Surveys will be carried out of plants, lichens, moths and butterflies.
Project Outputs	Habitat Management
Partners (Lead organisation in bold)	**Scottish Wildlife Trust**, Callander Members' Centre (Lead) NPA, National Park volunteers, land owner
Project Status	● **Project behind schedule**

(updated October 2015)	Callander Landscape Partnership has recently been awarded an HLF grant which includes the reinstatement of Little Leny Meadows as a wet hay meadow. It also includes a loop path by the river and stabilisation of the old burial ground wall. The Callander SWT group put up small bird boxes and 2 owl boxes. All were occupied in 2014 with blue tits and great tits, a barn owl and a tawny owl. Unfortunately, in 2015 the owl boxes were unsuccessful. Better news was that all 5 small boxes were occupied, one with a pair of nuthatches. The chicks were ringed by a member of the Tayside Ringing Group. Pipistrelle bats were present in one of the boxes. The group hopes to increase the number of bird and bat boxes under the HLF project and have access for school groups.
Start Date	2014
End Date	2020
Map	***Click here to view an interactive map***

Project 74: Wildflower Seeding

Project Description	With the loss of natural wildflower meadows, this project aims to increase wildflower sites within the National Park, providing food for insects, specifically bees and butterflies. Wildflower sites will be created at identified sites in the Callander area, which will be managed for biodiversity.
Project Outputs	Habitat Improvements
Partners (Lead organisation in bold)	**Scottish Wildlife Trust**, Callander Members' Centre (Lead) Stirling Council, Greener Callander (CCDT)
Project Status (updated October 2015)	● **Project ~~completed or~~ progressed on schedule** Stirling Council sowed two areas of wildflowers in the centre of Callander. A third area was planted with bluebell bulbs for flowering in 2016. Other areas of bare earth have been sown and seeds provided to the local Church children's group.
Start Date	2012
End Date	2020
Map	***Click here to view an interactive map***

Project 75: Callander Geodiversity Trail Booklet

Project Description	There are a number of important geological features in the Callander area. This project involves the production of a geodiversity booklet which will link in with the Callander Paths leaflet. The booklet will help the public to understand

	the natural processes that have helped to form the Callander landscape and will support healthy opportunities to get out and about.
Project Outputs	Public Engagement
Partners (Lead organisation in bold)	**Callander's Countryside, Stirling & Clackmannan RIGS group**, NPA, land managers
Project Status (updated October 2015)	● **Project completed** ~~or progressed on schedule~~ **Project completed** Leaflet printed August 2014.
Start Date	2014
End Date	2014
Map	No map required

Project 76: Ben Vane Geological Site Management

Project Description	Situated within the Glen Finglas estate, the Ben Vane Geological Conservation Review Site contains four crucial areas of interest. These are a deformed ridge; an area of transitional slide; an area of lattice slope formation and a transitional zone. The aspirations for this site are to safeguard and maintain the geological and geomorphological features of the site and enhance the interpretive provision, thereby raising awareness and understanding of the site.
Project Outputs	Site Management
Partners (Lead organisation in bold)	**WTS**
Project Status (updated October 2015)	● **Project** ~~completed or~~ **progressed on schedule** Woodland Trust Scotland have helped secure the value and profile of this site through implementation of a woodland natural regeneration scheme on part of the site which will allow the landscape to be maintained and at the same time highlighted
Start Date	2014
End Date	2017
Map	***Click here to view an interactive map***

Project 77: National Park Visitor Centre at Balmaha

Project Description	The National Park Visitor Centre at Balmaha will be developed as an outdoor learning centre. The project includes: increasing the use of the centre for environmental science students from baseline figures in 2012; opportunities will be sought to engage visitors with the rich biodiversity of the National Park through interactive web-based media, e.g. the use of wildlife webcams; educational C f E based resources will be developed for both Ranger led and self-led education groups to increase the learning experience of visiting groups; opportunities to increase the current level of use of existing geodiversity interpretation by both visitors and educational groups will also be investigated.
Project Outputs	Public Engagement
Partners (Lead organisation in bold)	**NPA**, Strathclyde Geoconservation Group
Project Status (updated October 2015)	● **Project ~~completed or~~ progressed on schedule** There has been an increased use of the centre for engaging with biodiversity. Webcams have been installed for birds and red squirrels. The centre has been used for CLPL for teachers to increase self-led activities. From Jan to 1st Nov 2015 the following groups have been engaged with through Balmaha Visitor Centre and Inchcailloch: Three National Park supported visits to Inchcailloch. Overall, 53 children were engaged in learning about Inchcailloch. Three National Park supported JMA visits to Inchcailloch. Overall, 40 children were engaged in learning about Inchcailloch. Three teacher Career Long Professional Learning sessions were delivered on Inchcailloch. A total of 30 teachers were introduced to the island as a learning resource. Twenty five visits from schools and outreach groups were supported at Balmaha, using the National Park Centre as a focus and base for their visit. A total of 584 children and young people were engaged with, and 66 adults. Themes delivered

	included 13 Your Park focussed sessions, 7 Wild Park and 5 that covered H&Wb (nature immersion). Four National Park supported JMA visits to Balmaha. Overall, 90 children were engaged in learning about the National Park.
Start Date	2012
End Date	2020
Map	***Click here to view an interactive map***

Project 78: Moorland Indicators of Climate Change Initiative Schools Project

Project Description	The MICCI project is currently delivered across a number of UK National Parks and involves school students assisting with real scientific research to look at how our upland moorlands are contributing to climate change. Peat moors in good condition soak up and store carbon acting as carbon sinks. This project will identify suitable sites within the National Park and invite schools to participate in the MICCI project. Students will develop experiments and then head off onto the upland moorland sites to collect the data. The data will then be analysed by the Moors for the Future partnership, and will be used by real scientific researchers who are trying to work out how to best improve and conserve moorland environments.
Project Outputs	Public Engagement, Climate Change Monitoring
Partners (Lead organisation in bold)	**NPA**
Project Status (updated October 2015)	🟡 **Project behind schedule** A site has been identified and landowner permissions sought. The project was successfully delivered in yr 1 with results forwarded to the Moors for the Future partnership. Delivery in yr 2 was postponed to the Autumn due to adverse weather, however, results were shared with the wider project. It is anticipated project will be delivered again in 2016, with the possibility of additional sites being explored tying in to the Peatland Restoration Project site monitoring.
Start Date	2012
End Date	2020
Map	No map required

Project 79: Whole Farm and Estate Plans

Project Description	In order to help make farms and rural estates become more economically and environmentally sustainable, the NPA Land

	Use Team have been working on a pilot project with a small number of private land managers in the National Park to help them produce long-term whole farm or estate management plans. These plans will be holistic, looking at all existing and potential aspects of these land-based businesses from the traditional enterprises such as agriculture, forestry and sporting, to the more diversified enterprises incorporating conservation, renewable energy, tourism and recreation. It is anticipated that this project will be rolled out more widely across the National Park. In the long term, the plans aim to achieve habitat improvements at a landscape scale and where possible improve SSSIs currently in unfavourable condition.
Project Outputs	Habitat Management
Partners (Lead organisation in bold)	**NPA**, Land managers, Consultants
Project Status (updated October 2015)	● **Project ~~completed or~~ progressed on schedule** The WFEP project continues to be implemented across the Park working with a number of holdings to deliver integrated land management plans. Landscape scale improvements for habitats and designated sites are currently being explored using SRDP funding and potential collaborative working across holdings.
Start Date	2012
End Date	2017
Map	Park wide

Project 80: Designed Landscape Project

Project Description	The National Park's designed landscapes are an important part of its cultural heritage and contribute on a significant scale to the Park's landscape character. Due to a number of factors such as changes in land use, many of the important design features within these sites such as boundary and parkland trees are under threat. The project will involve surveying of identified landscapes, with management plan produced identifying key features to restore building on the pilot project undertaken in 2012. Features of biodiversity interest include planting of parkland trees, boundary trees and removal of invasives.
Project Outputs	Habitat Management
Partners (Lead organisation in bold)	**NPA**, Land managers, Historic Scotland
Project Status (updated October 2015)	● **Project behind schedule**

	To be monitored via other projects; Whole Farm and Estate Plans, Natural Heritage Grant Scheme and planning gain.
Start Date	2012
End Date	2017
Map	Park wide

Project 81: Habitat Audit Data Checks

Project Description	This project will improve the knowledge base of priority habitats within the National Park. Quality checks will be carried out on prioritised areas to give up to date information at a high confidence level on the habitats present within those areas.
Project Outputs	Habitat Survey Information
Partners (Lead organisation in bold)	**NPA**
Project Status (updated October 2015)	🔴 **Project not progressed** Project not progressed. Rescheduled for 2016/2017
Start Date	2013
End Date	2020
Map	Park wide

Project 82: Integrated Habitat Network

Project Description	This project seeks to identify key areas of woodland habitat to be protected as part of the Wild Challenge Woodland Habitat Network. Identification of which habitats are 'under threat' will be made, and habitat management will be prioritised. Development of specific projects for each habitat will also be identified.
Project Outputs	Habitat Management
Partners (Lead organisation in bold)	**NPA**, FCS, SNH
Project Status (updated October 2015)	🟡 **Project behind schedule** Integrated Habitat Network is not currently being progressed by SNH and FCS, however, the principles of IHN modelling will be used in the development of 'Our Woodland Habitat Network'.
Start Date	2013
End Date	2020
Map	Park wide

Project 83: Swift Training for NPA Planning Officers

Project Description	Swift numbers are currently in decline, and there is increasing concern about loss of swift nest sites, and therefore swift colonies. This is largely due to modern methods of renovating old buildings, modern building styles and new types of materials used for new buildings. Training will be provided to the National Park development management planning officers on swift ecology and nesting requirements. Information on designs which permit swift access where buildings are being renovated or when new buildings are being constructed will be provided. Artificial nest box designs for swifts and other priority species will also be discussed.
Project Outputs	Species Conservation
Partners (Lead organisation in bold)	**RSPB**, NPA
Project Status (updated October 2015)	🔴 **Project not progressed** Project not progressed. Re-scheduled for early 2016.
Start Date	2014
End Date	2015
Map	No map required

Project 84: John Muir Conference 2014

Project Description	Working with John Muir Trust, SNH, NTS and the Cairngorms National Park, Loch Lomond and The Trossachs National Park are hosting an international conference in May 2014 to celebrate the 100th anniversary of John Muir and to consider how National Parks will be managed in the future. This conference will raise the profile of Scotland's National Parks and help inform management of protected areas in the future.
Project Outputs	Public Engagement
Partners (Lead organisation in bold)	**NPA**, NTS, SNH, CNPA
Project Status (updated October 2015)	🟢 **Project completed** ~~or progressed on schedule~~ **Project completed -** successful event delivered**.**
Start Date	2013
End Date	2020
Map	No map required

Project 85: Business in the Park Biodiversity Training

Project Description	This project would develop and deliver training for tourism businesses within Loch Lomond and The Trossachs National Park. The training would aim to assist the businesses in engaging customers with the rich biodiversity of the National Park and in turn engage visitors to the park. Training would be aimed at two different audiences. The first being a general half day introduction to the National Park's most exciting and inspiring wildlife - osprey, golden eagles, red squirrels, otters etc. The second would be a much more in depth one day session targeting businesses whose main product relies on wildlife tourism, looking at enhancing and sharing their knowledge and skills. This training could be run annually if it proves to be popular.
Project Outputs	Public Engagement
Partners (Lead organisation in bold)	**NPA**, Businesses
Project Status (updated October 2015)	● **Project not progressed** Project not progressed. Rescheduled for 2016/2017.
Start Date	2014
End Date	2020
Map	No map required

Project 86: Celebrating Nature Event

Project Description	The aim of this event would be to showcase to visitors the huge variety of wildlife they can see in the National Park. The summer event would have exhibitions from partners and National Park staff, enabling visitors to learn more about the rich biodiversity of the National Park, and discovering where they can view wildlife. Wildlife tourism businesses would be

	given the opportunity of showcasing their product. The event could potentially be hosted at Carrochan in 2015 or later.
Project Outputs	Public Engagement
Partners (Lead organisation in bold)	**NPA**, Businesses, Wild Park 2020 partners
Project Status (updated October 2015)	🔴 **Project not progressed** Project not progressed. Rescheduled for 2016/2017.
Start Date	2015
End Date	2015
Map	No map required

Project 87: Duchray Water Natural Flood Management

Project Description	Based on the initial desk based scoping phase in 2013/2014, this natural flood management project sits alongside other flood management options being considered for the Duchray/Aberfoyle area to alleviate current levels of flooding experienced in this area. The package of flood mitigation options includes a study and modelling phase which looks at flood mitigation measures such as woodland planting and wetland management in the Duchray catchment.
Project Outputs	Habitat Improvements
Partners (Lead organisation in bold)	**Stirling Council**, FCS, private landowners, NPA
Project Status (updated October 2015)	🟢 **Project ~~completed or~~ progressed on schedule** This project has evolved into the Strathard Ecosystem Services Project. This partnership project is looking at optimising land use and management within Strathard, to minimise the effects of water. It will involve an ecosystem services approach that includes community engagement.
Start Date	2014
End Date	2020
Map	Still to be supplied

Project 88: Geology and Landscape of Loch Lomond & The Trossachs

Project Description	1. Digital and field data capture of superficial geology. Focused on Loch Katrine catchment from the watershed to shoreline to complement White Ribbon multibeam echosounder survey (scheduled for 2014) with complete capture for LLTTNPA area. 2. Landslide and mass movement assessment along East West topographic transect (Loch Lomond/Loch Arklet/Loch

	Katrine/Callander). 3. Landslide and slope susceptibility study for LLTNPA area, involving LiDAR survey and repeat monitoring of key locations. 4. Site Investigation and superficial thickness mapping around southern shores of Loch Lomond (Balloch to Balmaha) to tie in with White Ribbon seismic survey (scheduled 2014) and potential drilling rig coring. Palaeoenvironmental reconstructions - Holocene climate change indicators; industrial contaminant concentrations. 5. Reconnaissance mapping along rockcut sections of A82 west Loch Lomondside (Rubha Mor to Ardlui).
Project Outputs	Mapping Information
Partners (Lead organisation in bold)	BGS, NPA, Forest Research, Transport Scotland
Project Status (updated October 2015)	**Unknown** No update received.
Start Date	2013
End Date	2016
Map	Park wide

Project 89: Tay Salmon in the Classroom

Project Description	Children in primary schools across the Tay catchment area learn about salmon ecology, conservation, threats and salmon related economics while caring for and monitoring salmon eggs until hatching and releasing the alevins. The children have the opportunity to visit the Almondbank hatchery and in the summer they are taken to see electro-fishing to see the later stages in the salmon life cycle. Within the National Park, classes from Killin and Crianlarich primary schools, led by a National Park ranger take part in the programme.
Project Outputs	People engagement, species conservation
Partners (Lead organisation in bold)	**The Tay Foundation**, NPA, Killin and Crianlarich Primary schools
Project Status (updated October 2015)	● **Project ~~completed or~~ progressed on schedule** This project is on-going with approximately 17-21 (P5-7) Primary School pupils involved from hatching to release. The programme alternates between Crianlarich and Killin Primary Schools. 2016 will involve Killin P.S. in the project. Release sites are always at the same locations for each school. Sessions are delivered by National Park Rangers, with Tay Foundation staff involved in delivering the electro fishing

	session to discover later stages in the life cycle of the salmon.
Start Date	2009
End Date	2020
Map	No map required

Project 90: TGTF Archaeology & Biodiversity Study

Project Description	A GIS based methodology for assessing the relationship between bio and cultural diversity using remote and ground based assessments is being trialled in the Great Trossachs Forest. This area has a rich cultural history with preserved evidence in the landscape dating back to the 12th century. The approach uses a LiDAR to identify, categorise and map previously unrecorded archaeological features which lie beneath vegetation. This information will be validated and improved through site survey to ground truth the data before the diversity of these features is mapped across the study area. The relationship between this indicator of cultural diversity and one of biodiversity developed from a detailed fine resolution National Vegetation Survey will then be assessed.
Project Outputs (updated October 2015)	Map information of archaeological and biodiversity features in the landscape
Partners (Lead organisation in bold)	Forest Research, TGTF
Project Status	🔴 **Project not progressed** Project not progressed.
Start Date	2014
End Date	2014
Map	***Click here to view an interactive map***

Project 91: Glenfalloch Estates

Project Description	Glenfalloch Estate's Land Use Management Plan has been developed to be consistent with Wild Park 2020 and includes: 1. Development of a Forest Plan to: a. Manage existing native broadleaf woodlands and to bring them back into active production where possible b. Manage and extend the Glen Falloch Caledonian pine woods c. Undertake Rhododendron and other INNS control 2. Renewable energy development

	a. Four run of river hydro schemes (2MW in production, 4 MW to be constructed) b. Biomass heating schemes, using estate resources where possible (see 1 (a)) 3. Other: a. Manage and improve land and riparian habitats and biodiversity, especially on designated sites, by monitoring and controlling grazing impacts, bracken control and other appropriate prescriptions b. Manage deer and other herbivores consistent with best practice and (a) above c. Provide information for visitors on current management policies to improve understanding of activities d. staff training e. skills and experience sharing events for external organisations
Project Outputs	Habitat Management
Partners (Lead organisation in bold)	**Glenfalloch Estate**, NPA
Project Status (updated October 2015)	● **Project ~~completed or~~ progressed on schedule** NPA are continuing to work with the estate to support their delivery of the Land Use Management Plan, a precursor to the Whole Estate Plan. They are embracing the principle of habitat condition monitoring to inform land management decisions and are currently in the process of adopting this across the whole estate, not just the designated sites. They are currently developing three new hydro-schemes, which once completed should secure long-term income that can be invested into the Estate.
Start Date	2009
End Date	2019
Map	***Click here to view an interactive map***

Appendix III: Maps & Data Licenses

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Scottish Natural Heritage (SNH)

Sites of Special Scientific Interest, National Nature Reserves, Special Areas of Conservation, Special Protection Areas

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For further information please email DATA_SUPPLY@snh.gov.uk or contact the SNH Geographic Information Group on 01463 725 111.

Forestry Commission Scotland (FCS)

National Forest Estate Legal Boundary Scotland.

For further information please contact Mapping & Geodata, Forestry Commission, 231 Corstorphine Road, Edinburgh EH12 7AT. Tel: 0131 334 0303.

Appendix IV: Abbreviations & Acronyms

ABBREVIATION	DEFINITION
AFT	Argyll Fishery Trust
A&BC	Argyll & Bute Council
BARS2	Biodiversity Actions Reporting System (second edition)
BBS	Breeding Bird Survey
BSBI	Botanical Society of the British Isles
BTO	Centre for Ecology & Hydrology
CEH	Centre for Ecology & Hydrology
CFE	Curriculum for Excellence
CNPA	Cairngorms National Park Authority
ConFor	Confederation of Forest Industries
CSBG & CSG	Central Scotland Black Grouse and Capercaillie Study Group
ECN	Environment Change Network
EMS	Environmental Management Strategy
EIA	Environmental Impact Assessment
FCS	Forestry Commission Scotland
FFT	Forth Fishery Trust
GBNNSS	GB Non-Native Species Secretariat
GCR	Geological Conservation Review
GIS	Geographical Information System
GRAB Trust	Group for Recycling in Argyll & Bute
HRA	Habitats Regulation Appraisal
IHN	Integrated Habitat Network
INNS	Invasive Non-Native Species
JNCC	Joint Nature Conservation Committee
LAG	Local Advisory Group/Leader Action Group
LBAP	Local Biodiversity Action Plan
LDP	Local Development Plan
LLFT	Loch Lomond Fishery Trust
LLTTNPA	Loch Lomond & The Trossachs National Park Authority
LNR	Local Nature Reserve
MPA	Marine Protected Area
MCS	Marine Conservation Society
NGO	Non Governmental Organisation
NNR	National Nature Reserve
NPA	National Park Authority
NPBAP	National Park Biodiversity Action Plan (first edition)
NPPP	National Park Partnership Plan 2012 – 2017
NPTC	National Proficiency Tests Council
NFUS	National Farmers Union Scotland
NTS	National Trust for Scotland
PAWS	Plantation on Ancient Woodland Site
RAFTS	Rivers and Fisheries Trusts of Scotland

RBD	River Basin District
RBMP	River Basin Management Planning
RSPB	Royal Society for the Protection of Birds
RZSS	Royal Zoological Society of Scotland
SRUC	Scotland's Rural College
SAC	Special Area of Conservation
SC	Stirling Council
SCENE	Scottish Centre for Ecology and the Natural Environment
SEA	Strategic Environmental Assessment
SEPA	Scottish Environment Protection Agency
SGRPID	Scottish Government Rural Payments and Inspections Directorate
SLE	Scottish Land and Estates
SPA	Special Protection Area for wild birds
SRDP	Scotland Rural Development Programme
SNH	Scottish Natural Heritage
SNW	Scottish Native Woodlands
SWT	Scottish Wildlife Trust
SSRS	Saving Scotland's Red Squirrels project
SSSI	Site of Special Scientific Interest
UKBAP	UK Biodiversity Action Plan
WANE	Wildlife & Natural Environment (Scotland) Act 2011
WDC	West Dunbartonshire Council
WeBs	Wetland Bird Surveys
WEWs	The Water Environment & Water Services (Scotland) Act
WFD	Water Framework Directive
WILD PARK 2020	National Park Biodiversity Action Plan (second edition)
WTS	Woodland Trust Scotland

Appendix V: Glossary of Terms

Aichi targets:	Targets for the conservation of biodiversity which were agreed upon at the United Nations Convention on Biological Diversity in Aichi, Nagoya, in 2010.
Biodiversity:	The totality of life on earth: the variety of species, including the variation within species, the living systems they form, and the natural processes with which they interact.
Biosecurity:	Preventive measures designed to reduce the risk of spreading invasive non-native species, pests and diseases.
Catchment scale:	An entire river catchment.
Climate change:	Long-term changes to climate, caused to a significant degree by human activities that release gases into the upper atmosphere where they trap excess heat near the planet's surface.
Conservation Refuge Site:	Establishment of a safe area where a threatened species can be moved, to enable additional populations of species to exist.
Ecological connectivity:	A term referring to the connected system of open space throughout an ecosystem and adjacent ecosystems.
Ecological network:	A system linking ecosystems across geographic areas, taking into account the dispersal ability of the component species of those ecosystems.
Ecosystem:	A dynamic interlinked complex of plant, animal and micro-organism communities, and their associated non-living environment, interacting as an ecological unit.
Ecosystem approach:	An approach that encourages the integrated management of land, water and living resources and promotes conservation and sustainable use in an equitable way.
Ecosystem services:	The benefits which ecosystems can provide for people and society e.g. food, water, places for recreation and soil formation.
Edge transitions:	The change from one habitat to another, e.g. forest to moorland.
Environmental Impact Assessment:	An assessment undertaken on the basis of Directive 2011/92/EU (Environmental Impact Assessment Directive) which looks at the possible positive or negative impacts a project may have on the environment.
Geodiversity:	Geodiversity: the variety of rocks, minerals, fossils, landforms, sediments and soils, together with the natural processes which form and alter them.
Grip blocking:	The blocking of previously artificially dug drainage ditches across areas of wet heath or blanket bog. This process helps to restore natural patterns of drainage, thereby encouraging vegetation growth and reducing erosion of these fragile habitats.
Habitat corridors:	Areas providing linkage between separate areas of the same

	habitat enabling species to move freely between these habitats. These features can sometimes be linear, e.g. a hedge.
Integrated Habitat Network Model:	A computer model which has been developed to identify networks which link a mix of habitat types with each other. E.g. combining grassland, woodland and wetland.
Keystone species:	A species whose presence and role within an ecosystem has a disproportionate effect on other organisms within the system. Often a dominant predator whose removal allows a prey population to explode and often decreases overall diversity.
Landscape scale:	A wide-scale, holistic approach, operating across broad areas of countryside integrating biodiversity conservation with local economic and social issues.
Local Geodiversity Sites:	Selected by voluntary geoconservation bodies as important places for geology, geomorphology and soils outside statutorily protected areas.
Marine Protected Area:	An area of sea and coast designated in Scotland under the Marine (Scotland) Act and UK Marine and Coastal Access Act to manage and protect for future generations.
National Biodiversity Network Gateway:	A website providing access to biodiversity data, and enabling providers to share their own data.
National Nature Reserve:	An area of land set aside for nature, where the main purpose of management is the conservation of habitats and species of national and international significance.
Natural Capital:	A value assigned to the state of natural assets.
Peatland:	A wetland ecosystem, such as a bog, fen or mire, covered by a peaty soil formed from the partly decayed remains of plants.
Ramsar Site:	A wetland site designated under an international convention signed at Ramsar in Iran.
River basin management planning:	Planning mechanism introduced to protect and improve the water environment by setting improvement objectives for each water body.
River catchment:	The entire land area from which water drains into one river system.
Run-of-river schemes:	Schemes which depend on the natural flow of a watercourse to convert the potential and kinetic energy of flowing water into electrical energy.
Special Protected Areas:	Protected sites classified under the EC Birds Directive for rare and vulnerable birds, and for regularly occurring migratory species.
Sustainable:	Capable of continuing into the future without damage to the environment or depletion of natural capital.
Water Framework Directive:	EC directive designed to improve the management of surface waters.
Special Areas of Conservation:	Important high-quality conservation sites designated under the EC Habitats Directive.

Site of Special Scientific Interest:	A site designated under the Wildlife and Countryside Act 1981 as being of special interest for its flora, fauna, geological or physiographical features.
Water Environment and Water Services (Scotland) Act:	Sets out steps for the implementation of the river basin planning process in Scotland.

Appendix VI: Habitats Regulation Appraisal

The requirement for a Habitats Regulations Appraisal of Wild Park 2020 has been considered with reference to published SNH guidance "*Habitats Regulations Appraisal of Plans. Guidance for Plan-Making Bodies In Scotland, Version 2, 2012*".

The National Park contains all or part of 8 Special Areas of Conservation (SACs) for habitats and species designated under the EU Habitats Directive and 2 Special Protection Areas for wild birds designated under the Birds Directive. These are collectively known as European sites and the qualifying features for which they are designated are listed below.

Site	Qualifying Features
SAC	
Ben Heasgarnich (part)	High-altitude plant communities associated with areas of water seepage, species-rich grassland with mat grass in upland areas, alpine and sub-alpine calcareous grasslands, mountain willow scrub, plants in crevices on acid rocks, plants in crevices on base-rich rocks, tall herb communities, base-rich fens, montane acid grasslands.
Ben Lui (part)	High-altitude plant communities associated with areas of water seepage, species rich grassland with mat-grass in upland areas alpine and sub-alpine calcareous grasslands, sub-arctic willow scrub, plants in crevices on acid rocks, plants in crevices on base-rich rocks, tall herb communities, base-rich fens, montane acid grassland, wet heathland with cross-leaved heath and acidic scree.
Endrick Water (part)	River lamprey, brook lamprey, Atlantic salmon
Loch Lomond Woods	Western acidic oak woodland, otter
Meall na Samnha (part)	Species-rich grassland with mat-grass in upland areas, alpine and sub-alpine calcareous grasslands, mountain willow scrub, plants in crevices on base-rich rocks, tall herb communities and montane acid grasslands.
River Tay (part)	Sea lamprey, river lamprey, brook lamprey, Atlantic salmon, clear-water lochs with aquatic vegetation and poor to moderate nutrient levels.
River Teith (part)	Sea lamprey, river lamprey, brook lamprey, Atlantic salmon.
Trossachs Woods	Western acidic oak woodland
SPA	
Glen Etive and Glen Fyne (part)	Golden eagle
Loch Lomond	Greenland white-fronted goose, Capercaillie

Unless a plan or project is directly connected with or necessary to the management of a European Site, the Habitats Regulations 1994 (Reg 48) require competent authorities to

consider if any plan or project they wish to undertake or give permission for is likely to have a significant effect on a European site. If there is any such likelihood, an appropriate assessment of the implications for the conservation objectives of the site must be undertaken. The plan or project can only be undertaken after having ascertained that it will not adversely affect the integrity of the site. This process is referred to as a Habitats Regulations Appraisal (HRA).

The NPA's assessment is that only the European sites listed here need to be considered in relating to the Regulations. Additional sites outside the National Park were looked at in recent HRAs for the Adopted Local Plan 2010 - 2015 and the National Park Partnership Plan (NPPP) 2012 - 2017 and the conclusion was reached that there was no likely significant effect on them. As Wild Park 2020 is a nature conservation programme, it is judged that it is event less likely to affect sites outside the National Park than those wider plans.

Wild Park 2020 is a delivery mechanism for the conservation objectives and policies in the NPPP 2012 - 2017, already subjected to HRA where it was concluded that there was no likelihood of the NPPP having significant effects on any European sites.

The general policy statements in Wild Park 2020 such as long-term vision and programme descriptions are all elements that would be screened out of a formal HRA process.

The delivery projects in Wild Park 2020 have not been set out in sufficient detail to be properly screened or assessed. Some of the projects in Wild Park 2020 may form part of their management and thereby be exempt from HRA. Examples are likely to include improvements in habitat quality and connectivity of native woodland adjacent to woodland SACs, measures to improve water quality in the catchments of riverine SACs or management of invasive non-native species likely to invade sites. For other projects, the level of detail required for identification of likely significant effects and undertaking of appropriate assessments can only be generated and examined when producing detailed project plans. The Wild Park 2020 document does not go into a sufficient level of detail about locations and methodologies to allow such considerations to be undertaken properly. In this respect Wild Park 2020 is significantly different from a land use plan such as a development plan which has a firm spatial element and forms part of the formal permission for development.

For these reasons, an HRA has not been undertaken of Wild Park 2020. Our conclusion is that an HRA of Wild Park 2020 is not necessary and that individual projects will need to be considered against the Regulations in their own right.