

# How the John Muir Award delivers for climate and nature in Loch Lomond & The Trossachs National Park



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## Introduction

Loch Lomond & The Trossachs National Park is taking action to mitigate and adapt to the climate emergency and nature crisis across all of its work. From working hard to minimise the emissions from their own estate; supporting land managers to adapt to a changing climate; working with partners to deliver Wild Park (the National Park's Biodiversity Action Programme) to advising planning developments; climate and nature-based solutions are at the heart of the National Park (Appendix 1).

This resource demonstrates how the John Muir Trust's main engagement initiative; the John Muir Award (Appendix 2) helps National Parks engage a wide range of people (pupils, adult volunteers, families, employability programmes, young people and Outdoor Centres) with the climate emergency and nature crisis, encouraging environmental action.

### Use this document to find:

- examples of how the John Muir Award helps groups and individuals contribute to climate and nature action work and themes being carried out across the National Park.
- resources and links to help you and your groups get further involved.

## Biodiversity Recovery

The loss of native species weakens our ecosystems, leaving them less resilient to the effects of global warming. Healthy habitats are vital carbon sinks, but if they deteriorate, they can turn into carbon emitters, so it is vital that we protect and restore biodiversity.

### Improving Habitats

The Trossachs Water Vole Project is the result of the first reintroduction of water voles in Scotland. Between 2008 and 2011 over 1000 water voles were reintroduced to selected areas of restored wetland sites across the Trossachs, where water voles had disappeared largely due to the invasive non-native American mink. Forest Enterprise (now Forestry and Land Scotland) had created wetland habitat as part of a forest habitat network improvement programme in the Loch Ard Forest.



Work to improve wetland habitats for water voles and other aquatic wildlife was carried out through an [Outdoor Access Trust for Scotland](#) six month upland footpath traineeship and Conserver Award with [The Mountains & the People](#). Removal of self-seeded Sitka spruce trees allowed grasses and other native wetland vegetation to return. As well as increasing the diversity of native plants for water voles, a healthy wetland ecosystem will absorb more carbon and retain more water, helping to prevent flooding downstream.

## Biodiversity Surveys

A group of the National Park's Volunteer Rangers working towards their Discovery Award also assisted the Trossachs Water Vole Project, checking mink rafts and surveying water vole populations as they expand across the National Park. This essential task helps the project to keep track of the health and distribution of the water vole population.



(c) Record e-book

A McLaren High School student on the Junior Ranger Programme was inspired to carry out her own series of bat surveys during the summer following a bat survey night hosted in Balmaha by The Loch Lomond Bat Group. Monitoring bats helps build up a picture of their distribution and population which can help experts identify how they are adapting to the threats faced, including climate change.



(c) Record e-book

'I found that there were many factors affecting bat's activity, including temperature, time, weather and season, however, in general, Kinlochard has a thriving population of bats.'

McLaren High School Junior Ranger participant

## Citizen Science

Citizen science is a powerful tool for climate action. The opportunities to get involved with biodiversity surveys can increase the awareness of climate change threats whilst encouraging many to observe their local environment more closely and invest time in monitoring it. They are a great way to contribute to the work of scientists and environmental organisations by providing data that will help to inform decision makers.

Red squirrel populations have been increasing in the National Park, but still need our help. Understanding the distribution of both the native red, and non-native invasive grey squirrel helps habitat management plans. Healthy woodland habitats are not only able to adapt more quickly to climate change but will also be able to support red squirrel populations and other native wildlife.



(c) Record e-book

Local Callander based families completing their Award through Callander's Landscape project submitted their sightings of grey and red squirrels to The Great Scottish Squirrel survey.

'When we got home we went on the Saving Scotland's Red Squirrel website to learn a bit more about the red and grey squirrels and why it is important to help protect the red squirrels and their habitat.'

Cox family



(c) Record e-book

Dunoon Grammar School students visited Aberfoyle and studied the air quality in the area by observing and identifying the different lichen species present on trees in the Queen Elizabeth Forest Park at The Lodge. The OPAL air quality survey they contributed to, looked to demonstrate how air pollution affects the natural environment across the UK

'Dunoon Grammar School had a great day at The Lodge in Aberfoyle learning about our plan for Nature - Wild Park and the conservation projects everyone can help with.'

Record eBook account

## Invasive non-native species

Invasive non-native species (INNS) are those introduced species that can cause serious negative impacts on native wildlife, usually by out-competing, spreading disease or through predation. INNS are one of the four key environmental threats to nature in the National Park's Biodiversity Action Programme, Wild Park.

The National Park is targeting five invasive non-native plants, one of which is *Rhododendron ponticum*. This plant prevents light from entering the woodland floor, so no other plants can survive. The removal of these plants is difficult as it needs to be done at a colony scale involving land owners and partners. Removal of this invasive plant will improve the health of woodlands allowing native trees to grow and increasing their ability to store carbon. Soil health will also improve and also be able to store more carbon.



(c) Ardroy OEC

Pupils completing their John Muir Award with Ardroy Outdoor Education Centre have contributed greatly to the control of *Rhododendron ponticum* in the National Park, removing hundreds of metres of the plant from a local Atlantic oak woodland.



(c) Record e-book

Balforn High School Junior Rangers worked with Ben Lomond Ranger Fraser to pull up rhododendron saplings and dig out any of the larger plants whose roots had established in the soil.

“This mighty big specimen was no match for the Balforn High School Junior Rangers!”  
Record e-book account

## Nature connection

Nature connection is more than simply being out in nature, it is about the strength of the relationship an individual has with the natural world. This relationship benefits us through boosting our health and wellbeing, but also benefits the environment. Recent studies show the positive association between nature connection and pro-environmental behaviour, leading people to take steps to live more sustainably on the planet. The climate emergency shows us that our collective connection with nature needs strengthening. Supporting people to deepen their connection to nature is an important step in encouraging them to take climate action.

### Pathways to nature connectedness: Let nature be your story



(c) Record e-book

The Limbert family learnt all about the history and folk stories of the park's wildflowers.



(c) Lesley McCue

RSPB volunteer Lesley McCue foraged for plants to use in recipes and shared her enthusiasm by leading guided walks.



(c) Record e-book

Bankhead Primary School pupils had close encounters with marine wildlife within the National Park upper Loch Fyne and Loch Goil Marine Protected Area.

## Visitor Management

### Footpath Maintenance

Some of the hills in the National Park are visited by large numbers of people, which along with natural forces such as rainfall, frost and slope steepness can cause erosion of sensitive habitats in these upland areas. Climate change can also be a factor in how quickly this erosion occurs and eroded upland soils will release carbon. Ben A'an which is owned and managed by Forestry and Land Scotland is the second most popular hill in the National Park and is walked by over 70,000 people a year.



In 2019 Loch Lomond & The Trossachs National Park Junior Rangers from McLaren High School in Callander carried out important ongoing footpath maintenance on Ben A'an supported by Rosie from the Mountains and The People Project. This work contributed to the Conserve element of their John Muir Award, with cross drains, water bars and side drains all being cleared to allow water to safely run off the path, thereby helping to prevent erosion.

## Aquatic Plastic Pollution

One of the key environmental threats to the nature of the National Park is the pollution of lochs and rivers. There are 92 river and loch water bodies that fall completely or partially within Loch Lomond & The Trossachs National Park and the five coastal water bodies which partially border the National Park. Litter and plastic pollution threaten the stability and resilience of both marine and freshwater ecosystems, endangering wildlife and reducing the water quality. This plastic also directly impacts our climate, releasing greenhouse gases into the atmosphere as it is broken down by solar radiation.

Plastic pollution also disturbs the vital role our oceans play in sequestering carbon with microplastics contaminating plankton, affecting their ability to fix carbon from the atmosphere and move it to marine sediments in the deep ocean.



## Coastal Litter Picking

Students from the Vale of Leven Academy taking part in the National Park's Junior Ranger Programme tackled the marine litter washed up on the shore of Loch Long near Arrochar. They picked up the litter they could find whilst also completing a litter survey from the Marine Conservation Society. The group later reflected on how they might contribute to reducing this type of litter as individuals.



## Freshwater Litter Picking



Wife and husband team Ingrid and Chris Todd made the journey to Loch Earn armed with their canoe, gloves and plastic sacks to tackle the human rubbish polluting the shores there

“We could appreciate what we had achieved and gained a sense of personal well-being through restoring the damaged shoreline to the wild.

We are not naïve. The rubbish will be back....and so will we. Perhaps in time, if we have enough conversations with the people we can influence, we won't need quite so many plastic sacks.’ Ingrid Todd

## Weather and Climate

### The ancient patterns of nature

The timings of natural events like the first signs of spring have been changing as the climate warms. Triggered by the increasing temperatures, certain species of plant have been blooming earlier and some species of birds are migrating earlier to name just a couple of examples. These changes are happening at different rates for wildlife, causing nature to become uncoordinated.



'I've always lingered over the signs of seasonal change, but this project is making me look a wee bit closer at the woodland and shore between Balmaha and Milarrochy Bay, by Loch Lomond and in so doing, enjoy it all the more.'

John Muir Award participant, the tall grass waves

Loch Lomond & The Trossachs National Park volunteer tracked the seasonal changes of an Oak tree and submitted the observations to the Woodland's Trust and University of Edinburgh's Track-a-tree citizen science project. This important data helped to shed light on the seasonal timings of UK woodlands and how changes in climate could affect them.

## Minimum Impact

Ardroy Outdoor Education Centre's 'Food Waste Warriors' project, funded by the Climate Challenge Fund aimed to reduce the centre's food waste by 100%; reducing carbon emissions by 12 tonnes of CO2 a year as a result. Any food waste is now audited and taken to the centre's new composter; one of the residential group tasks for those completing their John Muir Award. The centre is engaging the community by composting the food waste of a local primary school.



Staff also focus on educating groups on recycling and food waste to inspire participants to continue to reduce their own carbon footprint after their stay. Summer 2021 will see the installation of a visual dining room display, depicting the journey of an apple from a tree in South Africa to Ardroy and will encourage pupils to reflect on the origins of their food.

Anything we can repair,  
we will!

Phil Thompson,  
Ardroy Outdoor Education Centre

Reducing waste doesn't just stop at food, Ardroy embraces a repair culture, repairing anything that can be fixed and repurposing those things that can't. Old wetsuits that can't be stitched back up with the centre's sewing machines, will be repurposed into waterproof equipment bags or blindfolds for activities.





(C) Ardroy OEC

## How to get involved

We all have an important role to play in protecting and caring for wild places, whether we live within the National Park, are visiting or are simply inspired by its special qualities.

The John Muir Award helps frame practical action for nature and landscapes across our National Parks, and inspire people to make a difference by reducing our impact on the planet.

[Johnmuiraward.org](http://Johnmuiraward.org)



### Take action

- Find out more about the environmental threats facing the park and the projects planned to overcome them through the Park's Biodiversity Action Programme [Wild Park](#), with resources to support teaching about climate action and the nature crisis on the [Learning for Sustainability Padlet](#). Follow [#OurWildPark](#) to stay up to date with the National Park's work.
- For opportunities to get involved in citizen science check out our [surveys resource guide](#) and get inspired to boost the biodiversity in your local wild places with our [wildlife gardening resource guide](#).
- To get involved with practical conservation projects you could [Volunteer](#) or if you're aged 16-25, join the National Park's [Young Volunteer programme](#). For those aged 11-25 you could get involved in the decision making within the park through joining the [Youth Committee](#). For younger adventurers aged 11-18, you can become a [National Park Junior Ranger](#).



### Reducing impact

- Find out more about how the National Park is committing to reducing their greenhouse gas emissions and aiming to become a Net Zero Organisation by 2030 in their [Mission Zero Route map](#)
- Reduce your carbon footprint: for example- travel to the park by public transport or bike, cut down on waste with reusable items and take litter home to recycle. Have a look at the park's webpage on [reducing your impact](#) and [reducing your waste](#) as well as the John Muir Award [Sustainability resource guide](#) for more inspiration.
- Apply minimum impact approaches to your activities, like the [seven principles of leave no trace](#) and make sure to follow the [Scottish Outdoor Access Code](#) when accessing the National Park or any wild place.
- Check out the park's webpage on [being a responsible visitor](#) and the John Muir Award resource guide on [outdoor access](#).

## Appendix 1

### Loch Lomond & the Trossachs National Park

Loch Lomond and The Trossachs National Park encompasses 720 sq. miles (1,865 sq. km) of incredible landscapes, from rolling lowlands in the south to high mountains in the north. Its woodlands, freshwater lochs and upland habitat support a wealth of wildlife including red squirrels, black grouse, otters and golden eagle. It is also a living, working landscape which has been influenced by people for generations and is visited and enjoyed by many for its recreational value.

However, the natural environment of the National Park faces significant threats. The global climate emergency is the biggest challenge of our time and is already being felt by those who live, work and visit the National Park. The wetter, warmer weather we face also impacts on nature and the health of ecosystems.

Species struggle to adapt to this changing climate and fragile habitats face additional threats such as invasive non-native species, disease and pollution. Healthy ecosystems can not only better adapt to a changing climate, but are better able to absorb carbon and hold onto surface water.

## Appendix 2

### John Muir Award and climate action

The John Muir Award allows a flexible framework for groups, families, and individuals to consider how they might contribute to climate action whilst enjoying the National Park. The Conserve Challenge of each Award requires participants to give back to nature. This could be through direct, practical action or through changing behaviour to minimise environmental impact, all of which help tackle climate change.

By connecting with and enjoying wild nature, people are more likely to care for it. The John Muir Award's Conserve Challenge promotes simple concepts of personal responsibility and making a difference which can be used to explore the climate emergency and the nature crisis in ways that are relevant and meaningful to those participating.

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