

Draft Management Plan for Loch Lomond NNR 2018-2028

PLAN DETAILS

Start 01-APR-2018

End 31-MAR-2028

Site description

Loch Lomond National Nature Reserve (NNR) lies in the southeast corner of Loch Lomond, in the southern part of the Loch Lomond and Trossachs National Park.

Loch Lomond NNR as a whole is 430 hectares (ha) in size and is incredibly diverse. The reserve includes some of the woodlands for which Loch Lomond is renowned, including the wooded shores on the mainland, the islands of Inchcailloch, Clairinch, Torrinch, Creinch and Aber Isle, and the wetlands at the mouth of the River Endrick. Oak woodlands cover the islands, and a mosaic of open water, wetland, grassland and woodland habitats occupy the Mainland. The diversity is high because of its geographical position; it sits on the dividing line between the Highlands and Lowlands so habitats and species at the limits of both their northern and southern ranges in Britain are found here. The climate at Loch Lomond is relatively oceanic with mild winters. The importance of the reserve is reflected by the number of habitats and species which are either legally protected or are covered by Biodiversity Action Plans.

People have managed these habitats for a variety of different purposes over the centuries, but today these wonderful woodlands and wetlands are managed primarily for wildlife and for people to enjoy.

Scottish Natural Heritage managed the whole reserve up to 2004 when the Loch Lomond and Trossachs National Park took on the management of Inchcailloch. In 2012 RSPB Scotland purchased the Wards estate on the south side of the Endrick and now manage this as the RSPB Loch Lomond part of the Loch Lomond NNR. Currently SNH manages, as their part of the Loch Lomond NNR, the mainland part of the reserve north of the Endrick Water and 4 islands (Creinch, Clairinch, Torrinch and Aber Isle), totalling approx. 250ha. This is the land holding that this reserve plan applies to.

1 Our Vision for Loch Lomond NNR

Loch Lomond NNR is the best place in the Loch Lomond and Trossachs National Park to go to see wildlife. The amazing range of wildlife rich habitats and excellent visitor facilities, all set in one of Scotland's most iconic landscapes, make it a must see destination for local people and visitors alike.

The NNR is managed through a partnership between SNH, RSPB and LLTNP, who all promote the reserve through a coordinated plan. SNH provides a link physically and organisationally in the management of the site. The onsite visitor experience is provided by our partners who manage the main access points and are best placed to deal with large numbers of visitors. People experience the less accessible SNH area through participation events and volunteering. The partners work together to promote awareness of the whole NNR through off-site interpretation and social media. It is a classic case of the sum being greater than the parts.

It is one of the most diverse areas in Scotland with a mosaic of habitats; wet grassland, marsh, fen and woodlands support a number of nationally and internationally important species of plants and birds. The areas we manage are ecologically connected to the surroundings creating a cohesive reserve.

The islands are a key part of the iconic Loch Lomond landscape, covered in well structured, regenerating oak woodland. The Endrick Mouth is a healthy functioning component of the Endrick river catchment and its lower floodplain wetland habitats are managed in an exemplary way. The Endrick catchment and woodlands are free of invasive non-native species (INNS), through ongoing management effort delivered by volunteers on site, partners and other land owners/ managers.

2 Natural Heritage Management

Protected Areas and special features

Loch Lomond NNR has been designated for its wildlife interest at UK, European and international level. The Endrick Mouth's wetland floodplain fen habitats support a wintering population of Greenland white-fronted goose, rare plant and invertebrate species of international importance. It has also been designated as part of the larger Loch Lomond Special Protection Area (SPA) and RAMSAR site for its flock of wintering Greenland white-fronted geese.

The Endrick Water that meanders through the reserve is part of the Endrick Water Special Area of Conservation (SAC) designated for its populations of river lamprey, brook lamprey and Atlantic salmon. The Endrick Water SAC and Loch Lomond SPA are part of a EU wide network of protected sites known as the Natura 2000 network. This network aims to protect those habitats and species that rare, endangered or vulnerable within the European Community.

Unlike the island components of the NNR the Endrick Mouth part of the reserve does not overlap with the Loch Lomond Woods Special Area of Conservation (SAC).

While managing Loch Lomond NNR we also have to take account of our legal obligations and Government policy to manage the features that are listed as important in a European or international context. Where a project is likely to have a significant effect on one or more of the qualifying interests of the SAC or SPA, we will carry out an "appropriate assessment". This includes all projects, whether they are direct habitat management or providing a new visitor facility on the reserve. We will only proceed with projects if it can be ascertained that they will not adversely affect the integrity of the SAC or SPA. Likewise, we will also take account of obligations to manage features that are valued as important in a British context, as well as features that are locally important.

The Endrick Mouth part of the reserve forms part of the Endrick Mouth and Islands Site of Special Scientific Interest (SSSI) and the much smaller Aber Bog, Gartocharn Bog & Bell Moss SSSI. A short section of loch shore, to the south of the reserve, also forms part of the composite Portnellan – Ross Priory – Claddochside geomorphological SSSI.

Feature	Protected Area
Atlantic salmon (<i>Salmo salar</i>)	Endrick Water SAC
Beetle assemblage	Endrick Mouth and Islands SSSI
Breeding bird assemblage	Endrick Mouth and Islands SSSI
Brook lamprey (<i>Lampetra planeri</i>)	Endrick Water SAC

Feature	Protected Area
Bryophyte assemblage	Endrick Mouth and Islands SSSI
Capercaillie (<i>Tetrao urogallus</i>), breeding	Loch Lomond SPA
Fluvial Geomorphology of Scotland	Endrick Mouth and Islands SSSI
Greenland white-fronted goose (<i>Anser albifrons flavirostris</i>), non-breeding	Endrick Mouth and Islands SSSI/ Loch Lomond SPA/ Loch Lomond Ramsar Site
Greylag goose (<i>Anser anser</i>), non-breeding	Endrick Mouth and Islands SSSI
Hydromorphological mire range	Endrick Mouth and Islands SSSI
Otter (<i>Lutra lutra</i>)	Loch Lomond Woods SAC
River lamprey (<i>Lampetra fluviatilis</i>)	Endrick water SAC
Upland oak woodland	Endrick Mouth and Islands SSSI
Vascular plant assemblage	Endrick Mouth and Islands SSSI
Western acidic oak woodland	Loch Lomond Woods SAC

Objective NH1: Manage the wetland habitats to create roosts and feeding locations for Greenland white-fronted and wintering wildfowl, and improve conditions for ground nesting birds.

The Endrick Mouth hosts just over 200 wintering Greenland white-fronted geese (GWFG), representing about 1% of the world population; due to this the NNR is part of Loch Lomond SPA and RAMSAR site for the species. Despite the world population declining sharply, the Endrick Mouth flock has remained remarkably constant in more recent years. The cause of this goose's current decline is not well understood, although there are strong indications that it is due to changes at the breeding grounds in western Greenland, rather than at its wintering grounds.

The attraction of the reserve is the security that it offers for roosting birds, with its open water, good all-round visibility, and it is also relatively free from disturbance. The geese feed at several locations of the Endrick Mouth but more typically feed off the reserve on more improved pastures. At the locations where this species roosts or feeds within the SNH managed section, we will manage the sward to ensure that the conditions remain suitable for the geese. We will co-ordinate our management with the RSPB who also improve grassland on their ground specifically as geese feeding areas.

We will continue to participate in the annual national and international surveys of Greenland white-fronted geese, Icelandic geese (greylags and pink footed geese), and the monthly Wetland Bird survey (WeBs). This information enhances our understanding of the waterfowl that use the Endrick Mouth as well as contributing to the understanding of these species at a national and international level.

Additionally, the Endrick Mouth supports an impressive range of breeding bird species for such a relatively small area, and is nationally important for its bird assemblages associated with its woodlands, damp grassland, and lowland open and water margins. It also supports a number of species including reed bunting and grasshopper warbler which are UKBAP species.

Records suggest that the number of ground nesting birds, especially those associated with the grazed swards such as lapwing and redshank have declined. Although this is not an uncommon trend for farmland birds, we want to do all that is practicable to ensure their breeding success on the Endrick Mouth; the grazing and topping regime aid us in maintaining suitable habitat.

The Endrick Mouth woodlands support a nationally important assemblage of breeding woodland birds, including species such as spotted flycatcher, redstart, pied flycatcher and tree pipit (a UKBAP species). Recent monitoring of the assemblage suggests that it is relatively stable and the proposed management for the Reserve's woodlands is likely to maintain this existing assemblage.

Tasks planned to inform and achieve Objective NH1:

Task No.	Task description
NH1.1	Topping for sward height annually
NH1.2	Contribute to monitoring of roost

NH1.3	Contribute to monitoring of feeding areas
NH1.4	Contribute to annual report of GWFG activity in area.
NH1.5	Carry out breeding bird survey, involving volunteers where possible.
NH1.6	Reorganise breeding bird survey so that only indicator species monitored, and records organised to fit Site Condition Monitoring requirements.
NH1.7	Monitor for spotted crane coordinating with RSPB.
NH1.8	Scrub control to remove perches and keep wetland habitat open.
NH1.9	Check barn owl boxes and liaise with local ringers to get nestlings ringed.

Objective NH2: To manage the range of floodplain wetland habitats across the Endrick Mouth to improve their condition.

The Endrick Mouth is an extensive area of floodplain wetland with a mosaic of habitats ranging from more improved and drier grassland swards through to the progressively wetter habitats of wet grassland, marsh, fen and swamp to permanent open water. A small proportion of the floodplain wetland has also developed wet woodland, typically consisting of alder, willow and birch.

Much of the varied wet grassland, marsh and fen habitats of the Endrick Mouth floodplain is managed in a similar way; by a combination of grazing and topping. These management practices are the most effective and efficient way of keeping the grasslands open, and for creating a diverse range of swards at varying height and physical structure. This creates maximum opportunity for different plants to set seed and grow, which in turn, supports wider biodiversity.

We will continue to use grazing management as the main tool to maintain and enhance the condition of the floodplain wetland habitats. To achieve this we will continue to work closely with local graziers to ensure that the right number of cattle and sheep are kept in the right places for the right length of time.

We will continue to complement the grazing with topping, when seasonal weather conditions allow, which fits in with our management objectives to benefit bird species (see above).

Wet woodland, such as that on the reserve is a priority habitat under the UK biodiversity action plan. To date we have managed the wet woodland on the reserve with a light touch, leaving it to develop under fairly natural processes and gradually allowing them to diversify.

Tasks planned to inform and achieve Objective NH2:

Task No.	Task description
NH2.1	Ensure correct grazing levels and correct stocking rates and times, through on-going assessment.
NH2.2	Produce a wetland management plan.
NH2.3	Carry out rare plant monitoring. Offer training and support to volunteers to assist with this monitoring.

Objective NH3: Ensure conditions exist whereby the NNR oak woodlands can continue to develop under natural processes.

We manage woodlands on four islands, Clairinch, Inchailloch, Torrinch and Creinch, within the Loch Lomond Woods SAC. There are also areas of oak woodlands on the north side of the Endrick but we do not actively manage these.

The woodlands on the islands are very much a reflection of past periods of more intensive management. Cattle would have grazed the woodlands in the past and this would have helped to diversify the woodland and reduce the spread of plants like bracken, which can prevent tree regeneration. On Inchcailloch oak was selectively encouraged for the leather tanning and charcoal industries; these woods are now dominated by oak with many trees being around 200 years old. The other islands have more diverse woodlands with a mix of tree species.

In more recent years, these woodlands have been managed with a relatively light touch and left to develop under natural processes, allowing them to very slowly diversify, both in terms of the range of tree ages in the woods and the species found within.

The spread of non-native plant species pose a threat to the ecological integrity of the woodlands. Over the course of the last plan considerable effort has went into making the islands INNS free and this work will continue; ongoing work is required to remove bamboo and *Rhododendron ponticum* on Torrinch and Clairinch.

Deer browsing is an important influence on the island woodlands. They can be heavy browsers of young trees sometimes having a profound effect on the rate at which woodlands can regenerate. A recent herbivore impact assessment suggests that deer browsing may be too high in some places and further action is required. We will therefore be aiming to reduce the impact of deer on the island woodlands. We will continue to monitor herbivore impacts to inform management.

We will work with our neighbours and the Loch Lomond Islands Deer Management Group to co-ordinate deer management.

Tasks planned to inform and achieve Objective NH3:

Task No.	Task description
NH3.1	Keep islands INNS free so continue with bamboo removal on Torrinch and <i>Rhododendron ponticum</i> removal on Torrinch and Clairinch. Carry out annual monitoring of all islands for INNS.
NH3.2	Carry out regular Herbivore Impact Assessments to assess deer impacts; results will inform deer management to achieve favourable habitat and species condition.
NH3.3	Contribute to the implementation of the Loch Lomond Islands Deer Management Group.
NH3.4	Carry out Site Condition Monitoring in line with national programme

Objective NH4: To maintain and enhance the native species and habitats diversity of the Endrick Mouth.

Monitoring and controlling non-native invasive species (INNS) is a significant and demanding element of our management of the Endrick Mouth. INNS are one of the greatest threats to many of these important plant species and habitats of the reserve. These tend to originate from up river. Consequently, seeds are washed down the Endrick and during flooding can be spread across much of the Endrick Mouth. Invasive plant species found in open water and wetland habitats are often very dynamic and if left unchecked continue to expand, often very rapidly, and cause a reduction in diversity of the floodplain wetland habitats. Reducing INNS species therefore has wider biodiversity benefits including for breeding birds and mammal species such as water vole.

We have been controlling Himalayan balsam, giant hogweed, American skunk cabbage and Japanese knotweed within the reserve for some years with a fair degree of success. However a more strategic INNS control project that covers the whole catchment is required, otherwise INNS species just continue to spread onto the NNR which is at the lower part of the catchment. Better coordination of work with partners such as RSPB, LLTNP, and the, Lomond Fisheries Trust is happening but funding has not been secured for a catchment wide control programme.

In the meantime control and monitoring of non-native invasive species will need to continue across the reserve to prevent INNS species recolonizing areas where they have been removed.

As well as plant species, control of non-native mink, and other predators is a key factor in maintain breeding bird and mammal numbers. We will continue to work with our neighbours to achieve predator control and secure the diversity of the site. On the SNH NNR ground the control of mink is currently the responsibility of Montrose estates and their shooting syndicate.

We will continue to increase our understanding of the reserve and contribute to national databases by performing wetland bird surveys (WEBS), and checking for further water vole habitat on the reserve.

Tasks planned to inform and achieve Objective NH4:

Task No.	Task description
NH4.1	Continue with INNS plant control programme, including extensive monitoring of all areas of reserve
NH4.2	Investigate possibilities for creating a catchment wide INNS project.
NH4.3	Check the northern half of the mainland NNR for suitable water vole habitat and if located, for the presence of water voles
NH4.4	Continue dialogue with Montrose estate to ensure monitoring and control of mink is undertaken on an annual basis.
NH4.5	Continue with annual WEBS counts

3 Management for People

Objective VM1: To provide opportunities for increased participation by people in the management of the reserve

One of the main aims for the reserve is to connect people with nature. We will work with our partners to facilitate increased participation across the reserve in its entirety. Although the onsite visitor experience is provided by our partners, who manage the main access points and are best placed to deal with large numbers of visitors, Endrick Mouth could offer other worthwhile opportunities for more people to get a stronger and closer experience of the site.

Our focus for people is on inclusion through volunteering, allowing an experience of the less accessible SNH area through participation events. With our proximity to the central belt we are well placed to access a wide range of people creating mutually beneficial opportunities. Volunteering has health and wellbeing benefits for participants, as well as benefits for the natural heritage through increased contribution to management objectives.

Tasks planned to inform and achieve Objective VM1:

Task No.	Task description
VM1.1	Provide a range of volunteer days on the reserve delivering habitat management, INNS control work and monitoring and surveying
VM1.2	Organise an annual programme of events tailored to encourage participation by hard to reach groups of people
VM1.3	Work in partnership with RSPB, LLTNP, corporate groups to encourage a wider range of groups and people to get involved in the management of the reserve through a co-ordinated volunteer programme

Objective VM2: Coordinate the promotion of the NNR with the RSPB and the LLTNP as the number one site to see wildlife and landscape in the National park.

The NNR is managed through a partnership between SNH, RSPB and LLTNP, who all promote the reserve through a coordinated plan. One of the main purposes of NNRs is to provide opportunities for people to experience and learn about and enjoy their important natural heritage. As Loch Lomond is one of the closest NNRs to the majority of the Scottish population, it presents an opportunity to raise national awareness and engage people with some of Scotland's rich wetland natural heritage.

SNH provides a link physically and organisationally in the management of the site. We will continue to work with our partners to promote awareness of the whole NNR through off-site interpretation and social media.

Tasks planned to inform and achieve Objective VM2:

Task No.	Task description
VM2.1	Draw up a joint promotion plan with RSPB, LLTNP
VM2.2	Produce off site interpretation: leaflets, social media output, update SNH web site and NNR Scotland web site as identified in the agreed promotion plan.

4 Property Management

Objective PM1: To manage the reserve property responsibly following best practice.

We will manage the reserve and SNH Property efficiently and responsibly following good practice.

We manage the infrastructure and do regular maintenance and health and safety checks. We maintain equipment used on site and ensure it conforms to the appropriate regulations. We review and update our fire plan annually.

Tasks planned to inform and achieve Objective PM1:

Task No.	Task description
PM1.1	Maintain all SNH-owned visitor infrastructure (signs, styles, gates) in good condition
PM1.2	Carry out quarterly safety and condition assessments of all visitor infrastructure and keep accurate records.
PM1.3	Ensure the property is maintained and conforms with Health & Safety Regulations including risk assessment and fire plan reviews
PM1.4	Ensure payments are made for the Nature Reserve Agreements and other annual payments.

Objective PM2: Planning & reporting: Ensure management planning is adaptive and effective

The reserve plan provides valuable continuity however it is only part of the process and it will be monitored and reviewed on an on-going basis with formal milestones at regular intervals.

An interim review will be completed mid-plan unless there are significant changes that require an earlier review.

We will review the plan in the final year to inform preparation of the next management plan.

Tasks planned to inform and achieve Objective PM2:

Task No.	Task description
PM2.1	Update budget in Q3 for bidding.
PM2.2	Report on finance and projects in corporate systems
PM2.3	Update annual report at least every quarter and finalise by end of Q1 of following financial year.
PM2.4	Do interim review of management plan in 2023/24.
P2.5	Review current reserve plan and complete new management plan for 2028