2.7 Oligotrophic lochs

2.7.1 Habitat Description

Oligotrophic lochs are a priority UK BAP habitat and included in Annex 1 of the Habitats Directive. They are nutrient poor, usually occurring in upland acidic areas, have clear, well oxygenated water. They support limited plant and invertebrate communities but do support the High Focus species brown trout and in a couple of sites the rare Arctic charr and introduced vendace. Examples in the Biosphere include Lochs Doon, Macaterick, Riecaw, Enoch, Skerrow, Grannoch, Stroan, and Mochrum Lochs (SSSI, near Kirkcowan). Oligotrophic lochs found in the Biosphere are shown in Map 7.

The condition of oligotrophic lochs in the Biosphere is only known for designated lochs found within the Merrick Kells and Mochrum Lochs SAC and SSSI and Wood of Cree SSSI (classified as remaining in good condition) and Mochrum Lochs SAC and SSSI (in poor condition and deteriorating, 2004) (more details found in Habitat assessment section of GSAB 2014). Loch Doon, however, is deemed to have an unsustainably low population of Arctic charr, the notified feature of this SSSI.

2.7.2 Conservation Objectives

The main conservation objective for oligotrophic lochs is to ensure they continue to remain low in nutrients with acid to neutral pH.

2.7.3 Management

Management of oligotrophic lochs may include:

- Exclusion of livestock to prevent trampling of the loch edges by grazing animals to avoid siltation and enrichment.
- Reduction of inputs - prevention of diffuse pollution through silting of lochs and nutrient run-off, through careful control of landuse in the catchments.
- Control of non-native invasive species.

Some prescriptions relevant to different habitat types might deliver benefits to oligotrophic lochs, such as planting of native broadleaved species in a riparian corridor to buffer the acidity associated with coniferous crop species.

Suggested Actions:

- To identify and address any issues, such as stock access, erosion and nutrient input.
- To maintain/improve the water quality and the typical associated species.
- Continue to monitor the recovery from acidification where required.
- Consider the reintroduction or introduction as appropriate of Arctic charr, brown trout etc.

- Continue to improve forestry planting near to the lochs

2.7.4 Example Projects

- Work of Galloway Fisheries Trust and Ayrshire Rivers Trust to assess and reduce acidification and monitor fish populations through genetic sampling, brown trout monitoring, electrofishing surveys.

- Work of the Scottish Environment Protection Agency (SEPA) in monitoring organic and inorganic chemistry, freshwater ecology and morphology of oligotrophic lochs.

- The Department for Environment, Food and Rural Affairs (Defra) Upland Waters Monitoring Network monitors chemical and ecological impact of acid deposition sensitive areas at Round Loch of Glenhead, Loch Grannoch and Dargall Lane (outflow from Loch Dee).

- Loch Glenhead, has an automatic lake monitoring hydro-met station sited on the loch since 2005. As of 2011 this became part of the UK Lake Ecological Observatory Network.

- Loch Grannoch has been selected to form part of SEPA's Water Framework Directive lake surveillance network.

- Bi-weekly bulk rainwater samples are collected from close to Dargall Lane, at Loch Dee, for the UK Eutrophying and Acidifying atmospheric Pollutants (UKEAP) network. Dargall Lane also hosts the SEPA West gauging station number 80005. Data from the SEPA Dargall Lane station are submitted to the National River Flow Archive.

- Forestry Commission Scotland changes to forest structure in line with Forest and Water Guidelines around these waterbodies.

2.7.5 Considerations

- A lack of understanding of the condition of oligotrophic lochs in the Biosphere.

2.7.6 Opportunities

- Heritage Lottery Fund Landscape Partnership bid made in 2015 by D&G Council and partners within Dee catchment which includes aiming to improve water quality e.g. Blackwater of Dee and support the work of the Galloway Fisheries Trust.
- Linking other management objectives, for example peatland restoration, through catchment management to improve water quality

2.7.7 Further Information

JNCC Report No. 317 An estimate of the extent of dystrophic, oligotrophic, mesotrophic and eutrophic standing fresh water in Great Britain: http://jncc.defra.gov.uk/PDF/jncc317.pdf

SNH Guidance Note Oligotrophic and dystrophic lakes (UK BAP Priority Habitat): http://www.snh.gov.uk/docs/A1509011.pdf

UK Forestry Standard Guidelines: http://www.forestry.gov.uk/forestry/INFD-8BVECX

Galloway Fisheries Trust: http://www.gallowayfisheriestrust.org/

Scottish Environment Protection Agency, River Basin Management Plans: http://www.sepa.org.uk/environment/water/river-basin-management-planning/

The standing waters database (this is also based on the GB lakes inventory): http://www.snh.gov.uk/about-scotlands-nature/habitats-and-ecosystems/lochs-rivers-and-wetlands/standing-waters-database/ (796 records for lochs in Dumfries and Galloway)