

Assessment of environmental effects of beaver translocation to the River Leven (Loch Lomond) and River Forth catchments _ NatureScot

A response to the consultation by the British Lichen Society (BLS)

The British Lichen Society <https://www.britishlichensociety.org.uk> was formed in 1958 and has the following aims:

- to promote and advance the teaching and study of lichens;
- to encourage and actively support the conservation of lichens and their habitats;
- to raise public awareness of the beauty of lichens and of their importance as indicators of the health of our environment.

The Society is one of the leading societies studying lichens worldwide and produces a journal of international standing, The Lichenologist.

The BLS Conservation Committee oversees the BLS role to support the conservation of lichens and their habitats. The Committee consists of members with a wide range expertise in a range of ecological fields including researchers at academic institutions, botanic gardens, ecological fieldworkers, ecological consultants and advisory staff of conservation organisations and wildlife trusts.

BLS response to consultation on beaver introduction to Lomond & Forth catchments

The BLS welcomes the proposed assessment within the Lomond SAC: 'Detailed assessment [of old sessile oakwood within the SAC] could identify which stands of trees or individual trees are likely to host important lichen assemblages' but feels that this approach should be adopted more widely to facilitate assessment of additional areas and features in both the Lomond and Forth catchments, where there is a high probability they might support important lichen assemblages.

The BLS is concerned that lichen habitats and species have been scoped out or not adequately considered, due to inadequate consideration of ecologically important/notable habitats/species (e.g. Scottish Biodiversity List species) that are, for example, associated with

- 1) Ancient woodland outwith the rainforest zone
- 2) Ancient Woodland outwith Natura/SAC sites
- 3) Ancient Woodland within SSSIs that are not specifically designated for lichens (but where lichen interest might nevertheless be high)
- 4) Aquatic lichens

Lichen floras of international, national (Scottish), UK and regional importance.(including species that are threatened/vulnerable at these various scales) are associated with all of the above (1-4) and any appropriate assessment needs to carefully consider these and, if they are scoped out, provide adequate reasons why.

To our knowledge A) the existing BLS datasets have not been queried and B) there has been no analysis of knowledge gaps with regard to any areas of potentially high quality lichen habitat that have not been visited by lichenologists (e.g. Ancient Woodland, potential River Jelly Lichen *Lathagrium dichotomum* habitat). **It is recommended that both these issues (A&B) need to be addressed in order to undertake meaningful impact assessments/cost benefit analysis.**

It is unclear why, for example, lichens and bryophytes appear to have been scoped out completely in the Forth catchment. Is this based on exploration of available datasets? Regardless, it would also be useful to undertake a gap analysis study to determine if there are lichen habitats of high importance in the areas of potential beaver habitat. Otherwise the outputs of any cost/benefit analysis are of limited value.

The River Jelly Lichen *Lathagrium dichotomum* is known from Endrick Water and the River Teith, so it is possibly present in other rivers in both the Lomond and Forth catchments. Baseline survey/impact assessment is recommended.

EXAMPLES

- Within the Lomond catchment the likelihood of a threat to lichens and bryophytes (Table 7) has been assessed as Low, yet the likelihood of a threat to riparian woodland is assessed as high. In the Forth catchment the lichens appear to have been scoped out (Table 8) yet the likelihood of a threat to riparian woodland is assessed as High. **Thus the conclusion of the report that the likely threat to lichens at Lomond is Low requires further justification.**
- The report mentions broadleaved woodland in the Forth catchment ('around Loch Katrine, Loch Arklet, Glen Finglas Reservoir, and ...significant riparian habitat along the adjoining rivers') These areas are known to support notable epiphytic lichens and it is highly possible the riparian areas might (desk study /gap analysis recommended). **The scoping out of epiphytic lichens in the Forth catchment also requires further justification.**
- The Lomond catchment is also important for other woodland types (including pasture woodland, oak woodland, pinewood) and although the importance of these is recognised in the report for those SSSI's specifically designated for lichens (e.g. Pollochro), areas of these woodland types outwith SSSI's specifically designated for lichens appear to have been largely scoped out of adequate consideration. **There is probably insufficient available data to make these assessments (desk study /gap analysis recommended) and this needs to be addressed to facilitate a proper appropriate assessment.**
- The 2017 HRA for the River Teith stated 'We advise that it cannot be ascertained that there is no adverse effect on the site integrity of SACs designated for Atlantic salmon and lampreys through dam-building activities and other related activities. Mitigation to avoid these impacts is necessary.....; this precautionary approach is currently needed due to the existing lack of understanding of the full details of any potential impacts on the SACs.... mitigation measures should be included in a Beaver Management Plan for the individual SACs, which should also set out in

what circumstances there could be an adverse effect on site integrity, and a framework through which to implement any mitigation measures should they become necessary. **The BLS advocates similar precautionary approaches, and incorporation of appropriate measures in management plans when considering notable lichen floras (regardless of location in SAC). Addressing Beaver Strategy Goals (below) is essential pre-requisite to determine scale of mitigation necessary and appropriate mitigation.**

The above are examples of some of the additional work that appears to be required before a full assessment of the likely impact of beavers on lichens can be made. A full consideration of likely additional works is beyond the scope of this brief consultation response. A consideration of Scottish Beaver Strategy (2022-45) Goals is presented below:

Scotland's Beaver Strategy - 31 August 2022 - implementation plan.

Goal 2, Objective A (prioritisation based on minimising conflicts with biodiversity and people)

Goal 2, Objective A, Action I Includes a commitment to ‘use spatial assessment tools to identify interests and ground-truth this analysis’ with ‘interests to include known distribution of potentially threatened biodiversity (lichen, invertebrates etc.)’.

Based on the information in the consultation and to our knowledge this has not been adequately addressed (see discussion above).

Goal 2, Objective A, Action II

Includes a commitment to identify and fill knowledge gaps for species of interest.

Based on the information in the consultation and to our knowledge this has not been adequately addressed (see discussion above).

Goal 2, Objective A, Action III (Prioritisation of sites for translocations) was to be based on Action I&II above.

Action I and II need addressing first.

Goal 3: Objective A, Action I (on pre-application and licencing guidance)

The entry under the column heading ‘What needs to be in place to enable this action to be completed’ states ‘interest mapping and ground truthing (see Goal 2)’.

Goal 2 Actions need addressing first.

Goal 3, Objective A, Action III (strategic SEA)

Commits to translocation in line with the Scottish Code for Conservation Translocations. The latter states ‘an evaluation should be conducted of any *likely* biodiversity loss caused by the translocation’ including ‘direct damage to other species by predation’ [which for lichens would include bark stripping/coppicing/tree felling] and indirect damage to other species due to habitat changes triggered by the translocation [for lichens this might

include habitat changes triggered by measures to limit beaver impacts on other features e.g. inappropriate tree protection methods as outlined elsewhere in the BLS response to consultation on the 'Addendum' to the 2017 Strategic Environmental Assessment (SEA) Likely biodiversity loss will be determined by addressing Goals 2 and 3 (see above) and appropriate mitigation/management. Mitigation/management is beyond the scope of this BLS response, (but some initial important considerations are in the BLS response to consultation on the 'Addendum' to the 2017 Strategic Environmental Assessment (SEA))

Chapter 7 of the Scottish Code for Conservation Translocations states that 'particular care should be exercised when the release site *and surrounding areas* [*i.e. areas subject to natural colonisation by beavers*] contain species that are threatened or...ecologically important'. The latter is especially relevant to lichens (e.g. Scottish Biodiversity List species).

This should be addressed addressing Goals 2 and 3 (see above) and appropriate mitigation/management.

Goal 4, Action II: (re. SEA consulting)

Includes a commitment to identify 'the risks and constraints of beaver translocations *and natural colonisation* to other interests' (this includes lichen species, lichen habitats).

See Goals 2, 3, 4

Identifying risks and constraints will involve addressing Goals 2 and 3 (see above) and appropriate mitigation/management.

Goal 4, Action III: (re. benefits and constraints)

Includes a commitment to 'develop criteria and map locations in Scotland that will provide broad assessments of potential benefits and constraints'

Assessing constraints will involve addressing Goals 2 and 3 (see above) and appropriate mitigation/management.

The BLS views that the above goals are not complete enough but due to some overlap between goals, actions etc. could largely be addressed by completing Goal 2 Objective A. Some of this would be best done at National (Scottish level) e.g. incorporating appropriate/relevant BLS data on Scottish Biodiversity List species and Threatened species into the NatureScot GIS datasets, but input from at the regional level via consulting with regional lichenologists is likely to be necessary.

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