Water Management

All operations on Scotland's national forests and land (SNFL) will adhere to the UK Forestry Standard (UKFS) (2017), section 6.7 - Forests and Water, and the Water Environment (Controlled Activities)(Scotland) Regulations (CAR) and the General Binding Rules published by Scottish Environment Protection Agency (SEPA). Operations will also be carried out in accordance with 'Managing Forest Operations to Protect the Water Environment' (FC, 2019).

SEPA is implementing the Water Framework Directive (WFD) in Scotland which is a legal framework for the protection, improvement and sustainable use of all water bodies in the environment across Europe. All water bodies across Scotland have been assessed for ecological and chemical status and catchment plans have been drawn up to ensure water bodies are brought up to an acceptable level. North Region lies entirely within the Scotland river basin district, and is covered by the second River Basin Management Plan (2015 – 2027).

The two aims of the Water Framework Directive (WFD) are to improve water bodies to good ecological status/potential (was by 2015, but later if this was not feasible) and to prevent any deterioration in ecological status/potential. These objectives apply to baseline and non-baseline water bodies. Under the WFD, as well as reaching good ecological status/potential, designated protected areas must meet the standards for which they are designated and have the same objective of no deterioration. Two of the biggest challenges identified in the second river basin management plan are diffuse pollution and modifications to the physical conditions of water bodies.

Operations carried out on the SNFL in North Region adhere to the best practice detailed in UKFS section 6.7 - Forests and Water (FCS, 2017), the Water Environment (Controlled Activities)(Scotland) Regulations (CAR) and the General Binding Rules published by SEPA to support the required ecological protection and improvement.

North Region consider it vital that all operational planning and delivery does not lead to any deterioration of the water bodies or water dependant habitats within the Land Management Plan (LMP) area including tributaries and water bodies directly above or below the SNFL.

The water bodies in the Strathspey LMP area are listed in the following table.

Water body ID	Water body Name	Current Classification
100182	Loch Morlich	Good (2018)
23122	River Luineag (U/S Loch Morlich)	Moderate (2018)
23909	River Luineag (D/S Loch Morlich)	Good (2018)
23910	Am Beanaidh	Good (2018)
23127	Allt Mharcaidh	Moderate (2018)
23129	River Feshie	Moderate (2018)

It is recognised that invasive non-native species (INNS) can have impacts on the condition of areas protected under the Habitats Directive for species or habitats important at a European scale and those nationally important for biodiversity. They are recognised as a significant risk to the water environment in the (2nd) River Basin Management Plan for the Scotland River Basin District (2015 – 2027) and in the North Highland area management plan.

Water crossings for proposed roads infrastructure will be planned and delivered in accordance with the Engineering in the Water Environment Best Practice Guide (River Crossings) (2010) and within the structure of the Controlled Activities Regulations (CAR). Specifically there is a culvert on the Green Lochan trail (NH 99130971) that is a barrier to fish, as part of the thinning operation here, this culvert will be replaced with a bridge that will allow fish passage.. It is acknowledged that the storage of oil will be carried out in accordance with the Water Environment (Oil Storage) (Scotland) Regulations 2006.

As a minimum, The Water Environment (Diffuse Pollution) (Scotland) Regulations 2008 General Binding Rules will be followed. These rules cover the storage and application of fertiliser, cultivation of land, discharge of site water, construction of roads and use of pesticides. These are considered operational planning issues and as such mitigation and method are not detailed in this Land Management Plan, however a robust system of recorded work planning and pre-commencement planning is in place and is available for viewing as required by stakeholders.

North Region Planning staff will contact SEPA prior to commencing engineering works in, or in the vicinity of, inland surface waters to determine the level of authorisation required. Site specific mitigation for engineering works is not a matter for this Plan; however Forestry Civil Engineering will adhere to all planning protocols that apply at the time of construction.

As a minimum, no land shall be cultivated within 2 metres of any surface water or wetland or 5 metres of any spring that supplies water for human consumption, to encourage settlement of silt as the drainage waters flow over the open ground into watercourses.

Surface water drains will not discharge directly into the water environment and, where applicable, North Region staff will seek to remediate existing drains of this type to avoid siltation problems during and after forestry operations.

Where opportunities exist to deliver environmental improvement by the alteration or removal of inappropriately designed or redundant structures, for example, the upgrading of a culvert to allow fish passage or removal of a redundant weir, this will be undertaken in consultation with the relevant stakeholders and we will register the operation on the SEPA website. Opportunities for morphological and ecological improvements may also be considered. For example measures could include the re-meandering of artificially straightened watercourses. It is often the case that opportunities for wetland and peatland habitat restoration are only revealed after felling, when landform is clear and hydrology can be accurately assessed. Therefore site level proposals of this nature are agreed at work plan stage with the Open Habitat Ecologist and the North Region Environment team.

Forestry has a significant role in mitigating the effects of climate change. Building resilience against extreme weather events underpins all our proposals but is particularly relevant in relation to protecting overhead powerline networks, public roads infrastructure and water courses. Previous cultivation and drainage operations across Scotland's national forests and land are inappropriate for current climate predictions and this will be addressed by the adoption of less intensive techniques in future and the establishment of a network of protective native riparian woodland.

Arisings from felling and thinning operations (lop and top) are not considered as waste in terms of this plan, because the material will be incorporated in the brash mat to aid machine traction and flotation thus protecting fragile soils. Additionally material will be retained on site to achieve deadwood objectives; UKFS (2017) suggests (as an element of sustainable forest management) an average of 20m3 of deadwood per ha of forest/woodland. As a result, on bigger harvesting sites areas of fallen and/or standing deadwood might be designated. These areas are not classified as 'felled to recycle' and their location is determined at the site planning stage and recorded in workplan document. Other branches and material left after harvesting contribute to the functional ecology of the woodland and are an important feature of nutrient recycling that will increase biodiversity and may assist future productive woodland establishment. Please see Appendix 6 Deadwood guidance and Map 11 showing the deadwood ecological potential.

Where specific operations produce waste material not detailed above, North Region staff will liaise directly with SEPA to establish the level of permission/licensing required on a site by site basis.

Flood risk

The Highland Council, in partnership with Argyll and Bute Council, Scottish Water, Forestry Commission Scotland, Scottish Environment Protection Agency, Cairngorms National Park Authority and Loch Lomond and the Trossachs National Park Authority has published The Highland and Argyll Local Flood Risk Management Plan 2016 – 2022. (http://www.highland.gov.uk/downloads/file/16173/the_draft_highland_7_argyll_local_flood_risk_management_plan_lpd01). The aim of the Plan is to identify actions required to implement the Flood Risk Management (Scotland) Act 2009, and to reduce the damage and distress caused by flooding over the first planning cycle (2016-2022) and beyond. SEPA, local authorities and Scottish Water are predominantly responsible for flood risk management planning. Forestry and Land Scotland is a SG agency who manages large tracts of land upstream of flood target areas and works with these other agencies to mitigate flooding

The Highland and Argyll Local Flood Risk Management Plan has identified 40 areas where the risk of flooding is greatest – these areas are referred to as the Potentially Vulnerable Areas (PVA).

The second Flood Risk Management cycle is currently being developed and there is a draft Objective Target Area identified for Aviemore ota-396_aviemore.pdf (sepa.org.uk). This states that Aviemore is known for flooding from the River Spey and the Aviemore Burn. Notably in 2015 as a result of Storm Desmond there was considerable flooding of the Spey in Aviemore causing damage to properties and businesses. This data sheet also highlights general actions across the region including through partnership working natural flood management could be used and lists woodland planting, wetland creation and river restoration as potential ways to reduce flooding. These are all being undertaken as part of the Strathspey LMP- see section 5.3 of the main plan for details on these measures. FLS would be keen to work with partners to reduce flood risk.

All operations on the national forests and land will adhere to the UKFS (2017) section 6.7 - Forests and Water, and the Water Environment (Controlled Activities)(Scotland) Regulations (CAR) and the General Binding Rules published by SEPA. Appropriate measures for each site will be agreed at the work plan level and put in place to prevent increase of runoff and/or woody debris from entering watercourses.