Appendix 10 – Fire

UKFS stipulates that forests should be planned to enhance their resilience and mitigate the risks posed to their sustainability by the effects of climate change. Associated management should also enhance the potential of forests to protect society and the environment from these same effects.

Whilst it is not possible to prevent wildfires completely, wildfire resilience can be improved through good forest planning and management.

In the case of the Assich, Laiken and Ferness LMP, wildfire resilience is supported through:

- **Reducing the likelihood of wildfire incidents:**
  - Provision of precautionary signage at public thresholds where fire raising is likely or fire risks are high due to weather conditions.
- **Reducing the potential extent of wildfire if it does occur through forest design:**
  - Restoration of peatland through rewetting.
  - Planting and conserving riparian native woodland corridors that sub-divide coniferous plantation into smaller areas. These areas are less volatile/ permeable to wildfire spread.
  - Varying the age structure throughout the forest to provide a mosaic of habitats, some of which will reduce the fuel load available to fire.
  - Maintaining roads and infrastructure at a standard that enables good vehicle access in the event of a fire.
- **Reducing the potential severity of damage and impacts on people and the environment if fire occurs:**
  - Managing native or mixed woodland around settlements
  - Providing pro-active fire reporting, site access and fire monitoring support to Scottish Fire and Rescue Service (SFRS).
  - In the event of a fire FLS staff will instigate suppression activities at SFRS' discretion and direction.

The current risk of wildfire starting on land within the LMP area is low. Public access is informal, short duration walking or cycling, mainly by locals. There is no history of wild camping within the landholding and no wildfires have been recorded in the last 20 years.

The closest risk of wildfire in the past was a result of muirburn operations on neighbouring ground. In such incidences FLS relies on neighbours following the Muirburn Code which includes a legal requirement to reduce the possibility of fire spreading and giving at least 7 days' notice in writing of any intention to muirburn to landowners within 1 km.

The risk of wildfire potentially spreading on FLS land is also comparatively low on account of the prevailing maritime climate (mild, habitually moist/humid conditions). There is however a well-established pattern and occurrence of high-risk conditions in early springtime when periods of dry, bright and breezy weather can persist for weeks and accumulations of dead vegetation quickly become tinder dry at a time when new lush grass/bracken has yet to re-emerge to reduce overall combustibility. Climate change modelling predicts an increase in periods of dry weather not only in springtime but also with warmer periods during the summer. This will increase the capacity of the landholding's forests and open ground vegetation to burn if wildfire occurs. Native deciduous woodland is less volatile in both the dormant (leafless and wet) season and summer "full leaf" (leaves with high water content and low calorific value), with a comparatively humid understorey.

Through the management of the current forest structure which contains relatively small coupes and a range of forest age, species and management, the risks of wildfire spreading throughout the forest are reduced.

In addition to ongoing management of the productive forest, establishing networks of riparian deciduous woodland over the next twenty years will create greater resistance to potential wildfire spread. Section 3.7 presents data representations of broadleaf/conifer composition over time and shows an increase in the broadleaved component (from 7% to 12% of forest area). Monitoring and managing for fire risk will still be essential over the same twenty year period as areas of young restocked trees and fallow ground represent a greater risk of combustion on account of the higher amounts of accumulated ground vegetation amongst young trees. These areas will dry out faster than a mature woodland understorey in warm, dry and breezy conditions and therefore represent a greater, transient fire risk than from an established forest stand.

FLS is committed to providing a out-of-hours service where staff can be contacted to provide assistance to the SFRS in the event of a fire incident.

Table 1 below highlights the potential risks within Assich, Laiken and Ferness and the actions/mitigation being undertaken to reduce them.

Table 1: Risk assessment for Assich, Laiken and Ferness Forests

Risk Source	Risk Level – High/ Moderate/ Low	Mitigation
Ignition Sources		
History of wildfire	**Low** - No history of wildfire, wilful fire raising, or antisocial behaviour	Precautionary signage at public thresholds if fire raising becomes a concern
High visitor numbers, recreation routes, campsites	**Low-** Low visitor numbers, short duration activities	Precautionary signage at public thresholds during high fire risk periods of weather
Fuel		
Surface fuels in young stands before canopy closure	**Moderate** - Mix of age structure throughout forest - surface fuels in young stands before canopy closure	Manage forest as a mosaic of age structures to minimise fuel load at any one time. Riparian corridors will act as buffers
Surface fuels in open or thinned woodland	**Moderate** - Mix of open or thinned woodland as well as closed-canopy stands	Different silviculture practices throughout forest will minimise fuel load at any one time.
Large amounts of dry understorey or ground vegetation, especially dead vegetation after winter	**Moderate** - Low to medium amounts of dry understorey or ground vegetation, especially dead vegetation after winter	Maintain varied age structure throughout forest, restoration of peatland and establishment of riparian/ broadleaved buffers.
Tree health damage, die-back	**Low** - Healthy trees	Monitor tree heath and manage diseased/ damaged trees
Tree mortality, windthrow, deadwood, or brash	**Low** - Managed levels of deadwood and brash	Monitor tree condition and removed brash where necessary. Match tree species to soil type and site conditions when restocking.
High-risk (flammable) species (e.g. heather, gorse, young conifers)	**Moderate** – Gorse and young conifers present but also Mature trees with a thick or corky bark (e.g., Scots Pine)	Maintain mature trees and particularly Scots pine element within forest. Manage gorse along roadsides
Free draining soils. Organic or dry peat soils	**Moderate** - Mixed soils across the forest including dry peats and organic soils as well as some high water table, mineral soils.	Restore deep peat and keep wet flushes open.

Site Conditions & Land Use		
Dry climate, light, drought-prone soils	**Moderate** – mixed soils throughout forest	Restock with tree species appropriate for soil type and conditions to ensure healthy trees.
Slopes, gullies, south facing slopes	**Low-Moderate** – Mostly rolling/flat ground, with some south facing slopes	Restock with tree species appropriate for soil type and conditions to ensure healthy trees. Riparian buffers and smaller coupes to reduce risk in event of fire.
Flammable habitats or a history of wildfire nearby	**Low-Moderate –** open moor and forest as well as agricultural land. History of muirburn on adjacent landholding.	Manage the forest as a healthy mosaic of habitats and species. Establish broadleaved buffer where appropriate. Maintain good relations with neighbours and collaborate where necessary and be vigilant during muirburn season.
Assets and values at risk		
Close to people, property, utilities, or infrastructure	**Moderate** – Assich has the highest number of adjacent private properties, including the settlement at Wester Galcantry. Small number of power lines present.	Establish and maintain broadleaved buffer close to private properties.
High value ecological, historical, or business assets, including timber	**Low** - No designated sites, historical monuments or business assets on site	Restoration of native woodland on slopes beside the River Findhorn. Restoration of deep peat.
Response		
Remote site, no on-site staff (late detection)	**Low** – Neighbours/ local residents and recreation users would detect fire early.	Increase staff conducting patrols and surveillance on site during periods of very high or extreme fire danger
Inaccessible, poor roads, low weight-limit on bridges	**Low** - Good site access, good roads, hard standings	Maintain roads and access
No water source nearby	**Low -** Water source nearby. Insurance for fire-fighting costs including helicopter response	