

Altitudinal range of the Abernethy â?? Glenmore wildfire

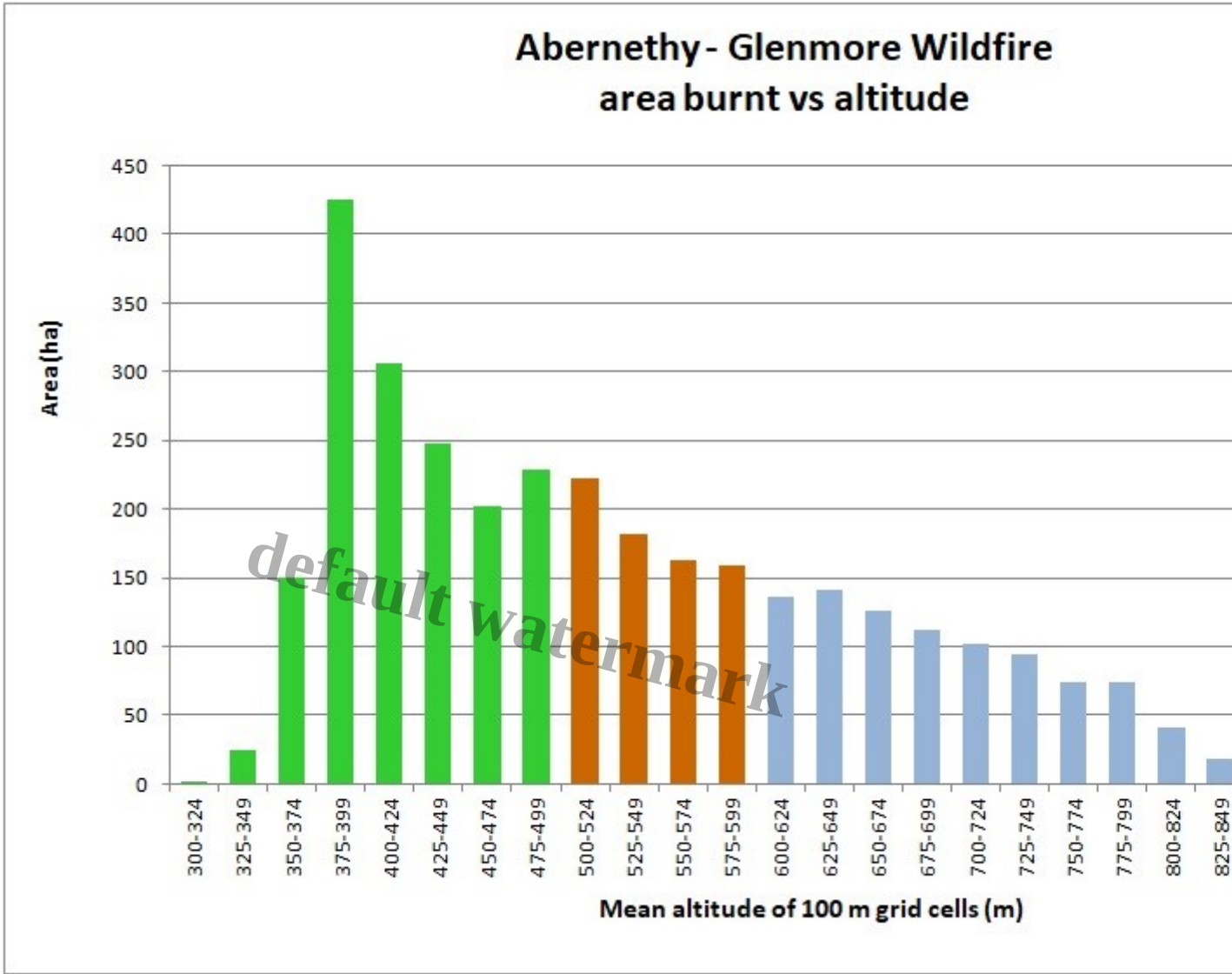
Description



View from Cnap Coire na Spreidhe, looking north-east to Bynack More, showing areas on the east side of Strath Nethy burnt during the Abernethy â?? Glenmore wildfire. The fire reached c.940 m altitude on Bynack Beg, indicated by the red arrow. Photo credit Nick Kempe.

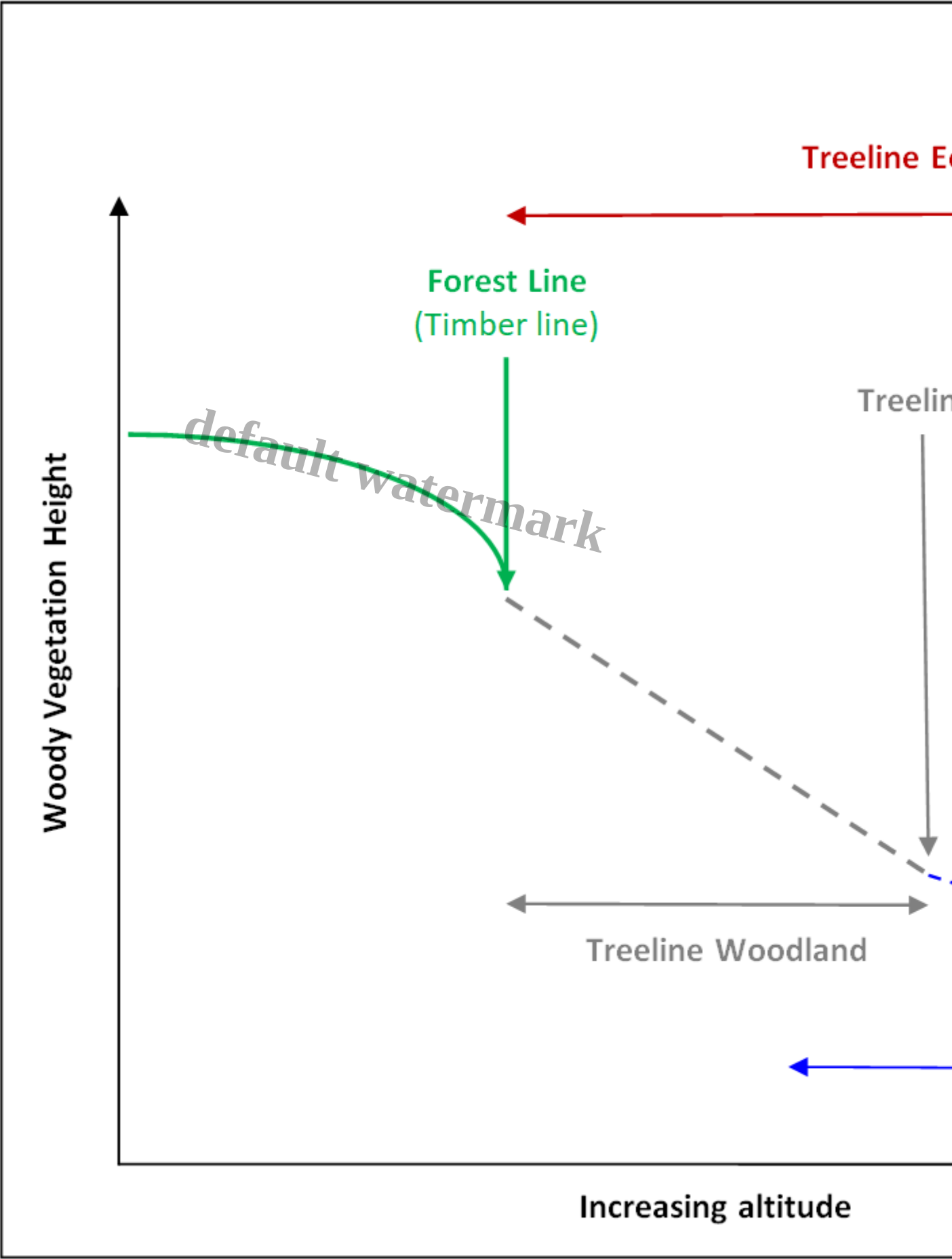
The extent of the Abernethy â?? Glenmore wildfire has been mapped ([HERE](#)). In QGIS a grid of 100 m sided cells was overlain over the fire boundary polygon, and clipped to match the boundary. The mean altitude within each cell was calculated using the Copernicus GLO-30 Digital Elevation Model, downloaded via the OpenTopography website. This is a global 30m grid of altitudinal data.

The altitudinal range of the fire was from 320 m to 981 m. 52% of the area burnt was above 500 m and 29% was above 600 m (chart below).



Abernethy & Glenmore wildfire: area burnt in 25 m altitudinal bands. The treeline ecotone is at 1000 m.

The treeline ecotone comprises treeline woodland and montane scrub (Gilbert, 2010; Amphlett, 2024; see diagram below). The lower altitudinal limit of treeline woodland (the forest line), is the altitudinal limit of erect tree growth above which trees become wind-pruned and increasingly stunted. In the Cairngorms this change in growth form is most apparent in Scots pine. Trees growing above the forest line show a number of characteristic features including: flagging (branches mainly found on the lee side of the trunk); presence of a low skirt of branches, hugging the ground; twisted trunks and branches; and reduced height. In the Rothiemurchus, Glenmore & Abernethy area the average potential forest line, on north-west to south facing slopes is at about 560-590 m. However, on isolated hilltops this can be reduced to c. 500 m.



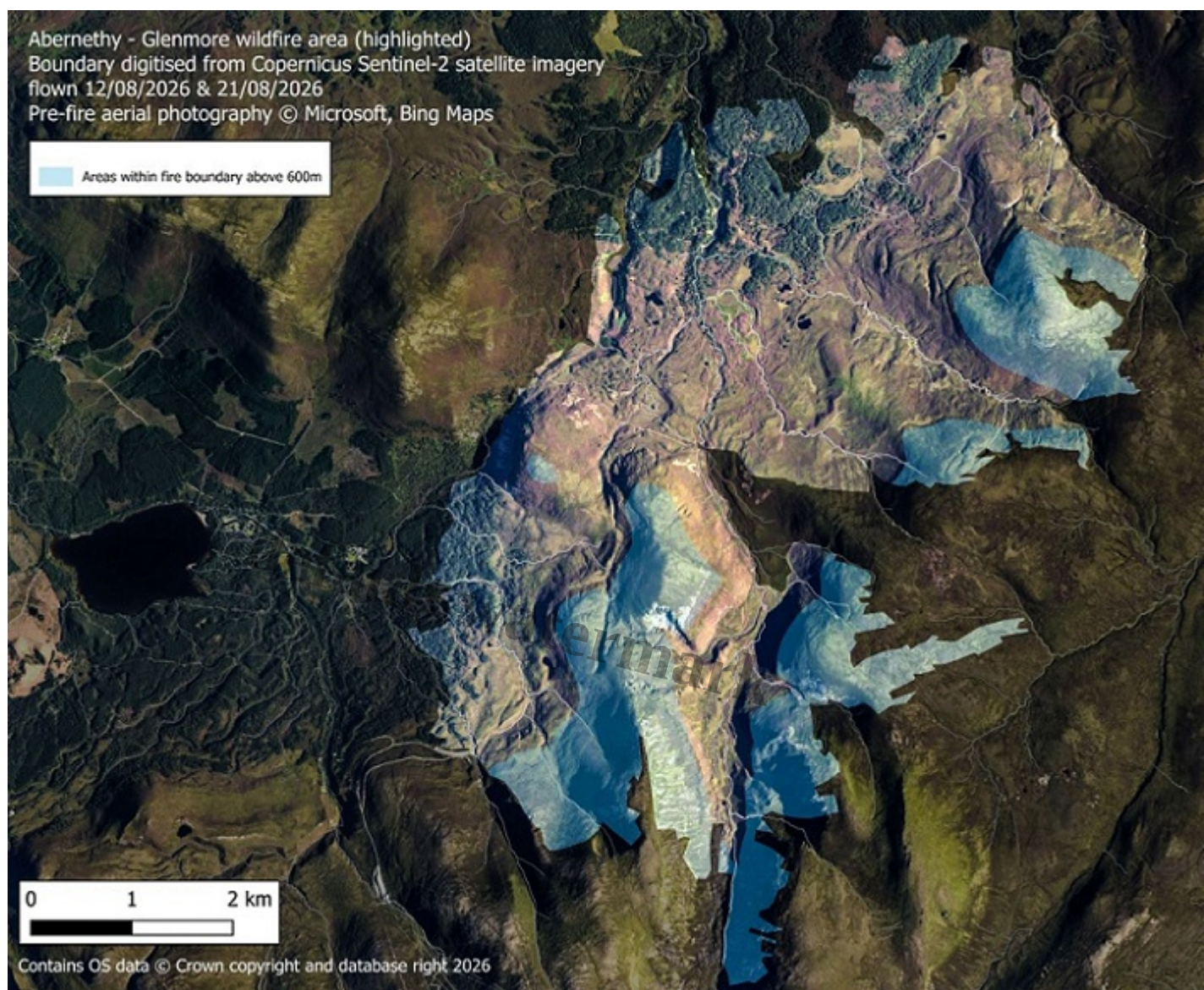
The Treeline Ecotone (Gilbert, 2010)

â??**Treeline woodland**â?? comprises stunted trees above the forest line. The upper limit of this zone (the â??**treeline**â??) is usually defined as the altitude of the uppermost trees with a minimum height of 2m. â??**Montane scrub**â?? extends from a little below the treeline up to the scrub line. The â??**scrub line**â?? is the potential altitudinal limit beyond which tall-shrub species cease to grow or are no more than occasional in montane (alpine) zone vegetation.

It is notable therefore that about half the area burnt is within the â??treeline ecotoneâ?? (here between 500 and 1000 m altitude) (Amphlett, 2024).

To date, many comments about the fire have (understandably) addressed perceived impacts on mature woodland and tree regeneration. Because the upper edges of both Abernethy and Glenmore forests consist of scattered patches of woodland and individual mature trees, along with tree regeneration of varying ages, densities and heights, it is hard to define a woodland area. Pre-fire aerial photography has sufficient resolution to show woodland and scattered trees (see below â?? the full resolution image can be downloaded [HERE](#)).

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The Abernethy & Glenmore wildfire area (highlighted). Wooded areas within the fire boundary are clearly visible: Glenmore (lower left) and Abernethy (upper). Pinkish / purple areas are Heather (*Calluna*) dominated vegetation; yellowish or green areas are mainly bogs, wet heath or grassland. Watercourses (River Nethy and smaller burns) are shown as pale grey lines. Ground above 600 m altitude is shown by a transparent blue tint.

Above 600 m vegetation height (and fuel load) are mostly limited by exposure, extremely so as altitude increases. Even so, 962 ha above 600 m was affected by the fire, and the maximum altitude reached by the fire was c. 980 m above Coire Laogh Mor and c. 940 m on Bynack Beg. It is not clear if the fire petered out as it encroached into patchy montane vegetation communities, or if the minimal fuel load made it easier for people tackling the fire to extinguish it.

Woodland, isolated trees, along with established tree regeneration are visible on online aerial photography. Using the 100m grid referred to above, and just selecting those cells that contained visible trees or tree regeneration, indicates that c.38% of the fire area contained trees and / or regeneration. This area was restricted to the western and northern parts of the fire area, mainly at lower altitudes. Ground survey would no doubt increase this percentage.

In summary, therefore, a minimum of 38% of the fire area contained trees and / or regeneration, 33% of the fire area was moorland (below 600 m, that lacked (visible) trees and regeneration), and 29% of the fire area was above 600 m. Some trees and regeneration occur above 600 m, so there is a slight overlap in these categories.

The Cairngorms National Park comprises 58% moorland (heathland and peatland), 17% woodland and 12% montane habitats. The Abernethy & Glenmore fire (3274 ha) and the Carrbridge & Dava fire (9752 ha, that burnt in late June & early July 2025), indicate that almost all moorland, woodland, and some lower altitude montane habitats within the Cairngorms National Park can potentially burn, if weather conditions lead to a sufficiently high wildfire risk. The potentially flammable habitats within the CNP amount, therefore, to at least 75% of the park area. Tree regeneration, and any developing treeline woodland and montane scrub are likely to be severely impacted if affected by wildfires.

The assemblage of species impacted by the fire above 600 m, while overlapping with that at lower altitudes, will differ. Assessment of the impacts of the fire, and of recovery, should consider the whole altitudinal range affected. Vegetation recovery might reasonably be expected to be slower at higher altitudes, increasing the risk of erosion in periods of heavy rain or snow-melt.

References

Amphlett, A. (2024). Tree and scrub species of the Treeline Ecotone in the Cairngorms National Park, Scotland. British & Irish Botany, Vol. 6, No. 1. ([HERE](#))

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Gilbert, D. 2010. Interactions between climate and land use which drive dynamics in treeline ecotone scrub in Scotland. A thesis presented for the degree of Doctor of Philosophy at the University of Edinburgh.

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Category

1. Cairngorms

Tags

1. CNPA
2. conservation
3. wildfire

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