

UNDERSTANDING THE DRIVERS OF EXTENSIVE PLANT DAMAGE: INSIGHTS FROM FIELD SURVEYS IN THE AFTERMATH OF DAMAGE IN BOREAL AND ARCTIC REGIONS

Jarle W. Bjerke¹, Hans Tømmervik²

1. Norwegian Institute for Nature Research – NINA, FRAM – High North Research Centre for Climate and the Environment; NO-9296 Tromsø, Norway; jarle.bjerke@nina.no

ABSTRACT

Improved monitoring and more scientific awareness have resulted in numerous reports on plant dieback during the last ten years in the Nordic Arctic Region, i.e. the parts of the Nordic countries north of the Arctic Circle. In recent years (2014-16), dieback of certain plants have been a very common sight over large areas, both in the northernmost regions of Norway, Sweden and Finland, and on Svalbard. On the mainland, widespread key shrub species of heath and open woodland have been in a poor state. This includes common heather (*Calluna vulgaris*), crowberry (*Empetrum nigrum*) and bilberry (*Vaccinium myrtillus*). On Svalbard, evergreen and semi-evergreen species were seriously affected. This includes Arctic bell-heather (*Cassiope tetragona*), mountain avens (*Dryas octopetala*) and purple saxifrage (*Saxifraga oppositifolia*). Ecological and climatological studies over several seasons have given insight in the range and causes of this dieback. Frost drought following midwinter thaw events is the most likely reason for most of the dieback. However, some species on the mainland were also severely affected by outbreaks of moth caterpillars that consumed leaves and flowers. We will discuss the ecological implications and possible future frequency of such dieback events in light of ongoing climate change.

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