

Dissertation Summary - Blyth Walker UHI

Email: bdtw1@yahoo.co.uk

“A study into the natural regeneration and methods for long term population survival and expansion of Scots pine (Pinus sylvestris L.) at the Glenfinnan Pinewood”.

My dissertation was done at the Glenfinnan pinewood in Lochaber which is composed of a population of Scots pine interspersed with other species. It is now however suffering from excessive numbers of red deer overgrazing seedlings and saplings. This dissertation aimed to determine whether the levels of browsing by red deer had changed between 2012 and 2020 and whether Scots pine regeneration had occurred during this time. This was done by replicating a survey completed by Forestry and Land Scotland in 2012 with a follow up survey in 2020 using the Woodland Herbivore Impact Assessment to look at browsing levels and regeneration levels of trees at the Glenfinnan pinewood. This method surveys the levels of browsing on seven indicators at each survey point. By comparing the two surveys, it allowed comparisons to be drawn.

This dissertation research showed that browsing levels increased between 2012 and 2020. A damaged deer fence is currently found at this site and this research showed that deer browsing was greater inside the deer fence than outside it, showing it no longer worked. This research also showed and during the 2012 survey Scots pine was found regenerating in very low numbers, however during the 2020 survey no Scots pine were found regenerating across the entire site, showing regeneration of Scots pine had decreased.

This research has wider conservation implications as it shows that unless deer numbers are reduced at Glenfinnan, there will be a continued lack of young trees at the site. The data collected as part of this dissertation as given to Forestry and Land Scotland who own the pinewood. They have used it to develop a plan to construct a new deer fence at the site to increase regeneration. My dissertation also looked at methods for increasing regeneration of Scots pine. Fencing would be great for encouraging regeneration and culling of deer would also be highly beneficial at ensuring natural regeneration of the woodland outwith the deer fence. I also discussed the possibility of introducing lost herbivores, such as cattle, horses and wild boar, to the site. During the 2020 survey I discovered that across most of the Glenfinnan pinewood the intense browsing and grazing pressure from the deer had compacted and reduced the ground vegetation to such an extent that it resembled a golfing green. The work of the Dutch ecologist Frans Vera has shown that large mammals create the ideal conditions for regeneration of trees such as Scots pine and also increase rates of regeneration. They do this by breaking up the

ground vegetation and allowing seeds to reach the soil. These herbivores also open areas of dense regeneration, allowing light dependent trees to grow. This could be done inside the new deer fence and would produce the perfect conditions to increase regeneration of Scots pine, ensuring that the Glenfinnan pinewood survives into the future.

