Páirc Náisiúnta Ghleann Bheatha
Glenveagh National Park

GLENVEAGH NATIONAL PARK DEER CARCASS MANAGEMENT POLICY

Red Deer in Glenveagh

Native Red Deer (*Cervus elaphus*) were hunted to extinction in the Derryveagh Mountains during the 1820's[1]. Late in the 19th century, Red deer were reintroduced to Glenveagh estate for pleasure hunting from various British and Central European sources[2]. Thereafter, stock such as sheep and cattle were largely removed and deer management on the Glenveagh estate was principally tailored to achieve sporting outputs (i.e. high densities of relatively healthy deer). In addition, deer farm escapees since the 1990's, have supplemented the wider Derryveagh Mountains deer herd.

Glenveagh National Park

Glenveagh National park was created in 1975 when the Irish state bought the Glenveagh hunting estate. Today, as a National Park it is managed to meet IUCN Category II National Park Criteria[3] namely 'Large natural sites that are dedicated towards protecting ecological and biological systems and species. Visitor use is managed in these areas for inspirational, educational, cultural and recreational purposes so that no significant environmental degradation is done'.

Deer Population Control

There are no natural predators for deer in Glenveagh National Park other than humans. To protect and restore the endangered ecological systems and species occurring in the park, there is a requirement for humans to take on a role that mimics the actions of apex predators. Such action involves direct control of the deer population via culling and/or displacement (i.e. influencing when and where individuals and/or herds reside throughout the park). Specifically, culling is used to ensure deer density is maintained at a level that allows native woodlands to regenerate. Culling and displacement techniques are also supplemented by passive displacement methods such as fencing to temporarily limit access to particularly sensitive areas (i.e. remnant ancient woodlands).

Human Induced Landscape Change and Nutrient Depletion

The parks landscape has been shaped by human action over many thousands of years. Historic events and actions such as woodland clearances, drainage and planned fires have severely

[1] A Week at Glenveagh, The Irish Metropolitan Magazine, Vol III, 1858. https://books.google.ie/books?id=PF0yAQAAMAAJ&pg=PP7&source=gbs_selected_pages&cad=1#v=onepage&q&f=false

[2] (12) (PDF) Ireland's Ancient Deer (researchgate.net)

[3] IUCN Category II - National Park definition | Biodiversity A-Z

depleted nutrient levels in the ecosystem and created the largely open landscape evident today. The introduction of cattle, industrial scale sheep farming and latterly deer for sporting purposes further reduced native woodland habitat and subsequently prevented natural regeneration. Moreover, the continuous extraction of cattle, sheep and deer carcasses has further depleted the volume of nutrients available within the ecological system that support the now rare and endangered habitats and species occurring within the park. NPWS staff conservatively estimate that approx. 150,000 animal carcasses (i.e. Cattle, sheep and deer) were removed from the Glenveagh ecosystem since the year 1600, without any balancing nutrient inputs (e.g. fertilizer). When this extraction of nutrients is combined with the extensive industrial scale drainage of peatlands (1000's of kilometres), regular fire damage, historic woodland clearances and large scale over grazing, the natural systems in the park have become severely degraded and are now acutely nutrient poor. Collectively, these human actions have profoundly impacted the underlying natural habitats and the processes that underpin their ability to function as a self-sustaining ecosystem.

Benefits of Nutrient Retention in the landscape

In keeping with IUCN criteria for CAT II National Parks, the main objective for Glenveagh NP is the protection and restoration of functioning ecosystems. To that end, the park has adopted a closed ecological policy with the aim to stop the extraction of all natural resources including but not limited to; flora, timber, peat and animal carcass. This means that natural resources grown or developed within the park limits will be, as far as practical, left to biodegrade in situ or used within the park to support the restoration of natural ecological processes (e.g. drain blocking, deer or stock fencing, woodland regeneration, peat hag restoration, water quality protection). It is well established that both standing and fallen dead wood are an integral element in all native woodlands and an essential vector by which nutrients are recycled[4] Furthermore, dead wood is recognised as a critical element in the function and lifecycle of native woodlands[5]. Equally, dead animal carcasses (i.e. deer) are a natural reservoir of nutrients (e.g. Phosphorus) in an ecosystem[6,7] and they are also important vectors for nutrients to cycle between trophic levels (i.e. up and down the food chain; insects, avian predators, mammal predators, avian predators, insects) [8,9]. Specifically, deer carrion has been documented to have a direct positive effect on the abundances and diversity of various invertebrate functional groups (e.g. Arthropods), as well as a delayed positive effect on localised plant biomass, nutritional quality and seed dispersal[7,10]. What is more, after near

[4] https://journal.societyofirishforesters.ie/index.php/forestry/article/download/10940/10022

[5] https://www.ucc.ie/en/media/research/planforbio/pdfs/publications/30-Sweeneyetal2010.pdf

[6] https://doaj.org/article/9fbdece7c30b42a78b7b20dd37c5cdb6

[7] https://besjournals.onlinelibrary.wiley.com/doi/full/10.1002/2688-8319.12356

[8] https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0071352

[9] https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0226946

[10] Special delivery: scavengers direct seed dispersal towards ungulate carcasses - PMC (nih.gov)

complete decomposition, plant biomass was five times higher, and nutritional plant quality was higher at test deer carrion sites compared with control sites[7]. Furthermore, deer carcasses have been shown to provide foraging habitat for insectivorous birds[11] and forage for apex predators such as Raven, white tailed and Golden eagle[12,13]. Within this context, Glenveagh NP policy is to retain culled deer carcasses in situ.

Overall Aim: Deer in Glenveagh National Park fulfil as natural a function as possible in supporting ecological processes and the wider landscape scale ecosystem.

Measuring Success: Success will be measured by the results of habitat surveys (e.g. Article 17 monitoring, juvenile tree progression surveys, blanket bog and wet heath condition and Qualifying Interest bird surveys), as well as dedicated research studies on carcass decomposition.

Relevant Legislation: (EC) No 1069/2009[14]

2. This Regulation shall not apply to the following animal by- products:

> (a) entire bodies or parts of wild animals, other than wild game, which are not suspected of being infected or affected with a disease communicable to humans or animals, except for aquatic animals landed for commercial purposes;
>
> (b) Entire bodies or parts of wild game which are not collected after killing, in accordance with good hunting practice, without prejudice to Regulation (EC) No 853/200

Glenveagh NP Deer Carcass Policy Objectives:

1. Deer are culled by licensed NPWS staff using non- lead ammunition.
2. Culled deer are opened to encourage rapid decomposition.
3. In the interests of protecting water quality, no carcasses are left in situ within 20m of open drain or 50m of open water course.
4. In the interests of preventing dogs accessing carcasses, no carcasses are left in situ within 50m of an established track. Note, park policy is that dogs are always kept on a 1.5m lead within the park boundary.
5. In the interests of supporting research, analysis and future management, accessible culled deer carcasses will be ear tagged and their details registered on the NPWS Glenveagh NP deer cull app.

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[11] (12) (PDF) Reindeer carcasses provide foraging habitat for insectivorous birds of the alpine tundra (researchgate.net)

[12] https://www.researchgate.net/publication/229991796_The_Golden_Eagle_in_relation_to_its_food_supply

[13] (12) The diet of Golden Eagles Aquila chrysaetos in Scotland | Request PDF (researchgate.net)

[14] https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:300:0001:0033:en:PDF

6. In the interests of monitoring scavenger populations and supporting research, analysis and future management the decomposition and scavenging of a selection of deer carcasses will be recorded and/or documented per year (e.g. trail cameras).
7. In the interests of supporting endangered ground nesting bird populations, carcass availability will be consistently maintained throughout the bird breeding season to provide diversionary food sources[15] and to ensure no 'cliff edge' in food resources for scavengers.
8. In the interests of disseminating information regarding this policy park staff will work to develop appropriate public engagement tools for explaining and demonstrating the benefits of the policy.
9. In the interests of supporting a healthy deer population in Glenveagh NP, 1:10 deer will be inspected for obvious signs of a Notifiable Disease or injury (not related to culling event). Any signs of disease or injury will be recorded and results communicated to relevant stakeholders.

[15] https://royalsocietypublishing.org/doi/10.1098/rspb.2024.2921