Guidance for Habitat Impact Assessment (HIA) Surveys



National Advice Hub T: 0300 323 0161 E: advice@fas.scot W: www.fas.scot

Assessing the habitat impacts of grazing on habitats requires looking at the various effects of herbivores, notably red deer, on the main habitats that occur in the uplands. These habitat types are *dwarf shrub heath (wet & dry) and blanket bog*, which are the most extensive habitats in the uplands. Blanket bog is a hugely important store of carbon, and intact blanket bog with a good layer of bog mosses, are especially valuable because they are actively forming peat and storing carbon. Other upland habitats including flushes, grassland, bracken, scrub, woodland and montane heath, and transitions into and between habitat types are not assessed in this basic methodology.

Dry heath typically overlies freely draining mineral soil with no more than a thin layer of peat on the surface. The vegetation is dominated by ling, bell heather, blaeberry, and fine grasses. Cowberry, crowberry and bearberry may be present. Dry heath tends to be the dominant moorland type in most eastern and southern areas of Scotland.



Blanket bog occurs on deep peat (over 50cm deep) on flat or undulating ground and in basins. Sphagnum (bog) mosses and cotton grasses are usually abundant, and deer sedge, heather and pools are typically present. At high deer densities grazing and trampling become damaging which reduces the cover of bog mosses and leads to bare peat which can lead to erosion.

For both blanket bog and dwarf shrub heath the browsing and trampling impacts on heather are assessed using the proportion of last years long shoots that have been eaten: low <33%; moderate 33-66% & high >66%. On blanket bog which overlies deep peat, Sphagnum or bog mosses, which are sensitive to trampling, vehicles, or burning are recorded as an indicator of habitat condition because at high deer densities grazing and trampling become damaging which reduces the cover of sensitive bog mosses and can lead to bare peat which can then lead to erosion.



Wet heath occurs on shallow peat (less than 50cm deep) and is the dominant moorland vegetation in many western parts of Scotland. Typical species are cross-leaved heath, purple moor grass and bog asphodel while bog myrtle may also be present.





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Habitat Impact Assessment Summary

Monitoring to assess broad impacts at **Deer Management Group level** uses 30 randomly selected plots chosen by SNH on each habitat type using Land Cover Scotland 1988 maps. Impacts can be assessed at any scale from local or estate scale to more widespread on a large scale. Monitoring to assess local impacts such as at **estate level** would require more plots eg 30 on each habitat type per estate to identify local variations.

The first year of HIA survey will help to establish a base-line and will allow changes or trends to be identified over time.

Plots

- random "plots" are given on the 2 main habitat types
- locate plots using GPS coordinates
- · permanently mark each plot with a short wooden post on the SE corner
- a 2m x 2m plot is set up using *four 2m bamboo canes* lying N/S
- each plot is sub-divided into 16 *using canes or strin*g for assessment
- a photograph is taken looking north and kept for reference and comparison
- in comments note impacts such as burning or heather beetle damage

Data Sheets



- for dwarf shrub sheets

- in all quadrats record presence or absence of heather
- in selected quadrats assess heather (or blaeberry if heather
- absent) browsing of last years shoots and vegetation height
- in the whole plot assess dwarf shrub heath trampling
- using breakage of heather stems & the presence or absence of dung & note mammal species

for blanket bog sheets

- in all quadrats record presence of bog moss
- in all quadrats record hoof prints on bare peat
- in selected quadrats assess heather browsing of last years shoots & vegetation height
- in the whole plot assess the presence or
- absence of deer or hare dung.

Identifying changes in impacts can help inform decisions on future deer management in the context of that estate or DMG to achieve objectives eg "favourable" condition with a high level of plant species and varied vegetation height.

Generally a "sustainable" deer density will vary between <5 deer/km² on fragile blanket bog to 10-20 on more productive dwarf shrub heath.

Setting a target deer density will depend upon the proportions of each habitat type and any other significant variable eg woodland, other herbivores, deer migration and mortality.