Heath and Peatland

Heathland

Heather is a dwarf shrub that is internationally recognised as having high conservation value and Scotland hosts the largest concentration of heather moorland **in the world**. Upland heath is the dominant land cover extending over **21-31% of Scotland's total land area**. In addition, small amounts of lowland heath occur in isolated patches. Heathlands are widely used in the uplands as a grazing resource for both livestock and game (e.g. red deer and red grouse), and provide an iconic image of Scotland.

Peatland

Peatlands are a type of wetland habitat that cover more than 20% of Scotland's land area. Peatlands offer habitats for rare and specialised flora and fauna that have adapted to living in waterlogged conditions. They are a biodiversity rich habitat, which included:

Blanket bog	Raised bogs	Fens
Rare habitats found throughout Scotland	Peat-forming ecosystems that have developed during thousands of years of peat accumulation.	Vary from small to extensive mosaics of wetland habitats
Bog mosses and plants breakdown slowly	Domes, which can grow to more than 10 m in height	

Ecosystem services supplied by heath and peatland

Provisioning	Cultural	Supporting
• Livestock	• Opportunities for recreation	• Nutrient cycling
• Wild foods	• Landscape and Aesthetic value	• Soil formation
• Water supplies	• Cultural heritage	• Water cycling

Regulating	
• Local climate regulation	• Water supply/groundwater infiltration
• Carbon storage and sequestration	• Air purification
• Flood control	• Pollination
• Soil quality and erosion regulation	• Pest and disease regulation
• Water purification	

Ecosystem service example – Carbon storage and sequestration

Within waterlogged conditions, vegetation in peatlands slowly decomposes and stays stored within the soil if undisturbed. This is a result of healthy peatlands capturing carbon dioxide (CO_2) from the atmosphere through photosynthesis. As the plants, that grow on peatlands, do not fully decompose under wet conditions, they do not release carbon, which would otherwise be returned to the atmosphere as CO_2. This process can take hundreds of years. **Currently Scotland's peatlands store 1.7 billion tonnes of carbon**, equivalent to 140 years' worth of the Scotland's annual greenhouse gas emissions. Despite this value, it is currently estimated that 80% of Scottish peatlands are degraded and consequently these peatlands are acting as a **net source of greenhouse gases**. Restoring degraded peatlands will be essential if Scotland is to meet its net zero carbon target by 2045.

Biodiversity

Risks to be aware of

With respect to agricultural production, heathlands and peatlands are typically low output systems and support much lower stock levels than grassland habitats. Extensively grazing these habits allows us to produce food. High grazing pressure in the winter months, when sheep preferentially graze heather, can lead to loss of heath habitat and damage blanket bog and many land managers off winter sheep to reduce grazing pressure at these times. Summer grazing with cattle can help improve upland heathland condition, by grazing back upland grasslands. Degraded peatlands can pose a danger to livestock (e.g. where animals can become trapped in erosion gullies). Looking to the future, restoring peatlands will have an important role to play in helping farms reduce their overall carbon footprint.

Management actions to enhance

Restoring peatland habitats by ditch blocking and scrub removal, rewets the peatland and reconnects it to the catchment. This allows the habitat to enhance the ecosystem services that it can provide.

Well managed heathlands are associated with a variety of characteristic plants forming wet and dry heath. Key species include heather, bell heather, blaeberry, crowberry, cross leaved heath, a diversity of grasses, sedges and flowering plants such as heath bedstraw. These plants in turn support declining insect pollinators and grassland specialist butterflies. Declining waders, including curlew, lapwing and golden plover utilise heathlands during the spring and summer breeding season, moving to coastal and lowland wetland habitats during winter. Retaining a mosaic of heather types and ages, alongside open upland grassland helps to ensure a wide suite of wildlife are catered for.

These habitats are widely recognised for their biodiversity value and provide both carbon storage and natural flood management. However, the value of these ecosystem services can be reduced through drying of the peat surface because of natural and man-induced changes to drainage, burning and grazing regimes.

Assessing the condition of heath and peatland

Heath and peatlands suffer from both over and under grazing, which both adversely impact on the structure and composition of the vegetation thereby reducing the overall value of the habitat. A well-managed peatland can be recognised by the type and condition of the vegetation, including a deep layer of sphagnum moss, alongside characteristic plants such as bog asphodel.

Peatland health can be categorised into one of four condition categories specifically:

1: Near Natural;

2. Modified;

3. Drained; and

4. Actively Eroding.

Use this Guide to assess your peatland. Well-managed heathlands support a structural mosaic of heathers of different ages and types, alongside more open grassy habitat. This structural mosaic can be maintained through summer grazing or muirburn, where appropriate.

Scotland has a target of restoring 250,000 ha of peatland by 2030 and the carbon stored by achieving this will play an extremely important role in Scotland's journey towards Net Zero by 2045.