

## FLORA AND FAUNA THE NATURAL HISTORY OF BENNACHIE

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The flora and fauna of Bennachie is rich and extremely varied – the result of many thousands of years of evolution. Today its higher slopes are moorland, dominated by peat, heather and rocky outcrops, while the lower slopes are largely made up of woodland offering a variety of evergreen and deciduous trees. An abundance of different grasses, ferns, mosses and lichens share the hill with the seasonal flowers and fungi, each seeking out their own particular eco-system in order to survive. A good example are the heaths – three distinct types are found on Bennachie: Bell Heather (*Erica cinerea*) which favours the drier slopes, Cross-leaved Heath (*Erica tetralix*) which prefers the wetter areas, and Heather (Ling) (*Culluna vulgaris*) which covers the upland moors.

The amount of different vegetation is vast, but just a few of the more interesting plants that can be found include: Common Spotted-orchid (*Dactylorhiza fuchsii*), Creeping Lady's-tresses (*Goodyera repens*), Common Butterwort (*Pinguicula vulgaris*), Bog Asphodel (*Narthecium ossifragum*), and Interrupted Clubmoss (*Lycopodium annotinum*).

With such diverse and fertile vegetation, habitats for many creatures have been created, giving Bennachie a broad range of fauna as well as flora. The time of day generally determines what you are most likely to see (although this is not always the case!). Dawn and dusk is usually the time to see badgers (*Meles meles*), foxes (*Vulpes vulpes*), and a good selection of birds, while the warm sunshine of midday might bring out the butterflies, bees or a common lizard or two (*Lacerta vivipara*) basking in the warmth of the sun. Finally the dark of the night will bring the bats, moths and owls. These are just a few of the more common species that may be spotted or evidenced on Bennachie.

One of the objectives of 'Bennachie Landscapes' is to explore this diverse ecology, looking into the many factors influencing changes and charting them from post-glacial times to the present. Questioning the extent of human impact as well as any natural influences on the flora and fauna and attempting to analyse those changes can give an insight into what was happening on Bennachie. They may even provide an answer as to why certain species are there, or conversely why others have disappeared. A vast number of different factors can cause changes such

as the effects of human colonisation, enclosure systems, peat diggings, quarrying, forestry, recreation, fires, climate change, pathogens, etc. In order to highlight some of these occurrences, records of the flora and fauna both past and present are required. Studying and comparing such statistics can highlight variations that have taken place over the years, possibly offering answers to some of these questions and giving an indication into what was happening on the hill at any one time.

Records of the current flora and fauna are kept and continually added to on a database held by North East Scotland Biological Records Centre (NESBReC). Older surveys and reports have been written by many different individuals and groups over the years. These are now being searched in an effort to have them identified, logged and electronically stored. The following three documents are worthy of mention:

(i) W S Duncan created a species list which was published in 'Bennachie' by A. I. McConnachie in 1890. This gives a good account of some of the species on Bennachie at that time, although unfortunately no specific areas are mentioned as to the location of the plants.

(ii) In 1975 a list of plants found during a joint meeting of Charles Fraser Botanical Excursions and the Bailies of Bennachie was drawn up under the direction of Professor C. H. Gimingham.

(iii) Contained in the Bailies' archives is an invaluable survey undertaken by James R. MacKay in 1988 and commissioned by the Gordon District Council. Mr. MacKay has given a detailed account of Bennachie's vegetation, precisely mapped with overlays and documented, together with photographs (Figures 1-3 below are taken from a digitised version).

Mr. MacKay's survey concentrated mainly on the open land above the tree line of Bennachie. An accompanying map with overlays shows: (i) the distribution of interesting species, (ii) estate boundaries, (iii) survey routes and (iv) special interest areas. This is an excellent resource to use as a comparison with other information. For example, following a recent field trip using a section from this survey as a comparison, it was established that the locally rare Grass of Parnassus (*Parnassia palustris*), is still firmly flourishing in the wet grasslands it loves. At the same time it was also observed that there was a number of new Common Juniper (*Juniperus communis*) bushes growing that had obviously appeared since the survey in 1988. However, there appears to have been very little growth from the other shrubs and trees originally recorded.

Another example of the importance of keeping records is the unfortunate disappearance of the Twinflower (*Linnaea borealis*) once believed to have grown on Bennachie but with no recent confirmed sightings. Its preferred habitat is the cooler open pine woodlands. Sometimes the failing of one species can have a direct affect on another, although their demise is not always clearly evident at the time. In the past the Capercaillie (*Tetrao urogallus*) was well in evidence but now only a single female has been reported over the last few years and no sightings of the Scottish Wild Cat (*Felis silvestris grampii*) for some time. Conversely, new species arrive, the rationale sometimes obviously apparent, such as the different varieties of trees planted by the Forestry Commission in their management strategy. But, why have some other species appeared while others have vanished? These are some of the questions it is hoped in time will be answered.

The following three extracts are taken from James R. MacKay's survey. Each case study gives the National Grid square reference of the map with the corresponding field notes:

#### Oxen Craig

Grid Square Ref: 6622 (see Figure 1)

1. From here south to the old peat road (250m) is pure heather with virtually no other flowering plants. From here north for 250m to '3' there is deep peat with heather and cloudberry co-dominant. Cottongrass and crowberry are frequent. Around here the terrain is hummocky.
2. Extensive cloudberry with cottongrass heather and *Cladonia*.
3. Peaty pools. Evidence of 19th century peat cutting west of here.
4. Around Oxen Craig summit heather is dominant, blaeberry abundant, cloudberry frequent along with crowberry, heath bedstraw, wavy hair grass. Shield fern occasional.
5. Fir clubmoss. Between here and Oxen Craig heather relatively short with hardly any other flowering plants. Not much peat.
6. Cloudberry – not seen since Little Oxen Craig.
7. Cloudberry locally abundant on deep peat on hummocks. Evidence of 18th century peat cutting
8. Cloudberry present.
9. West edge of old peat cutting – from here eastward most of peat has been removed for a few hundred metres. Fir clubmoss in area.

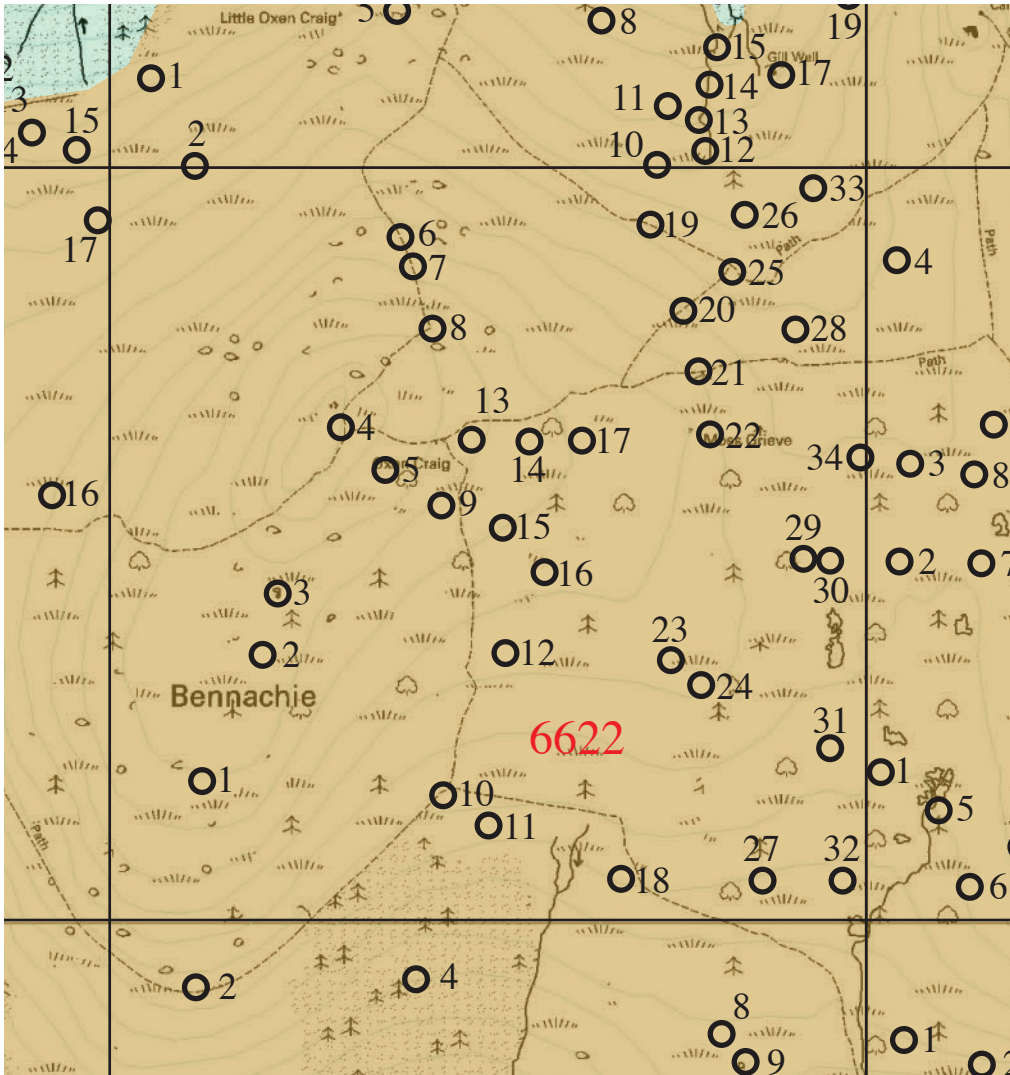


Figure 1. Species recognised in the vicinity of Oxen Craig by Mr. James MacKay.

10. Cottongrass bog with sweet vernal grass, bent grass, Yorkshire fog, sedges, marsh thistle, heath bedstraw, woodrush, *Sphagnum*. Extensive peat cutting above and below. Interrupted clubmoss 20m west of road end.

11. Lowest level of great army of small pines stretching from here to 6622/15 and 6622/24.

12. Cloudberry still present.

13. Boggy area (peat hags). Fir clubmoss present. Heather, cross-leaved heath, cottongrass, bog asphodel, *Sphagnum*. Cloudberry, heath rush, *Cladonia*

14. *Little birches among dry hags with heather dominant plus crowberry and blaeberry.*
15. *From '9' to here most of peat removed giving very short heather but some hummocks and ridges left.*
16. *Bare gravel 30m x 20m being colonised by clumps of heather. From here to '15' there is no peat and heather is very short.*
17. *Heather and crowberry very short and stunted – just rock underneath as all peat seems to have been removed.*
18. *Deep peat again. Been a lot of peat cutting to the north where pines are regenerating.*
19. *Rowan regenerating.*
20. *At the side of the path both alpine clubmoss and fir clubmoss are found.*
21. *Cloudberry abundant.*
22. *Moss Grieve or Avern Knapp (Avern – Cloudberry). Heather dominant, blaeberry and crowberry abundant, cranberry and cloudberry frequent.*
23. *Peaty pool 3m x 2m in peat cut hollow. Cottongrass, Sphagnum, cloudberry and heather.*
24. *Drier. Evidence of sporadic peat cutting. Heather dominant. Cloudberry all the way between here and '31'. Crowberry abundant. Cottongrass frequent. Sphagnum occasional.*
25. *Alpine clubmoss present.*
26. *Lone rowan tree in gully junction. Close by in west gully interrupted clubmoss and stag's horn clubmoss are found more or less together so between here and '20' a distance of less than 200m all four clubmosses are to be found.*
27. *From here to '18' peat is shallow but from here to '32' there is deep peat with cloudberry.*
28. *Alpine clubmoss present.*
29. *A hummocky ridge with cloudberry and deepish peat. From here to '16' (350m) there is no peat and heather is short with crowberry.*
30. *Eroded channel with gravel from which peat was removed just at west edge of uncut peat bog.*
31. *West most edge of this peat cutting. Heather dominant with cloudberry, cottongrass, cross-leaved heath, Cladonia and Sphagnum.*
32. *Deep peat but dry on surface with heather, blaeberry, occasional cross-leaved heath and cottongrass. From here to burn a lot of peat cutting.*
33. *Wetter area with cottongrass and cloudberry abundant plus cross-leaved heath. Heather still dominant. Sedges and heath rush present.*
34. *Bare peat 40m x 20m with ridge up middle. Heather and crowberry present.*

Scare Hill  
Grid Square Ref: 6819 (See Figure 2)

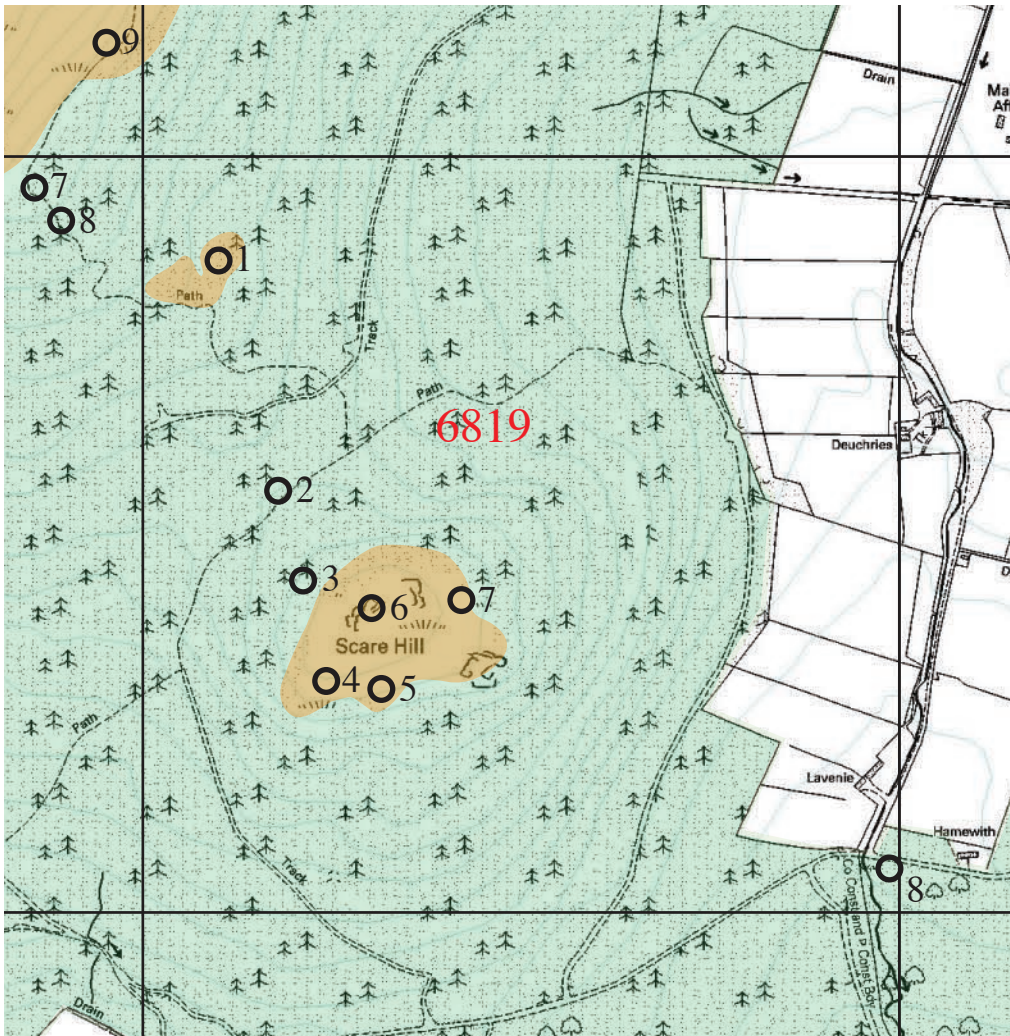


Figure 2. Species recognised in the vicinity of Scare Hill by Mr. James MacKay.

1. Attractive semi-open area with old pine, blaeberry, heather, bell heather and occasional birch and rowan. Could benefit from removal of a few larches. A feature could be made of it eg. picnic area? The only plants of the old pine associate creeping ladies tresses which I have found on Millstone Hill are here both at the northern end and east south east. Largest single area of *Cladonia* on Bennachie on rock outcrop in south

- east (3m x 3m). Other plants are crowberry, 'cranberry', wavy hair grass, tormentil, Sphagnum, cross-leaved heath, heath bedstraw, wood sorrel and the beautiful moss *Thuidium tamariscinum*.
2. Self-seeded *Rhododendron* 2m diameter x 2m high at edge of larch 10m from path. Rather etiolated.
  3. Self-seeded *Rhododendron* 3m x 1.5m high amongst pine with blaeberry dominant. These are the only *Rhododendron* I have found on Bennachie (there are of course *Rhododendron* – becoming a nuisance – in the Tillyfour oakwood).
  4. Heather dominant, bell heather and *Cladonia* abundant, cranberry frequent, wood sage occasional, blaeberry rare.
  5. Some bracken present.
  6. Summit of Scare Hill. Heather dominant, *Cladonia* frequent. Occasional are bell heather, crowberry, wavy hair grass, blaeberry. Bearberry found 20m to north of summit.
  7. Almost pure heather with occasional crowberry. Bell heather rare.
  8. Juniper – erect form at edge of birch wood. One of only 4 sites I know in the Bennachie area were juniper grows. Another on other side of road.

#### Rowantree Footpath

Grid Square Ref: 6823 (See Figure 3)

1. Alpine clubmoss present.
2. Rosebay willow herb among heather.
3. Hosies Well – wet flush with cross-leaved heath and sedge. Upper limit of semi-natural larch, pine, rowan and birch.
4. Bearberry. Some birch regeneration.
5. Gully of Rushmill Burn from the Maiden Causeway down to where aqueduct leaves at 13a, has dense colonisation of rowan, pine, larch, birch and occasional spruce with lots of liverworts and mosses.
6. Old plantation (more or less semi-natural) of mainly larch with some pine, birch and rowan. Heather, blaeberry, etc., as undershrubs.
7. Fir clubmoss. From here to Stay Know pine and birch are regenerating with a lot of bearberry.
8. Bearberry frequent to over 100m to the north east.
9. Foxgloves amongst heather. Rowan regenerating to the north.
10. Bracken dominant with blueberry, heath bedstraw, wood sorrel, fescue, chickweed wintergreen.

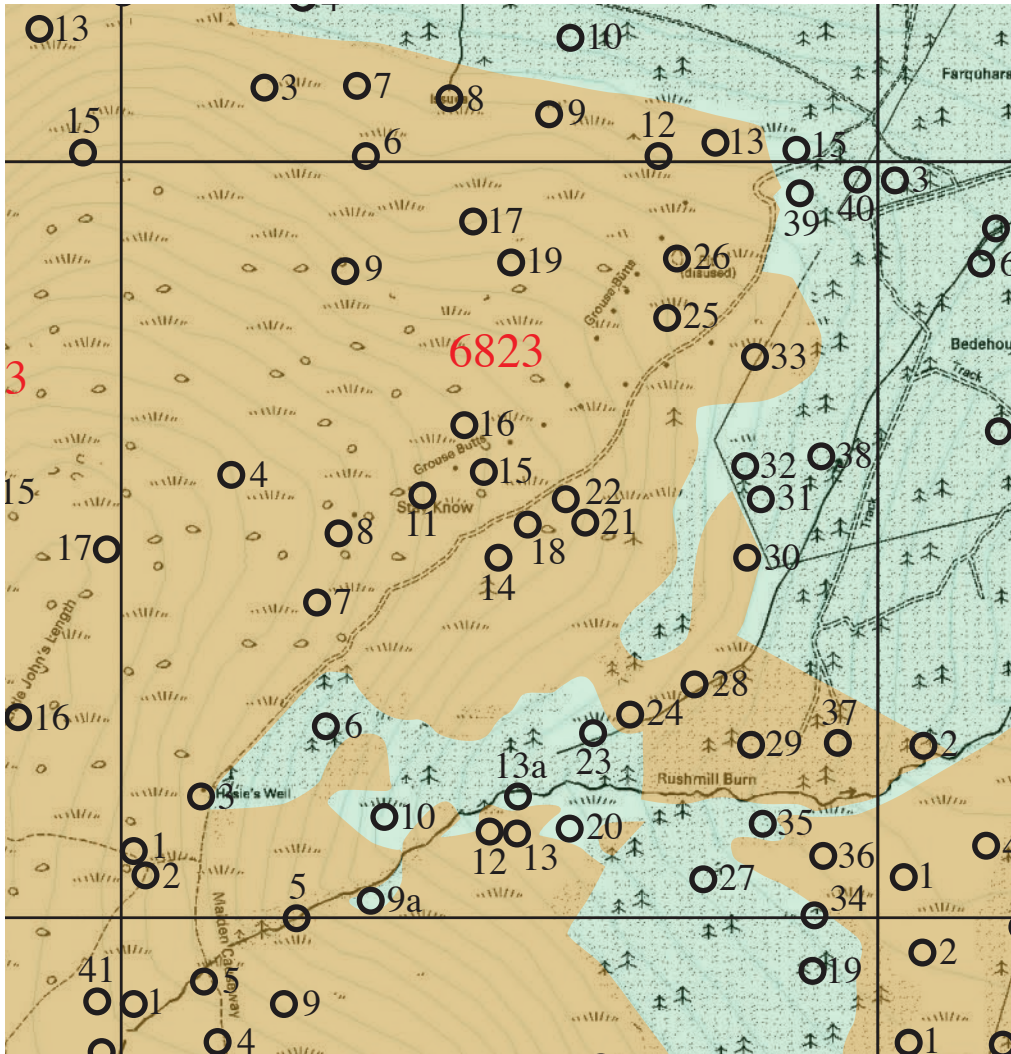


Figure 3. Species recognised in the vicinity of Rowantree footpath by Mr. James MacKay.

11. Clumps of fir clubmoss among the heather.

12. Wet flush with *Sphagnum*, sedge, soft rush, heath rush, matgrass, orchids, cross-leaved heath, marsh thistle.

13. Wetter heath with cotton grass, *Sphagnum*, heather, cross-leaved heath, sedge, bog asphodel, *Cladonia*, deergrass.

13a. Where aqueduct leaves burn.

14. Copse of old larch and pine near the path from which the cairns were removed to reduce erosion.



15. Scots pine regenerating on ridge – about 20m apart on average.
16. Fir clubmoss. No pine regeneration west of here.
17. Wood anemone among heather.
18. Copse of larch trees with rowan. Blaeberry underneath.
19. Fir clubmoss beside wet flush with Sphagnum cross-leaved heath, deer grass, sedge and orchids.
20. Bog with cottongrass dominant. Abundant are bog asphodel, cross-leaved heath, Sphagnum, sundew and heather occasional. Jointed rush at eastern (bottom) end.
21. Scattered larch trees with young pine, rowan and birch.
22. Bog – cross-leaved heath dominant with cottongrass abundant, common moor rush and Sphagnum frequent; bog asphodel, orchids, sundew, butterwort, milkwort, deergrass, Cladonia, fir clubmoss occasional. Very accessible and interesting bog. As the path goes through its edge care must be taken to ensure that any drainage associated with the path should not drain the bog as well. The Bailies' practice of laying stepping stones seems appropriate. Cairns removed from this path to prevent erosion.
23. Quite a lot of bracken amongst the heather under the trees in this area. Bracken locally dominant.
24. Bracken amongst heather and blaeberry.
25. Young pine and birch regenerating in this area between path and grouse butts.
26. Disused quarry – crowberry abundant with bearberry and Cladonia. Young birch and willow at entrance.
27. Possibly planted but now looks like old pine forest with some larch. Open areas. Ground vegetation throughout of heather co-dominant with bell heather. Quite a few trees have fallen making progress through the wood difficult but worthy of more investigation re pine associates such as creeping lady's tresses. A wildlife sanctuary.
28. Although this area north and west of aqueduct is planted, the young spruce trees are very stunted and heather is dominant still.
29. Area contains scattered mature pine and larch trees. Heather dominant and planted spruce trees very stunted.
30. Bracken among heather and blaeberry.
31. Occasional bracken amongst heather, blaeberry, birch, pine, rowan, larch.
32. Patch of bracken 15m x 10m among semi-natural pine.
33. Lot of regenerating pines amongst the heather.
34. Creeping lady's tresses amongst bell heather and blaeberry under old pine.
35. Area of bracken 30m x 20m.
36. Wet heath. Co-dominant are heather, cross-leaved heath, bog asphodel, cottongrass, deergrass and sphagnum. Occasional are sundew and orchids. Stunted pines – large ones beyond on right on drier ground.


37. *Planted spruce trees in check. Heather dominant. Self seeded young pines thriving.*
38. *West and north of the aqueduct is a lovely area of mainly semi-natural pine with associated ground vegetation of heather, bell heather, blaeberry, cranberry, etc.*
39. *Dampish with cross-leaved heath, heath rush and deergrass but still good natural regeneration of pine around.*
40. *Dyke here very nicely colonised by lichens. Mainly heather and crowberry with pine regeneration around.*

The first case study shows extensive peat cuttings to the south-east of Oxen Craig and it is interesting to note that pines were regenerating here. A good area for a variety of clubmosses. The second example indicates a good botanical area for future study. It contains one of the few recorded sites for Juniper. The third situation covers part of the Rowantree footpath which is a very popular area for walking and is easily accessible for those interested in flora and fauna. With its areas of tree cover, burns and flushes, it offers a rich variety of vegetation and incorporates both man-made and natural environments.

Where no written records exist it is hoped to undertake pollen sampling. Waterlogged soils ensure the survival of pollen grains from sub-glacial times. The changing proportions of flora demonstrate the changing ecologies through time. Ideally, the samples should be independently dated by radiocarbon but, even without that, the relative chronology they give can generate an accurate picture of the changing land-use of the locality. By using historical records to help comprehend modern landscapes it is hoped that a deeper understanding of the heritage of Bennachie can be uncovered, helping each generation to better identify with and progress their management efforts, thus preserving Bennachie's natural world for all to enjoy both now and in the future. From the casual walker to the dedicated nature enthusiast Bennachie has much to offer.

A Common Lizard is perched on a large, textured rock. The lizard has a mottled pattern of brown, green, and grey on its back and sides, with a lighter underbelly. Its tail is long and tapers to a point.

Common Lizard  
(*Lacerta vivipara*)

A dense cluster of Heather (Ling) plants with small, numerous purple flowers. The leaves are small and needle-like, typical of the Calluna genus.

Heather (Ling)  
(*Calluna vulgaris*)

A Common Butterwort plant with several upright, green, cylindrical stems. The leaves are small and pointed. The plant is growing in a mossy, damp environment.

Common Butterwort  
(*Pinguicula vulgaris*)

A Creeping Lady's-tresses plant with several thin, upright stems. Each stem has a cluster of small, white, bell-shaped flowers. The plant is growing in a mossy, damp environment.


Creeping Lady's-tresses (*Goodyera repens*)

An Interrupted Clubmoss plant with several upright, green, cylindrical stems. The leaves are small and pointed. The plant is growing in a mossy, damp environment.

Interrupted Clubmoss  
(*Lycopodium annotinum*)

A Capercaillie bird standing on a log. The bird has a mottled pattern of brown, black, and orange on its back and wings, with a reddish-brown breast. It has a large, dark beak.

Capercaillie  
(*Tetrao urogallus*)

A large, white, five-petaled flower with a prominent central stamen. The petals are slightly ruffled and have a subtle pinkish tint near the center. The flower is growing in a grassy area.

Grass-of-Parnassus  
(*Parnassia palustris*)

A Twinflower plant with several upright, thin stems. Each stem has a cluster of small, white, bell-shaped flowers. The plant is growing in a grassy area.

Twinflower  
(*Linnaea borealis*)