

APPENDIX 1

MOUNTAIN QUALITY INDICATORS OF ENVIRONMENT AND EXPERIENCE

Developed with reference to the Munros – Scottish mountains over 3000ft / 914.4m

1 ACCESSIBILITY (including paths and tracks)

This mountain quality indicator is concerned with:

Quality Criteria (and Illustrations)

A Ease of access to the mountain generally and to recommended routes of ascent in particular.

Level

- 4** No restrictions on access.
- 3** Seasonal restrictions on access to parts of the mountain; access to recommended routes / paths is good.
- 2** Some access restrictions but access to main walking / climbing routes is satisfactory.
- 1** Significant constraints in gaining access to the mountain including to recommended walking / climbing routes. No information available from 'Hillphone' system re stalking, when climbed in the stalking season.

B Quality of any paths/tracks.

Level

- 4** Any paths / tracks are essentially natural (little evidence of built / engineered features) and follow natural lines of movement of animals and mountaineers; no vehicular tracks.
- 3** Good paths / tracks that have been sensitively engineered with very little environmental impact; paths / tracks well maintained e.g. stiles / gates / bridges on access route are in good order; little evidence of vehicular tracks.
- 2** Paths / tracks have some maintenance issues, erosion; evidence of considerable vehicular and / or bike usage.
- 1** Paths / tracks are in a very poor state of repair with considerable erosion / drainage problems due to mountaineers / vehicles / motor and /or mountain bikes attempting to by-pass problem areas, blocked drainage etc; stiles / gates / bridges in a bad state of repair or have been blocked (e.g. high barbed wire locked gates, negative signs such as "Private – no access").

D Arrangements for parking or travel by public transport

Level

- 4** Parking availability and / or public transport are satisfactory in relation to level of demand.
- 3** Parking and / or public transport usually adequate.
- 2** Parking and / or public transport often inadequate.
- 1** No parking or public transport arrangements. Situation is totally inadequate and leads to problems or hazards.

2 FAUNA

This mountain quality indicator is concerned with:

Quality Criteria (and Illustrations)

A Evidence of vertebrates associated with ecosystems experienced.

Level

- 4 Mountain supports a wide range of vertebrates (mammals, birds, reptiles, amphibians, and fish) –including less common or endangered species. No evidence of introduced species e.g. grey squirrel, mink, sika deer etc.
- 3 Mountain supports a good variety of vertebrates
- 2 Range of vertebrates is reasonable considering the demands of sporting, agricultural and forestry interests on the mountain. No evidence of raptor persecution or of strict control of fox, otter etc. Some animals are frequently in evidence e.g. red deer, grouse.
- 1 Range of vertebrates is definitely restricted (e.g. absence of raptors).

B Evidence of invertebrates associated with ecosystems experienced.

Level

- 4 Mountain supports a rich diversity of invertebrates – butterflies, moths, beetles, dragon / damsel flies, may / caddis flies, ants, bees, wasps, plant bugs / aphids, mosquitoes, midges, flies, spiders, slugs, snails, woodlice, worms.
- 3 Good range of invertebrate life including several less common species.
- 2 Considerable range of invertebrate life e.g. in woodland, moorland, rock / scree areas.
- 1 Invertebrate life appears to be restricted due to management activities such as muirburn, hydro / drainage schemes, forestry.

C Evidence of agricultural livestock

Level

- 4 No agricultural livestock at any level.
- 3 Agricultural livestock essentially below 1500ft.
- 2 Agricultural livestock at virtually all levels.
- 1 Numbers of livestock cause difficulties to mountaineers and climbers.

It is critical to take account of the seasonal variation in the size and diversity of animal populations due to factors such as hibernation, migration etc. If the reviewer has previous knowledge of the mountain in a different season(s) this can be taken into account – especially in the case of significant snow cover & hard frost on the day of the visit.]

3. FLORA

This mountain quality indicator is concerned with:

Quality Criteria (and Illustrations)

A The flowering plants, including shrubs and trees, associated with the main habitats e.g. woodland, moorland, rock / scree.

Level

- 4 Mountain supports a wide range of native flowering plants (and possibly less common or endangered native species may be noted). There are no obvious introduced plants (e.g. rhododendron, fir, spruce, larch).
- 3 Good variety of flowering plants; evidence of introduced plants is minimal.
- 2 Range of flowering plants is reasonable considering there is evidence of over-grazing above 1500ft. Introduced species are prominent in plantations and others, such as rhododendrons, are easily seen.
- 1 Range of flowering plants is definitely restricted due to, for example, overgrazing, muirburn, extensive forestry plantations. Abundant use of non-native species in plantations.

B The non-flowering plants associated with the main habitats present.

Level

- 4 Non-flowering plants (lichens, mosses, liverworts, fungi, ferns) thrive in all the main habitats. (See footnotes for guidance re seasons etc.)
- 3 A good range of non-flowering plants distributed across the main habitats especially below 1500ft.
- 2 The range of non-flowering plants is considerable though there is some evidence of human influence through, for example, drainage of boggy ground, flood control / hydro schemes, spread of bracken.
- 1 The range of non-flowering plants does appear to be suffering due to habitat damage associated with climatic events and / or estate / outdoor activities.

C Extent to which natural regeneration is present.

Level

- 4 Rich diversity of plant life at all levels with evidence of regeneration (including trees / shrubs) and none of overgrazing.
- 3 Wide range of plant life with some regeneration above 1500ft.
- 2 Above 1500ft poor range of plant life, and limited evidence of regeneration.
- 1 Overgrazing and lack of regeneration at all levels.

It is critical to take account of the seasonal variation in the life cycles and range of plants that can be observed; and also, for example, to facts such as in deep snow much/all vegetation could be covered. If the reviewer has previous knowledge of the mountain in a different season(s) this can be taken into account – especially in the case of significant snow cover & hard frost on the day of the visit.]

4. DRAINAGE PATTERN

This mountain quality indicator is concerned with:

Quality Criteria (and Illustrations)

A The natural drainage pattern of the mountain.

Level

- 4** Natural drainage pattern of burns, lochans, lochs, springs, marsh / bog, river is essentially complete at all levels of the mountain.
- 3** Natural drainage pattern is mainly complete; the impact of alterations below 1500ft may be obvious e.g. extensive plantations, hydro-electric scheme(s).
- 2** Several changes to the natural drainage system noted both above and below 1500'e.g. hydro-electric scheme(s).
- 1** Changes are easily seen in relation to many parts of the natural drainage pattern and this is seriously impacting on the range and quality of habitats.

B The extent of erosion due to climatic events / changes compared to that caused by human activities.

Level

- 4** Evidence of erosion due to water run-off is entirely due to natural events such as abnormal precipitation e.g. cloudburst, rapid snow-melt caused by heavy rain, floods due to natural watercourses blocked by rock/tree fall, avalanche debris etc.
- 3** Evidence of some erosion caused by human activities below 1500' (e.g. clear felling debris affecting drainage).
- 2** Evidence of erosion can be found quite readily but maintenance is having some success in alleviating the extent of environmental impact e.g. by walkers and animals on paths and tracks, by motorised vehicles or mountain bikers on tracks and paths, in forest or woodland, and on open areas of moor and mountain.
- 1** Erosion due to deterioration in the drainage system is emphasised by inadequate management; this has resulted in serious maintenance problems and an overall decline in the quality of ecosystems on the mountain.

5. PAST HUMAN INFLUENCE (Essentially pre-1900)

This mountain quality indicator is concerned with:

Quality Criteria (and Illustrations)

A The presence of archaeological / historical sites, walls, fences, huts etc

Level

- 4 Minor traces of prehistoric sites such as brochs, or historic sites such as sheilings; a single summit cairn and / or O.S.pillar do not detract from the mountain experience.
- 3 Evidence of ancient buildings such as castle, broch, burial chamber or black house do not have an adverse impact on the landscape etc.
- 2 Definite signs of previous settlements of all kinds including works associated with Victorian deer forests e.g. lodges, cabins / huts. Boundaries manifested in walls and / or fences. Remains of old shooting butts on grouse moors.
- 1 Clear evidence of derelict old buildings, disused quarries / gravel pits, remains of boundary walls / fences (and fence wire). Presence of substantial cairns, obelisks, commemorative statues, crosses etc – some even above 1500ft.

B Evidence of previous major habitat changes due to past human use.

Level

- 4 No evidence of major negative habitat change due to historical use, for example, past felling of indigenous trees, quarrying, farming or crofting.
- 3 Some evidence of habitat change e.g. indigenous tree-felling with ancient roots still in evidence in boggy hill margins, peat hags, peat cutting or run rig patterns.
- 2 Evidence of past tree-felling, plantations mineral extraction works etc., with associated access tracks especially below 1500ft. Considerable evidence of farming or crofting altering habitats with negative effects on flora and / or fauna.
- 1 Evidence of habitat damage at all levels due to past activities associated with agriculture, forestry, quarrying or mining.

C Presence of old tracks, pathways, drove roads, military roads, dismantled railways.

Level

- 4 No evidence above 1500ft apart from an old pathway (e.g. stalker's path) forming part of a recognised access route to the mountain and shown on major current maps and guides.
- 3 Some evidence of an ancient path, drove / military road etc. below 1500'; recorded on main current maps. Not a visual scar, blends into landscape.
- 2 Old boundary and / or plantation fences or walls found well above 1500ft. also at lower levels.
- 1 Obvious access tracks or roads to estate or farm buildings, shooting lodges, and to works such as quarries or mines are considered detrimental to the mountain landscape.

[In applying this Mountain Quality Indicator it is important to recognise that important historical events, buildings, and routes may well contribute a positive dimension to the quality of experience on the mountain. It is therefore critical to use personal judgement when balancing this against some negative influences noted on the quality of the environment and landscape.]

6. RECENT HUMAN INFLUENCE (Post 1900)

This mountain quality indicator is concerned with:

Quality Criteria (and Illustrations)

A The presence of modern structures; (see note below for guidance).

Level

- 4 No modern structures (except walking paths) on the mountain at all. Any recent paths are sensitive to geomorphology & flora, & there are clear signs of regular maintenance. No use of vehicles on the mountain.
- 3 No traces of modern structures above 1500ft.
- 2 Signs of modern structures are present; construction and maintenance of any paths, tracks, or roadways is not satisfactory.
- 1 Modern structures are very obvious and create an intrusive factor in the environment. Tracks or roads crudely constructed and / or inadequately maintained resulting in visual pollution and active erosion.

B Evidence of major habitat or drainage changes due to current / recent human activities (e.g. agriculture, forestry, quarrying, hunting, shooting, fishing activities, hydro-electric schemes, wind farms, skiing etc.)

Level

- 4 No evidence of major habitat changes due to current / recent activities. Drainage pattern essentially natural.
- 3 No major habitat change at all above 1500ft; below there are minimal indications. Minor alterations to the drainage pattern.
- 2 Indications of major habitat change especially, but not exclusively, below 1500ft. Drainage pattern substantially altered e.g. by quarrying, gravel extraction, peat cutting, draining of bogs, provision of skiing and biking facilities; poor maintenance of paths resulting in drainage or erosion problems.
- 1 Indications of serious damage to major habitats e.g. insensitive clear felling / logging, poorly planned plantation, excessive muirburn, leisure developments such as skiing, mountain biking. Clear evidence of man's interference with the natural drainage system e.g. large dams for hydro-electric and public water supply schemes, conduits, pipes, generating stations, fish farming, leisure activities such as skiing, mountain biking, motor biking.

C Extent to which conserving a diverse native wildlife in the natural ecosystems is recognised as important.

Level

- 4 The mountain is sensitively managed in order to sustain a rich diversity of native wildlife; this **may** involve an organisation (such as N.T.S., J.M.T., R.S.P.B., S.N.H., National Park, Wildlife Trusts) and involve some limitation of access associated with designated sites of particular importance. There is evidence of natural regeneration, or planting of native species in areas which once supported these species, and none of over-grazing caused by excess populations of deer, sheep, or cattle.
- 3 The various ecosystems (woodland, moor, montane) are being managed in order to promote and conserve wildlife; again this may link with an appropriate organisation(s). There is no evidence of the balance of natural populations and habitats being negatively influenced by man above 1500'; below this there may be evidence of sheep or cattle damaging ecosystems (although cattle can be beneficial for biodiversity and are often introduced for precisely this reason) etc. or forestry of non-native species.
- 2 Over 1500ft ecosystems are not well managed to counter the effects of human use and abuse. At best limited areas are set aside as nature reserves with fencing designed to improve tree regeneration and provide breeding reservoirs for other wildlife.
- 1 No evidence of any protection of natural habitats or of areas being set aside to promote a wider range of wildlife on the mountain. There have been reports of illegal control of raptors etc. In some areas erosion from activities such as skiing, walking, mountain biking **or** motor biking is seriously damaging ecosystems.

D The degree of 'freedom' from evidence of human 'use and abuse' of the mountain.

Level

- 4 For all, or nearly all, of the time spent on the mountain there is minimal indication of human use and abuse at all levels. No litter apparent. No aural and / or visual pollution.

- 3 Definite indications of human use and abuse, overall these are minimal and do little to detract from the sense of wildness – particularly above 1500ft. Very little aural and / or visual pollution (e.g. traffic or aircraft noise, vapour trails).
- 2 Indications of human use and abuse are substantial even above 1500ft. Quite a bit of litter perhaps including abandoned equipment, cartridge cases etc.
- 1 Overall the indications of human use and abuse impinge on all sections of the ascent; often the 'abuse' factor is predominant through, for example, the amount and nature of litter seen, the degree of aural/visual pollution noted.

Modern structures include, for example: buildings, walls, fences, constructions for electricity generation and / or transmission, reservoirs for water supply, angling, fish farming, TV or radio telephone masts, skiing.]

7. DEGREE OF WILDNESS EXPERIENCED

This mountain quality indicator is concerned with:

Quality Criteria (and Illustrations)

A The sense of isolation or remoteness experienced e.g. distance from settlements; remoteness from road, rail or ferry; number of people encountered on the mountain.

Level

- 4 A real sense of remoteness; a walk-in of over 2 hours; the mountain has few visitors.
- 3 General feeling of 'remoteness' with a walk-in of 1-2 hours; it is unusual to meet groups larger than 4 or 5 particularly in winter.
- 2 The mountain is not remote; a walk-in of less than one hour. The mountain is popular and it is common to meet larger parties especially in summer.
- 1 The mountain is close to settlements and / or access points; a very popular ascent at all times of the year; parties are frequently met on the recognised 'tourist' path to the summit.

B The wildness of the terrain covered and scale of the physical challenge associated with the ascent.

Level

- 4 Mountain is very rugged; the access route used involves a considerable amount of hard walking such as steep slopes, scree, rock, boulder fields, large areas of peat hag, boggy ground or heath, or vast featureless areas requiring careful navigation to negotiate. Some sections which involve scrambling and / or navigating narrow ridges.
- 3 Terrain is still physically challenging, even in good conditions, though the access route or path used has variations to enable particularly difficult sections to be by-passed.
- 2 Terrain is not especially challenging, especially below 1500ft. Access route used involves path or track and there are no difficulties requiring 'by-passing'.
- 1 Much of the terrain lacks challenge at all levels and the access route used is a straightforward path.

C) The degree of wildness conveyed by the fauna and flora observed during the time spent on the mountain.

Level

- 4 Overall the fauna and flora reinforce a feeling of wildness; this may be due to seeing uncommon species; or a rich diversity of organisms typical of unspoilt montane areas; or a range of ecosystems that are in an essentially natural state e.g. indigenous old growth forest.
- 3 Fauna and flora observed do contribute to the 'wildness' factor of the ascent. Habitats traversed or seen appear to be in an essentially natural state – certainly on the higher areas of the mountain.
- 2 Fauna and flora contribute little to the 'wildness' factor of the visit. Though some of the habitats are protected there is obvious deterioration in the quality of others.
- 1 Damage to the main habitats is very considerable; there is no evidence of protected areas or of regeneration; the range of fauna and flora is discernibly limited.

[The prevailing weather and season of year that the ascent is made may be important e.g. a substantial snow cover adds to the drama of the situation and imparts an added sense of remoteness and wildness, a very high wind may well increase the physical challenge of the ascent route selected as will thick mist, falling snow, sleet etc. In order to assess this MQI it is advisable to refer to others, for example see: 2 - Fauna and 3 - Flora.]

8. DEGREE OF AESTHETIC & PHYSICAL RESPONSE

This mountain quality indicator is concerned with:

Quality Criteria (and Illustrations)

A The degree to which the spiritual and emotional experience creates a sense of well-being or pleasure.

Level

- 4 The mountaineer feels that it has been a unique day – a ‘halcyon’ experience, a ‘rare quality’ experience. Various factors have combined to provide an overall uplifting sensation – an ascent to remember!
- 3 A general feeling of a ‘very good ascent’ and a sense of considerable satisfaction in having gained the summit. Particular events can be identified such as seeing uncommon animals and / or plants, unusual geology, fossils, landscape etc. No problems of access or poorly maintained paths or tracks have detracted from the quality of the whole experience.
- 2 The quality of experience is not high; gaining the summit poses no substantial physical difficulties in connection with access/routes; the mountain is not remote and possesses few montane features. Feeling of achievement constrained by factors such as: badly maintained paths or tracks, poor quality of views, impaired habitats, lack of privacy caused by intrusion of others.
- 1 The mountain is very accessible and very popular; usually the ascent provides a fairly ‘low key’ response which probably accounts for its reputation as a dull mountain. This is emphasised by factors such as: mediocre natural history, poor quality land management.

B The degree of artistic or aesthetic response to the time spent on the mountain.

Level

- 4 All levels of the mountain provided a very rich experience and provoked creative activities such as photography, filming, painting, writing, poetry. Some of this may occur after reflecting on the ascent.
- 3 In general the senses have been stimulated by the quality of landscape, habitats, flora and fauna; this has resulted in discussion or debate and creative activity.
- 2 Stimulation of creative activities is fairly limited – the mountain and associated habitats and landscapes below 1500ft are not inspiring or challenging.
- 1 Aesthetic or artistic stimulation is limited (even above 1500ft) and may depend on chance factors e.g. the sudden appearance of a rainbow, dramatic lighting effects caused by cloud or mist.

C The sense of achievement or attainment resulting from the ascent of the mountain.

Level

- 4 The mountain visitor experiences a definite sense of achievement from having reached the summit – for example the mountain is remote and / or difficult, complex route finding was involved, previous attempt(s) have failed, a new route has been achieved, or because of the prevailing weather.
- 3 A sense of achievement; e.g. several difficulties have been overcome, the mountain has formed an integral part of a multi-peak ridge etc.
- 2 A sense of achievement is not reinforced by the physical challenges that have been encountered nor from the quality of experiences of animals, plants or habitats nor by the visual or aural pollution associated with human activities e.g. wind farms, road, rail, air transport, skiing, sponsored walks, timber extraction etc.
- 1 The only sense of achievement may be in adding another summit in a different season, ensuring that a companion attains a new top and / or summit. Negative evidence of human interaction with the mountain ecosystems does nothing to improve the situation.

[The prevailing weather, time of day, and season of year when the ascent is made may be important e.g. very clear atmosphere, unusual sunrise or sunset, snow-covering, rainbow, inversion effects, memorable cloud formations, Brocken-spectre etc. The ascent may be a ‘special occasion’ e.g. accompanying a completion, escorting a foreign visitor, a Munroist celebrating a special birthday etc.

Remember that while MQIs 1-7 are intended to be fairly objective, MQI 8 is the opportunity to be much more subjective.]