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EUROPEAN COMMITTEE FOR THE CONSERVATION  
OF NATURE AND NATURAL RESOURCES

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Committee of experts - protected areas

BEINN EIGHE National Nature Reserve  
(Scotland, Great Britain)

On-the-spot-appraisal  
(Renewal of European Diploma A)

by

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## I. INTRODUCTION

### 1.1 Order

By letter of 5th May 1986 the Council of Europe Secretariat asked me to carry out an on-the-spot appraisal of Beinn Eighe Nature Reserve in order to consider the renewal of its European Diploma.

### 1.2 Background

In 1981 the United Kingdom submitted the application form of Beinn Eighe National Nature Reserve which was examined by the Committee of experts on protected areas at its meeting in May 1981 [see SN-ZP(81) 20].

After recognizing the European importance of the area, an on the spot appraisal was undertaken by C. de Klem (SN-ZP(81) 26) and P. Baum [SN-ZP(81) 28] in accordance with article 3.4 of the Resolution (73) 4 of the Committee of Ministers (= Regulations for the European Diploma).

On 26 May 1983 the Committee of Ministers at the 360th meeting of the Ministers' Deputies adopted Resolution (83)7 awarding the European Diploma, category A, to the Reserve. This award included 10 recommendations (see Appendix I to this report).

In accordance with article 5 of the European Diploma regulations, annual reports for the years 1984 [SN-ZP(85) 20] and 1985 [SN-ZP(86) 20] have been submitted by the UK Nature Conservancy Council to the European Committee of Nature and Natural Resources.

European Diploma regulations (article 7.1) stipulate that every five years the European Committee shall examine the possibility of extending the validity of the award for a further period of five years. The first period will expire in May 1988.

The present report has been prepared for the renewing procedures, fulfilling the provisions of Article 7.2 of the Regulations. In this context, no specific terms of reference have been forwarded by the Council of Europe working party to me.

### 1.3 Carrying out the appraisal

The on-the-spot appraisal took place on 16 and 17 June 1986 accompanied by Dr E. Fernández Galiano of the Environment and Natural Resources Division of the Council of Europe, as representative of the Secretariat. We were assisted by the NCC North West Scotland Chief Warden, Mr Ray V. Collier, Mr. S. MacLennan

(Assistant Regional Officer) and the two wardens of the Reserve, Mr. T. Clifford and Mr. H. Brown. I would like to express here my most sincere gratitude to these four people for their effective co-operation and warm assistance.

## II. THE RESERVE

The Beinn Eighe National Nature Reserve covers 4,800 ha of the North-west Scottish Highlands, in an almost uninhabited region. It was the first NNR established in the United Kingdom (1951).

Its mountainous territory (up to 980 m altitud), intersected by deep and open valleys, is a typical example of glacial geomorphology. Most of its surface is open heathland and wet-grassland. Bogs and peats are not uncommon. The tree-limit is very low (ca 400 m) and thus, woodland is restricted to the low slopes, in the valleys. Remnants of the natural Scots Pine formations with part of their associated fauna, are still to be found. With respect to the latter, the red deer stands out as a large herbivore, being a key-factor of the ecosystem. Other key-factors seem to be the micro-relief/drainage and, probably, fire (not natural!). Due to tree felling in the past and the extended use of fire for managing the ling (Calluna), the major part of the Reserve's natural landscape is of a secondary type. Geology and paleontology are also major items in the Reserve's values.

Having given this short characterization, there is no need to extend it any further, as the area has been described in detail in previous papers and, especially, in the Council of Europe's European Diploma series, number 20.

## III. STATE OF CONSERVATION

### 3.1. Natural environment

Based on the information included in the Annual reports [SN-ZP(85) 20 and SN-ZP(86) 20] one can conclude that no major changes have occurred in the status of conservation of the natural environment since the award was given. The general situation I observed seemed to be equal to that reported by the previous on-the-spot appraisal in 1981.

Storms in the winter of 1984 damaged many birch trees and blew down some old Scots Pines, although this has to be considered as a natural phenomenon. Some fires provoked by human activi-

ties occurred during the dry weather season of 1985. Nearly 5000 newly planted Scots Pines and a few hardwood were affected in one case (120 ha), a further 60 trees (1/4 acre) in another, and lastly, 3 acres of a Forestry Commission's plantation of exotic conifers. It will take some time till these areas recover completely but, in general, the negative impact of the mentioned fires can be considered minor in view of their reduced extension, the low heat development and the effectiveness of the fire control measures. Nothing irreversible happened.

### 3.2 Facilities

Anthropogenic impact has been significant on the mountain trail, favoured by weather conditions in 1984 (heavy rain). Despite efforts taken to keep it in shape, the erosion observed resulted in its closure to the public. Restoration work was going-on during our visit.

The Nature Trail at the car park was slightly affected by the flooding of Loch Maree, caused by unusual heavy rain in January 1984 (Chief Warden reports highest levels of water in Loch Maree in living memory!).

The Aultroy visitor centre has been partially refurnished and some of the exhibits updated and improved.

## IV. LEGAL AND LAND STATUS

The National Nature Reserve was formally re-notified in 1985 under the Wildlife and Countryside Act 1981. This reinforces the legal protection of the area, already fulfilling SSI (Sites of Scientific Interest) regulations. The Reserve byelaws have been in force since 1954.

Beinn Eighe has no external protective area or buffer-zone, but planning procedures related to the SSI condition of the area, may act as a guarantee to prevent negative uses of peripheral land.

The Nature Conservancy Council (NCC) owns 87% of the site and negotiations are continuing to acquire/exchange a strip of private shoreline at Loch Maree. Although I feel that the actual uses<sup>1</sup> of this narrow strip are not in contradiction with the Reserve's purposes, ownership unity facilitates enormously mana-

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<sup>1</sup>At the moment, this land is subject to a twenty five year Agreement expiring in August 1987.

gement activities in protected areas, and therefore, this unity should be aimed for (see Recommendation 6).

Recently, the NCC has suggested a provisional value for the Forestry Commission's plantations and their purchase is now under discussion with the Scottish Advisory Committee (see Recommendation 5).

Since June 1976 Beinn Eighe has been a UNESCO Man & Biosphere Reserve, but almost nothing has happened in relation to this special condition.

Beinn Eighe has been selected as one of ten British sites forwarded to the Council of Europe as of importance for dragonflies, and may be included within the CE Biogenetic Reserve Network.

## V. MANAGEMENT

### 5.1 Management Plan

The Beinn Eighe Management Plan for a five year period (1986/87-1990/91) was partially completed in April 1986. It covers only some chapters of the new planning directives recently introduced by the NCC, but as such (incl. key-chapters) can be fully operative. This fulfills one of the most relevant recommendations (nº 10) of the European award.

I feel that rightly so, the general goals ('Ideal management objectives') of the Reserve have been broadened considerably in this plan, in accordance with rational biological conservation principles. Originally, the reserve was more or less focused on Scots Pine (Pinus silvestris ssp. scotica), thus giving rise to the possibility of not considering and/or damaging other items of equal conservation value.

### 5.2 Management activities

Major management activities carried out in this period involve rutinary maintenance, staff training, control/patrolling and ordinary environmental monitoring.

In 1984, 4,500 Scots Pine and 1,500 Bird Cherry were planted and 60 lbs of Rowan berries sown out. Many seed of different hardwood were collected for future planting, including 15 bushels

of Scots Pine<sup>2</sup>. The tree nursery adjacent to the Reserve is being prepared for broad-leaf species (see recommendation 3) and half of the collected Scots Pine seeds have been forwarded to a confident private nursery for their careful preparation. The rest of the seeds are kept in a rudimentary seed bank.

Red deer are being managed within a larger area, Gairloch Conservation Unit (35,000 hectares), which includes Beinn Eighe. To keep deer numbers reduced, stags and hinds are culled every year in the Reserve (6:10 in 1984, : in 1985). Wardens also undertake some minor control of rabbits, rats and foxes, when needed.

### 5.3 Research

Apart from normal meteorological monitoring, acid rain recording was initiated in January 1986. Most research activity has concentrated on surveys of various items (i.e. small mammals, lochs and lochans, moths, dragonflies, plants) and a computer print-out of Event Records was produced for the period 1951-1984.

Several specific research projects (red deer damage in pine regeneration, historical landuse, etc) have been started and many others, which are very important for managerial purposes, are included within the Management Plan. However, they may not be continued or even initiated, due to the lack of adequate facilities. The Annaucan Field Station is almost inoperative in its actual state, and provisions have been asked for refurbishing it, without positive result. If the Management Plan is to be implemented, there is a serious need for having the field station ready as soon as possible.

The national vegetation classification applied as a standard for mapping the National Nature Reserves may not be detailed enough for orienting some specific managerial projects (e.g. new planting of Scots Pine). Perhaps, a more precise mapping of vegetation/habitat or of some key factors (phreatic water dry/wet season) would contribute better. Remote sensing could be a good solution for this task.

A further research program could be oriented towards analyzing the results of different ways and models of thinning the existing dense plantations, something that has to be undertaken anyway. This research would fit in with the philosophy of Man and Biosphere programs.

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<sup>2</sup>There is no guarantee that these seeds are pure, because there are stocks of foreign Pinus silvestris (subspecies ?) in close vicinity.

I feel that a questionnaire should be carried out in order to know about many important variables regarding visitor use: Number of visitors, provenance, language, facilities used, complaints, main interest, reactions to interpretation, suggestions, etc. This information will help tremendously when planning.

#### 5.4 Staff & infrastructure

Beinn Eighe NNR is directly attended by two wardens and two estate workers, one of which was appointed in 1985 under CE suggestions.

All wardens and estate workers are involved in three other National Nature Reserves and two Sites of Scientific Interest which are not far away nor take up excessive time for their management. The wardens live at Beinn Eighe, a fact which I consider very important for many reasons: fire control, anti-poaching, communications, etc.

Excluding the handicap of not having an operational field station, Beinn Eighe has a good infrastructure both in housing and equipment. Recently, GB radios were fitted up to houses and vehicles for safety and fire fighting. In addition, a Vee-pee (hill-machine) was purchased for transporting materials, safety and limited deer carcass extractions.

## VI. THREATS

There are few and only minor environmental threats to Beinn Eighe NNR, most involving unusual weather conditions (dryness linked to fire-risk, flooding, etc). Acid rain seems to be no real threat in this area because of the regional climate; however a monitoring program has started.

The main biological factors of high disturbance potential that are controlled or under vigilance are: red deer and anthropogenic mammal (fox, rat) populations, and on adjoining land, rhododendrons and feral goats.

Fortunately Beinn Eighe is far away from crowded areas, which minimizes visitor impact on the reserve. The number of visitors may be something between 5,000 and 10,000 (data available only for Aultroy Visitor Centre) which is a reduced number, but concentration both in time (maximum in August) and place (nature trails, picnic spots) may cause local problems (e.g. erosion). The scrubby character of the vegetation (heath, bushes) makes most areas intransitable and keep people on the trails.

The long travel distance involved tends to select visitors to a probable high standard of understanding for Nature and open door-recreation (la crème de la crème), and consequently, vandalism and rubbish contamination are very low. Deer poaching is scarce and mostly concentrated outside the reserve area.

A serious threat to the reserve is fire, which can originate accidentally close to trails, picnic areas or nearby campsites. Uncontrolled bonfires on agriculture land are another risk. Fire control seems well organized on the reserve and has the assistance of a local helicopter and fire-brigades.

## VII EUROPEAN DIPLOMA INFLUENCE

Planning authorities and other statutory departments accept more readily the importance of Beinn Eighe NNR due to its international relevance.

The Chief Warden says that the Diploma has enabled the Region to have a greater justification when bidding for staff posts and financial allocations within the total Great Britain and Scottish budget. The purchase of the vee-pee, or the vacant state-worker post which was filled in competition with other NNRs, are examples of this.

Beinn Eighe is the first NNR in the Region to have a Management Plan following the new NCC directives. European Diploma helps to gain priority.

I noticed proudness in the wardens and Regional Staff involved in the planning and management of Beinn Eighe - Diploma area. This normally materializes in positive actions and extra care.

## VIII CONCLUSION

The circumstances of Beinn Eighe NNR at the time of the present on-the-spot appraisal are similar to, or even better than, when the previous appraisal was carried out. If the European Diploma in Category A was awarded then, I see no reason for not renewing it now. I strongly support the renewal.

The recommendations (= not conditional) included in Resolution (83) 7 (see Appendix 1) are not equally fulfilled. Some are still valid in as much as they have not been initiated as yet or that they are related to long-term projects (i.e. 1, 9). Others are already covered or superfluous by being incorporated into the Management Plan (i.e 3, 7, 10).



In light of the above, I have foreseen the need of revising the recommendations and to formulate a more updated set. By doing so, I have introduced minor additions and some modifications to previous ones. My recommendations are the following:

- a. Where ecological rehabilitation of the formerly forested lower parts of the Reserve involves direct planting of indigenous tree-species, this should be carried out with local genetic stocks and according to ecological principles (i.e. irregular uneven age planting). Fertilizer (phosphate) should be used only once and be applied to individual trees at the time of planting.
- b. Steps should be taken to continue the development of a seed bank of autochthonous plant and tree species, especially Scots Pine, with guarantees of the origin pureness of the genetic material.
- c. The old plantations of Scots Pine in the North-east part of the Reserve should be treated to give the woods a more natural structure by reducing density and changing the uniform spacing pattern.
- d. The 'Scots' Pines of foreign origin existing in the Forestry Commission stands in the South of the Reserve should be removed immediately once the NCC takes over this sector. The rest of the stand should be managed according to the Management Plan.
- e. The 23 ha of private land bordering Loch Maree should be acquired if possible.
- f. Plant communities or habitat types should be mapped in detail throughout the whole Reserve in order to provide a planning basis for sound biological management.
- g. The number of red deer in the Reserve should be limited so as to avoid damage by overpopulation.
- h. A survey of visitor should be conducted in order to gather important information on their needs, uses and characteristics (i.e. provenance, language, etc).
- i. Means should be urgently provided so that the Anancan Field Station becomes fully operational as soon as possible in order to support all the major projects of the existing Management Plan (e.g. surveys, monitoring, research, estate management).

NON C.E. REFERENCES

- Clifford, T.- Beinn Eighe NNR. Five year management plan 1986/87 - 1990/91.- 1986, 27 pp.
- Nature Conservancy Council.- Visiting National Nature Reserves.- 1971, 4 pp.
- Nature Conservancy Council.- Beinn Eighe National Nature Reserve.- 1977, 12 pp.
- Nature Conservancy Council.- La conservación de la naturaleza en el Reino Unido.- 1978, 7 pp.
- Nature Conservancy Council.- A handbook for the preparation of management plans.- 1983, 93 pp.
- Nature Conservancy Council.- Beinn Eighe National nature reserve Glas Leitire nature trail.- 1985, 15 pp.

**APENDIX I. Previous recommendation included in Resolution (83) 7.  
26 May 1983**

1. The reforestation programme should be maintained through natural regeneration and planting and restricted to indigenous species, mainly Scots Pine, but with some other typical Western Highlands species (oak, birch, rowan, holly). Where planting is carried out, it should be done according to ecological conditions: irregular rather than regular stands, different ages of trees, which means that several small areas should be planted each year, rather than one large one. No planting should be done in important phyto-sociological sectors. Fertilisers should not be used.
2. Steps should be taken to ensure that the Scots Pine planting stock comes from seed produced in the reserve and a suitable seed stand delimited.
3. If possible, the nursery near the reserve should be re-established for this purpose.
4. The sectors which are too densely planted, in particular the Scots Pine plantation on the south side of the reserve, should be thinned so as to turn the area into a semi-natural woodland where natural succession can be studied.
5. An agreement should be sought between the Forestry Commission and the Nature Conservancy Council on the future of the stand of exotic conifers, based on regular thinning; reforestation with indigenous species, especially Scots Pine; the Nature Conservancy Council should take the area over as soon as the existing agreement expires.
6. The 23 ha of land bordering Loch Maree, which, although part of the reserve, are still in private ownership, should be acquired if possible.
7. Any invasion of the reserve by rhododendron should be prevented.
8. A large-scale vegetation map should be produced indicating the main phyto-sociological associations and their floristic species.
9. The population of red deer in the reserve should be reduced so as to limit the damage to young trees, and a study be made of the relationship between red deer and natural regeneration of the Scots Pine.
10. The new management plan should be completed as soon as possible.