

# COUNCIL OF EUROPE

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# CONSEIL DE L'EUROPE

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EUROPEAN COMMITTEE FOR THE CONSERVATION  
OF NATURE AND NATURAL RESOURCES

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MINSMERE NATURE RESERVE  
(United Kingdom)

Category A

ON-THE-SPOT APPRAISAL

by

C de KLEMM

## 1. Introduction

The Council of Europe Committee of Ministers awarded Minsmere Nature Reserve the European Diploma, category A, in 1978. The Diploma expires in 1984, under Article 4 of Resolution (73) 4 adopted by the Committee of Ministers on 19 January 1973, renewal is subject to an on-the-spot appraisal.

I was asked to carry out this appraisal by the Council of Europe Secretariat in a letter of 27 May 1982.

Mr Peter Baum of the Environment and Natural Resources Division of the Council of Europe accompanied me on my visit of inspection as Secretariat representative.

The site inspection took place on 28 and 29 June 1982, in the presence and with the help of Mr John Crudass, Chief Reserves Officer for the Royal Society for the Protection of Birds (RSPB) and Mr Jeremy Sorensen, Director of the reserve. I would like to thank them both for their help and co-operation throughout the site appraisal.

## 2. Site description

Minsmere Reserve is on the Suffolk coast, in south-east England on the North Sea. It covers an area of 607 hectares containing a very wide range of habitats: woodland (243 hectares), heathlands (162 hectares), reedbeds interspersed with small fresh-water pools (162 hectares), a large artificial lake with small islands (16 hectares) and a coastal dune region. It contains the estuary of a coastal river, the River Minsmere, which was dammed some 200 years ago and where three areas at risk of flooding were gradually brought under pasture. However, in 1940 the whole area was flooded to improve coastal defence and reeds grew back over the site, forming an ideal habitat for some species of waterfowl.

The great variety of habitats in the reserve results in a rich diversity of plant and wildlife, particularly birds. Plant life includes some species which have become fairly rare in England, such as the marsh sow-thistle (Sonchus palustris) and marsh orchids such as the southern marsh orchid (Dactylurhiza praetermissa) of which there is a large colony. In all more than 400 plant species have already been counted.

Birds are very numerous, particularly in wetland zones, and management measures have been taken to encourage breeding by all possible means. Of particular interest are the marsh harrier (Circus aeruginosus), which is now extremely rare in England (average of 2 couples at Minsmere), the Bittern (Botaurus stellaris), also extremely rare (between 7 and 12 nesting couples), the Bearded Tit (Panurus biarmicus), the population of which has increased spectacularly (about 80 nesting couples, but there are usually about 1,000 individuals in the reserve between September and November), the kingfisher (Alcedo atthis), avocet (Recurvirostra avosetta), another species which has also increased spectacularly in numbers (from 1 nesting couple in 1963 to about 60 in 1982), several terns including the sandwich tern (Sterna sandvicensis) and little tern (Sterna albifrons) and, further inland, the nightjar (Caprimulgus europaeus) (about a dozen couples) and the hen harrier (Circus cyaneus) which is a winter visitor (about 12 individuals). The reserve is well positioned on the migration route from northern Europe and large

numbers of small passeriformes pass through the reserve, particularly in autumn. In all 280 bird species have been identified in the reserve since 1948, including several accidental species of North American origin. Over 200 species are observed every year and there are more than 100 nesting species.

The main mammal species shrews, rodents and their predators stoat (Mustela erminea) and weasel (Mustela nivalis), large numbers of rabbits (Osyctolagus cuniculus), hares (Lepus capensis) and bats. Foxes (Vulpes vulpes) are scarce and otters (Lutra lutra) have disappeared. There are generally a small number of red deer (Cervus elaphus). Since 1970 red squirrels (Sciurus vulgaris) have been almost completely ousted by the introduced grey squirrels (Sciurus carolinensis). Other introduced species, the coypu (Myocastor coypus) and the American mink (Mustela vison), are fairly common.

Of the other vertebrates, vipers (Vipere berus), common lizards (Lacerta vivipara), slow-worms (Anguis fragilis) and toads (Bufo bufo) are common and frogs (Rana temporaria) are increasing. Since the Minsmere estuary is no longer linked to the sea it no longer provides a breeding or growing area for sea-fish. The fish on the reserve are therefore fresh-water or brine species: eels (Anguilla anguilla), rudd (Scardinius erythrophthalmus) and sticklebacks (Gasterosteus aculeatus and Pungitius pungitius). Invertebrates have not as yet been fully counted, with the exception of Lepidoptera which are numerous.

### 3. Legal status and land tenure

Since 1977 the whole of the reserve has been the property of the Royal Society for the Protection of Birds (RSPB). Previously it had been leased to the RSPB since 1949. It is therefore a private reserve. The entire reserve constitutes a Site of Special Scientific Interest (SSSI) of Category I, which gives the Nature Conservancy Council certain powers, particularly of compulsory purchase or expropriation if the site is threatened. The reserve has also been declared a bird sanctuary: this means that fines for offences against the legislation on protected birds committed inside the reserve may be multiplied by a factor of 5. The reserve is also part of an Area of Outstanding Natural Beauty (AONB) and the Suffolk Heritage Coast, which entails certain restrictions on building development not only within the reserve but in the surrounding areas. Finally, it is also included in the Ramsar Convention list of wetlands.

The reserve encloses an area belonging to a private owner; the RSPB would have first claim if this land were to be sold. Bordering the reserve to the north is a Nature Conservancy Council nature reserve of around 40 hectares, a National Trust reserve and land owned by the Forestry Commission which provides an effective buffer zone even though the forest is exploited economically. Eastward the Minsmere Reserve stretches as far as the publicly owned maritime zone. Access to the latter is obviously free, but since, as had been mentioned, the coastal area is subject to particular restrictions on development, there is no building along the beach and no coastal road. The RSPB has so far been unsuccessful in its attempts to acquire the land south and east of the reserve, mainly water meadows which are home to the black-tailed godwit (Limosa limosa) and ruff (Philomachus pugnax), both of which are very rare in England.

#### 4. Reserve management

A very comprehensive management plan has been worked out and should be adopted definitively this year. It divides the reserve into 58 units, each of which constitutes a specific habitat and has its own management plan. The main purpose of the reserve, in accordance with the RSPB Charter, is bird protection and thus the preservation and as far as possible the increase of bird populations in the reserve. To this end the RSPB makes extensive alterations to various habitats. Of course other animal and plant species are also taken into consideration. The reserve wardens are naturalists who protect everything which it may be important to protect. Nevertheless improvement of bird habitats remains the principle objective.

The reserve is therefore, at least to a large extent, an artificial area, not only in its very conception but also in its ecological management. The lake, known as the "Scrape", was excavated by bulldozer and the little islands scattered in it are also artificial. They are covered with plastic sheeting to prevent plant growth, then by a shallow layer of earth, and provide nesting sites for several bird species, particularly terns. Dykes divided the lake into 3 sections and incoming water is controlled by sluices which enable salinity to be regulated at optimum concentration for the development of the various species of aquatic invertebrates on which the birds feed. The growth of reeds and other plants is limited by use of the herbicide Dalapon. The same approach is adopted in the marshland area to prevent reeds choking the pools. Old filled-in ditches have been re-excavated mechanically, with the result that the water-level in the marsh has risen, to the benefit of the bitterns and some ducks.

The heathland is managed in such a way that it does not disappear as a result of natural succession. Young birch and pine are uprooted, the old heath is burnt and bracken (Pteridium aquilinum), a rapidly encroaching species, is eradicated by the specific herbicide Asulam which does not affect other plants. Nightjars (Caprimulgus europaeus) are encouraged to breed by selective clearance of small areas in the wooded zones. The growth of brambles (Rufus fruticosus), gorse (Ulex sp.) and hawthorn (Crataegus sp.) is encouraged since large numbers of birds nest in these thorny thickets. In the wooded areas the sycamore maple (Acer pseudoplatanus) is systematically eradicated, since this encroaching exotic species prevents the growth of bushy vegetation on the forest floor. Since natural regeneration of oak and other species is difficult, largely because of the high rabbit population, young oaks have been and will be planted, protected by fences or "sleeves". Overall, the main aim is to enhance habitat diversity to encourage the largest possible number of bird species. Consequently old and dead trees or stumps are usually preserved wherever they provide a habitat and nesting sites for such species as woodpeckers and willow tits (Parus montanus). Rhododendron (Rhododendron ponticum), another rapidly encroaching exotic species, is systematically eliminated and will in some places be replaced by holly (Ilex aquifolium). There are in the reserve plantations of exotic conifers, cluster pine (Pinus pinaster) larch (Larix decidua) and Douglas fir (Pseudotsuga mensiesii); there are no plants to remove them except where they prevent regeneration of native species which an attempt is being made to encourage, such as hazel (Corylus avellana) and yew (Taxus baccata).

The reserve is managed by the RSPB which employs a Director and four wardens, joined in the summer by several volunteer wardens. According to the Director the budget is sufficient to meet the reserve's needs.

The reserve is open to the public four days a week in summer and one or two days in winter depending on the month. No more than 400 visitors are accepted, with a maximum of 500 on peak days. All in all between 25,000 and 30,000 people visit the reserve every year. There is an information centre, paths for visitors and 10 observation hides including one tree-top hide in a wood. There are two other observation hides on the beach in the public area to which access is free at all times. Part of the beach was closed off during the breeding season to allow little terns (Sterna albifrons) to nest, since this species is unable to hatch if there is constant disturbance by visitors. Since the fence was erected in 1980 the number of nesting couples of this species has risen from less than 10 to 66 in 1982. On the whole, visitors seem well-disciplined and do not stray away from the paths. We saw no signs of litter or rubbish. Hunting is of course forbidden, as is camping.

#### 6. Possible threats

There are no plans for construction or other works inside or outside the reserve which might threaten it within the foreseeable future. The Sizewell nuclear power station, 2.5 km south of the reserve, does not seem to have any negative effects.

Water supply to the marshes and lake is not from the River Minsmere, which is too heavily polluted by nitrates, but from unpolluted streams and run-off from National Trust property adjacent to the reserve. This water is stored in the reservoir, which is simultaneously a reedbed, and is used for supplying the lake when the water level is low.

The only possible threats would appear to be fire and the introduction of exotic species. During periods of drought serious fires have repeatedly devastated parts of the reserve. A number of firebreaks have since been created. If necessary the reserve management can call on the fire brigades in neighbouring towns.

On the subject of exotic species and in addition to the conifers, sycamore maple and rhododendron referred to above, we should also mention the presence of 2 Californian species, a lupin (Lupinus arboreus) and a member of the Boraginaceae (Amsinckia intermedia). For the time being the management plan makes no provision for eradicating these two species and indeed this may not be necessary, since the lupin in particular seems to provide a valuable habitat for some birds.

The main problem with fauna is the very high rabbit population (properly speaking of course the rabbit is not an introduced species), which has harmful consequences for the natural regeneration of woody species but is useful in other ways since the rabbits keep the grass short in some areas and their burrows are used for nesting by such birds as shelduck (Tadorna tadorna), which are numerous at Minsmere. Consequently no attempt is made to eliminate rabbits, something which would in any case be difficult, but numbers are kept in check by snaring.

Coypu (Myocastor coypus), American mink (Mustela vison) and rats on the other hand are the object of systematic extermination campaigns. Lastly, it has not been possible to prevent the ousting of the European squirrel (Sciurus vulgaris) by the American grey squirrel (Sciurus carolinensis).

## 7. Conclusions

The Minsmere reserve is a perfect example of a reserve which exists almost entirely for one purpose, namely to protect birds and enable their numbers to increase. It is completely protected, has a full management plan and is run on firm scientific foundations. Its birdlife makes it of great biological importance at European level. It therefore seems wholly justified to renew the European Diploma already awarded.

## 8. Recommendations

When the Diploma was first awarded in 1979 no special conditions or recommendations were made.

The following recommendations are not conditions for the renewal of the Diploma, but simply suggestions of ways in which the management of the reserve could be further improved, possibly thereby allowing the reserve to play a regional role.

8.1 Herbicides are a useful management tool to control vegetation. One may nevertheless wonder whether more research should not be undertaken on their effects on other plant and animal species as well as on the ecosystem as a whole. The information which we obtained during our visit to the Purbeck heritage coast seems to indicate for example that Asulam may affect young shoots of several species of spermatophyta.

8.2 Preparation of a detailed catalogue of flora (something which so far has been done only for aquatic flora) and invertebrates on the reserve, identification of rare species and development of management measures to be taken in order to protect and encourage them.

8.3 Over the years the reserve has lost a number of nesting species, eg stone curlew (Burhinus oedicephalus) little owl (Athene noctua), wood lark (Lullula arborea), wheatear (Oenanthe oenanthe), whinchat (Saxicola rubetra), red-backed shrike (Lanius collurio) and corn bunting (Emberiza calandra). These losses, which are not restricted to the territory of the reserve but seem to have affected the whole of the country, are generally attributed to climatic changes. However they may also point to environmental deterioration. Studies of this, although difficult, should be attempted. An attempt might also be made to reintroduce these species experimentally.

8.4 Since the reserve is small, the young birds hatched on it are not always able to find a territory where they can nest in their turn, particularly in the case of large birds such as the marsh harrier (Circus aeruginosus) and bittern (Botaurus stellaris). They therefore have to leave the reserve and try to nest elsewhere. Since some of these species are rare in England it would be useful to determine to what extent the reserve acts as a centre for repopulation. At present nothing is known about what happens to birds hatched at Minsmere.

8.5 As mentioned above, the reserve is bounded to the north by a national nature reserve, a reserve belonging to the National Trust and Forestry Commission land. It is also part of an Area of Outstanding Natural Beauty (AONB) and the Suffolk Heritage Coast created by the Countryside Commission.

It might be useful to consider co-operation between the various authorities responsible for these areas (RSPB, Nature Conservancy Council, Forestry Commission, National Trust, Countryside Commission and the Suffolk County Council) with a view to co-ordinating conservation measures and policies for the region as a whole. No such co-operation currently exists.