## CHAPTER 2.2 EVALUATION OF FEATURES AND SITE POTENTIAL

### 2.2.1 Evaluation

In this section the evaluation of site features has largely been restricted to the SSSI; where relevant, the back-up-land has been mentioned specifically.

#### 2.2.1.1 Size

"Parsonage Down is the largest remaining area of floristically rich chalk grassland, on a level site in England, and is of considerable conservation interest on these grounds alone." T C E Wells 1970.

"Parsonage Down is one of the largest tracts of herb-rich chalk grassland left in Britain; one of the largest remnants of the open sheep-walk which covered most of the chalk of southern England until the present century. Several of the other NCR sites have larger acreages but comprise several disjunct areas grouped together as single sites. A large continuous area is very important in nature conservation. Many species need extensive areas to maintain viable populations, and large area increases the chances of recolonisation following local extinctions." R J Hornby 1979.

The Parsonage Down SSSI is 466 acres (188 ha) in extent and is the ninth largest chalk grassland NCR site. Of those NCR sites that have a similarly gentle topography only Porton Down (Wiltshire), Martin Down (Hampshire) and Mount Caburn (Sussex) are larger. Both Porton Down and Martin Down have very different vegetation types to Parsonage Down SSSI, as a result of light or no grazing. This is in strong contrast to the 60 year history of the present stable grazing regime at Parsonage Down SSSI.

Fragmentation within the SSSI is small, augmenting the effects of size. Of the three grazing units one is 326 acres (132 ha) (70% of the total area) and the other two are 68 acres (27 ha) and 64 acres (26 ha), being 14.5% and 13.7% of the SSSI respectively. The stability of the present grazing regime, particularly within the largest grazing unit, has produced a uniform sward, further reducing fragmentation and so enhancing habitat size.

Much of the NVC calcicolous grassland on the SSSI is intermediate between two Festuca - Avenula sub communities. Small areas of similar intermediates are likely to occur on many sites but may have their largest extent here.

#### 2.2.1.2 Diversity

The last 60 years of grazing, coupled with earlier patterns of land use history, has led to grassland occurring on nearly all of the SSSI. Other habitat types tend to be small, of more recent origin and of lower biological interest. As has been already mentioned there is little structural variation in the sward. The SSSI therefore is low in habitat and structural diversity; this is a positive attribute in relation to the size criterion.

Within the grassland habitat itself there is a high small-scale diversity of plant species. This plant diversity has been recognised as an important feature of the site. It is again the pattern of grazing which has to a large extent produced this plant diversity. Conversely, however, the short, even turf is a particularly stressful micro-habitat which few invertebrate species can withstand. The resultant invertebrate community is consequently poor in species, lacking amongst others the characteristic downland butterflies. Although not diverse this short turf invertebrate community represents a rare community type.

#### 2.2.1.3 Naturalness

Calcicolous grassland is a semi-natural habitat, that is, one which consists of native species but has been modified by the activities of man. It is probably derived from woodland and glade species occurring in the primary forests prior to prehistoric forest clearance by man. It is likely that both woodland and glade floras were grazed by wild herbivores, and past clearance, were maintained by domestic sotck. As the chalk uplands were one of the earliest areas to be cleared, this habitat is of great antiquity.

#### 2.2.1.4 Rarity

South and south-west chalk grassland is a less rare habitat under threat as defined in PPG-/83 (NCC 1983). See 2.1.2.1.

Much of the reserve is of the Succisa - Leucanthemum sub-community of the Festuca - Avenula calcicolous grassland. This sub-community is largely restricted to Wiltshire and Dorset.

The flora of the reserve includes five of 'nationally restricted species' (ie those occurring in 16-100 10 x 10 km squares. See 1.2.2.1). These species are Carex

humilis, Gentianella anglica, Senecio integrifolius, Orchis ustulata and Thesium humifusum. C. humilis, O. ustulata and T. humifusum occur in high numbers. O. ustulata is likely to have its highest populations in the country here. S. integrifolius is very sparsely distributed and G. anglica has suffered an apparent population decline since 1980.

As a whole, the invertebrate community of tightly grazed chalk swards is rare because Festuca - Avenula grassland itself is becoming increasingly scarce. The same applies to the species which make it up. The extreme microclimate in short chalk grassland requires more physiological and behavioural specialisation by the animals that inhabit it than in more structurally diverse grassland. Specialisation is usually a prerequisite of rarity (there are numerous examples to be derived from chalk grassland: Adonis blue, for instance), and although further investigation is required, it seems that tightly grazed grassland, as well as being intrinsically more rare as a habitat does indeed contain more rare species.

Examples already recorded at Parsonage, despite the relative paucity of survey information, include the spiders Alopecosa cuneata (Nb), Meioneta simplicitarsis (only reported as occurring in Britain in 1967) and Oxyptila simplex (with a very localised distribution); the flies Leptarthrus brevirostris (N) and Meonura minutissima (RDB3); the bugs Sehirus dubius (Nb) and Batracomorphus irroratus (localised distribution); and the beetle Apion varipes (Nb).

The presence of botanically rich calcicolous grassland on the gentle topography of the reserve, and the long running present grazing regime can be considered as two aspects of rarity. The chalk grassland habitat on gently sloping land is extremely fragile, being very easily ploughed. Its survival on the SSSI through periods of arable expansion culminating in the post war agricultural boom is remarkable, contributing greatly to its rarity value. Also remarkable is the survival of the 60 year old grazing regime. This has remained largely unchanged over much of the SSSI, despite the prewar agricultural depression and the postwar boom. The longevity of this regime must be very rare in both agricultural and conservation terms.

#### 2.2.1.5 Fragility

Chalk grassland is a fragile habitat and can be damaged in a number of ways.

Ploughing: Areas of calcicolous grassland on gently sloping land are very susceptible to cultivation and conversion to arable. While it is highly likely that almost all the reserve has been ploughed at some time in the past, modern conversion

to arable would allow little if any subsequent recovery. Historically spring corn was grown in the absence of artificial fertilisers and herbicides, only small areas were cultivated at any one time and then only for short periods of 3-5 years before being abandoned. Many refugia for chalk plants existed close by cultivated areas allowing recolonisation. Most areas on the reserve have had hundreds if not thousands of years without cultivation. In contrast modern cultivation would almost certainly convert all ploughable areas to winter corn which would be grown for decades with only very occasional breaks. Crops would be treated with high rates of fertiliser and herbicide. These techniques would destroy virtually all the chalk grassland plant material with no recolonisation possible should a return to pasture be made. The ploughing of improved grassland sold in 1980 and its conversion to winter corn is thought to have contributed to the loss of the breeding stone curlews from the reserve.

Understocking: The short turf community could easily be damaged by no grazing or undergrazing. Rank grasses would invade the turf at the expense of lower growing less competitive species. Subsequently scrub would establish in the long grassland and eventually the area would succeed to secondary woodland.

Overstocking: Overstocking, even for short periods, can seriously damage the sward. The turf is most sensitive during the winter months when poaching can occur and frost can damage grass grazed too short. Swards opened up by poaching are very susceptible to weed invasion, particularly thistles, and may lead to management problems. As Parsonage Down is managed as a short turf grassland, the danger of overgrazing is a real one. Management is geared to prevent this by having back-up land available on to which stock can be moved when necessary. As most of the reserve is gently sloping it is less susceptible to poaching. Localised poaching is unavoidably associated with water troughs, gateways and fencelines.

Changes in the grazing regime: Subtle changes in the grazing regime can have effects on individual species. The changes in grazing on Parsonage Bank following the 1980 re-sale of land is likely to have caused the decline in Gentianella anglica on the bank.

**2.2.1.6 Typicalness**

Parsonage Down SSSI shares certain similarities with other chalk grassland areas and can be described as a 'typical chalk grassland' site. However, the variation between sites is often large. Parsonage Down differs from other sites, in that it is a species-rich, regularly grazed site on gently sloping land. This is in contrast

to other gently sloping sites, which for the most part have been lightly grazed (Martin Down NNR), rabbit grazed (Porton Down), or ungrazed (Salisbury Plain), the latter having a lower, small scale species richness. It is possible that Parsonage Down SSSI is representative of a much larger area of flatter chalk grassland now under the plough.

**2.2.1.7 Recorded History**

The recorded scientific history of the site is poor. Not only has it only been recognised relatively recently but it has received little subsequent scientific input. There is, however, a detailed knowledge of the land use history and farming system over the last 60 years, which adds considerable value to the site. There appears to be a reasonable amount of archaeological information and historical documentation which has only partially been investigated.

**2.2.1.8 Position in an Ecological Geographical Unit**

The NNR is almost completely surrounded by arable, and is in effect an isolated island of permanent pasture. The botanically rich SSSI does adjoin some improved pasture both on and off the reserve and with changes in the agricultural industry this will probably increase in proportion. A small area of the ungrazed core of the Salisbury Plain Training Area joins the reserve at Castle Scrub (compt 1a) but is itself species-poor. The area of SPTA will increase as the MOD has bought some adjacent farmland. The nearest botanically rich sites are Yarnbury Castle (1 km) and Steeple Langford and Cow Down (3.5 km).

Considering the poor colonising abilities of the majority of chalk grassland plants and the hostility of intervening habitats, the potential for immigration or emigration between sites must be extremely low. It appears to be low within the site itself. The potential for invertebrates to migrate must be greater but most are also poor colonisers. Most of the other birds and animals have a high mobility. It is felt by the RSPB that stone curlews could refind the site should breeding habitat become available. Certain species, such as partridges and hares, appear to use both arable and permanent pasture at different times of year.

**2.2.1.9 Potential Value**

i) Reversion to calcicolous grassland: There is a potential for chalk grassland species to recolonise younger swards particularly the new downland (compts 3 and 4). However, recolonisation has been slow

coupled with the rare breeds and the management continuity have generated considerable public interest. This was reflected in the enormous response to 1986 national radio coverage. Parsonage Down NNR has been termed an NCC "showpiece".

### 2.2.2 Identification of Important Features

The most important feature of the site is the large area of botanically rich chalk grassland. This has a number of features making it of national importance. It occurs on level and gently sloping land which is a very rare feature. It has been managed for the past 60 years under a stable and coninuing management regime, which has produced a short structurally uniform turf, in addition the majority occurs in one grazing unit and is therefore unfragmented. Deeper soils retained by flat land coupled with even cattle grazing have produced a large area of grassland with a mesotrophic element, a feature found, only to a limited extent on other sites. It has, almost certainly, the largest population of the nationally restricted burnt-tip orchid (Orchis ustulata) in the country.

The short turf invertebrate community is of a rare type. An important feature is that the details of the last 60 years of management are well known and that this management system is continuing inhand, the reserve being NCC's only operational farm. The high biological interest combined with the site being an agricultural unit identified its value for demonstrating low intensity farming, with wildlife benefit and conservation management. The site also has an important research potential.

**Table 2.2.2.a, Evaluation of Important Features**

| FEATURE | STATUS | | |
|---|---|---|---|
| | **National** | **Regional** | **Local** |
| VEGETATION | | | |
| Large area of chalk grassland on level site being unfragmented and structurally uniform. | * | | |
| Succisa - Leucanthemum and Holcus - Trifolium sub communities of Festuca - Avenula grassland. | * | | |
| | | | * |
| Hawthorn/gorse scrub. | | | * |
| Dewpond | | | |
| VASCULAR PLANTS | | | |
| Carex humilis, Gentianella anglica | * Na | | |
| Senecio integrifolius, Orchis ustulata | * Nb | | |
| Thesium humifusum | * Nb | | |
| Cuscuta epithymum | | * | |
| INVERTEBRATE COMMUNITIES | | | |
| Unusual community of short turf | * | | |
| INVERTEBRATES | | | |
| Sehirus dubius (Hemip) | * Nb | | |
| Batracomorphus irroratus (Hemip) | | * | |
| Meonura minutissima (Dip) | * RDB3 | | |
| Meioneta simplicitarsis (Araneae) | | * | |
| Oxyptila simplex (Araneae) | | * | |
| ARCHAEOLOGY | | | |
| 2 Scheduled Ancient Monuments | * | | |
| 2(3) County sites (awaiting evaluation) | | | |
| LANDUSE HISTORY | | | |
| Well recorded and continuing 60 year old farming system | * | | |

| Feature | Present Status | Lower Limit | Upper Limit | Trend | Main Factors & controlling trend | Significant Considerations |
|---|---|---|---|---|---|---|
| CG2 grassland | 140 ha | as present | 178 ha | Static (increase?) | recolonisation of chalk grassland species | change grazing regime in compts 3+4 |
| MG5 grassland | 38 ha | zero | as present | static (decrease?) | recolonisation of chalk grassland species | change in grazing, possible loss of 2-5 ha to stone curlew management |
| MG6 grassland | C 10 ha | zero | as present | static | concentration of stock | winter poaching, scrub development, siting of licks |
| Improved grassland | 84 ha | 80 ha | as present | decrease | planting of hedges, scrub, plantations | too much decrease will reduce profitability |
| Long grassland | 1 ha | as present | 2.5 ha | increase | fencing small areas to encourage habitat | No significant reduction in botanically rich or improved grassland desirable |
| Scrub | 2 ha | as present | 4 ha | static (increase) | natural regeneration | |
| Broadleaved plantation and hedges | 4 ha | as present | 6 ha | increase | planting | |
| Dew ponds | 1 | 1 | 2 | increase | planned renovation on 2nd old dew pond on the reserve | fragmentation of old down-land, poaching at fence-lines |
| Stone Curlew breeding habitat | 0 ha | 0 ha | 5 ha | static | decision to attempt re-establishment | likelihood of success compatibility with present system |

### 2.2.5 Ideal Management Objectives

1. a) Maintain the large unfragmented area of uniformly structured botanically rich calcicolous grassland and the associated plant and animal species.

   b) Maintain all rare and nationally restricted animal and plant species.

   c) Maintain existing secondary habitats within the reserve (scrub, dew pond, woodland, hedges, long grass).

2. a) Encourage the reversion of the mesotrophic grassland to more species-rich calcicolous types.

   b) Develop further secondary wildlife habitats on the reserve (long grass, woodland, hedges, scrub-belts).

   c) Re-establish breeding populations of rare and restricted species once occurring on the reserve eg stone curlew and Adonis blue butterfly.

3. a) Provide facilities for the demonstration of the compatability between conservation and low input - low output agriculture, to all interested parties.

   b) Provide facilities for research into the ecological, agricultural, archaeological and historic aspects of the reserve.

   c) Provide facilities for public enjoyment of the downland flora and the rare breeds.