

1.2.4 Ecological Relationships: Implications for Management

- i) Stock Grazing The maintenance of the botanically rich grassland is largely the result of a history of stock grazing running into thousands of years. For the last 60 years the grazing pattern on the majority of the grassland has remained remarkably steady, being grazed all year by cattle and sheep at stable stocking rates. This pattern of grazing has in turn produced a short remarkably uniformly structured herb-rich turf suiting some rare and restricted plant species. Likewise the structure of the turf and its constituent plant species, has shaped the short turf invertebrate community which itself contains rare species.

The maintenance of the biological features is therefore dependent on the continuity of this particular, long running grazing pattern. Maintaining the grazing regime forms the core of management work on the reserve and is the *raison d'être* of the non-SSSI parts of the reserve.

- ii) Climate The condition of both sward and stock is markedly affected by the vagaries of weather, unseasonal weather at any time of year affecting these. Often repeated weather patterns are cold and/or dry springs, and dry summers which limit grass and hay growth and hence limit grazing and winter fodder production. Severe winter weather is unlikely to directly damage the sward, except if it is overgrazed, when frost may lift the turf. Damage will probably not be permanent but may affect the following season's growth. Severe winter weather will however directly affect stock and they may lose condition. Outdoor lambing in severe weather is difficult as is maintaining water supply to the troughs. Removal of stock from the SSSI to the back-up-land and if necessary subsequently selling them, is the main method of preventing sward damage and loss of stock condition. Action is needed in anticipation of a problem and not when it materializes. The reserve is exposed to wind, and can be cold at any time of year.
- iii) Past Cultivation The wartime ploughing of the new downland (Hundred Acres, Parsonage Down) has had a marked effect on the vegetation here. It contains, at high frequency, herbs and grasses present in both calcicolous and mesotrophic grasslands (ie Lotus corniculatus, Briza media, Trisetum flavescens, Cirsium acaule), but the more characteristic species of the chalk flora are very rare or absent here. It is currently considered that the present hard grazing is responsible for the lack of recolonisation

and some relaxation of this may be beneficial.

- iv) Topography The gentle topography of the reserve has been a major factor in shaping the development of both biological interest of the reserve and its land use history. The gentle slopes allowed the retention of deeper soils following woodland clearance than did steeper slopes. These deeper more nutrient rich soils subsequently developed a subtly different vegetation. The gentle slopes were easy to cultivate and most areas were ploughed at some time, although the majority has not been cultivated for many centuries. In recent years a high proportion of cattle grazing has been possible due to the gentle, less easily poached land, which in itself has also had an effect on the vegetation. The topography allows management options not available on a steeper site.
- v) Basic Slag The application of basic slag from the late 1940s to 1974 was one operation possible due to topography. Its affect on the sward has not be fully ascertained, but it may have contributed along with deeper soils and cattle grazing to the more mesotrophic swards. It could be possible to evaluate its effect by a closer look at the vegetation of treated and untreated areas.