

## WOOLLY WILLOW ACTION PLAN

### SPECIES PROFILE

**Common Name:** Woolly willow.

**Scientific Name:** *Salix lanata*.

**UK Biodiversity Status:** Priority species.

**Relevant Priority Habitats:** Montane.

**Statutory Protection:** Under the Wildlife and Countryside Act (1981) and as a component of sub arctic willow scrub, an EC Habitats and Species Directive Annex 1 Habitat – Natural habitat types of community interest whose conservation requires the designation of special areas of conservation.

### BIODIVERSITY CONTEXT

This species is restricted to Arctic and sub-Arctic Eurasia and in the UK is confined to Scotland. It forms high altitude scrub above the tree line with other willow species. Mountain willow scrub is the highest altitude vegetation dominated by tall shrubs and is one of the rarest communities in Britain (Sullivan 1997). In Britain this habitat is only present as relict scattered bushes due to historical and current high levels of grazing.

It now occurs in only 13 locations in Scotland, all but one of these populations are very small (less than 100 plants) and four are of single individuals, hence are unable to reproduce. At least two recorded populations have died out since 1950.

There is a UK Action Plan for this species. Its main objectives are:

1. Ensure all 1997 populations are successfully regenerating by 2003.
2. Ensure that each population will consist of at least 50 plants by 2008.
3. Reintroduce the species to two former sites by 2003.

### OBJECTIVES

**Objective 1 Maintain the existing population and long term future of woolly willow in the Stirling Council Area.**

Target By 2004, identify suitable sites for woolly willow establishment.

Target By 2010, maximise the regeneration and population size of the single site within the Stirling Council Area.

### CURRENT STATUS AND DISTRIBUTION

Woolly willow is the rarest of the six species of willow found in the mountains. There are 13 populations of woolly willow all found in Scotland. It is found at one site in the Stirling Council Area, on Meall na Samhna. Here there is an extensive population between 700 and 720 metres, with a 1:5 male to female ratio (Crook 2000). A survey in

the summer of 2000 by Crook found a population of 77 individuals, including 10 young plants.

## CULTURE, ETYMOLOGY AND FOLKLORE

Willow comes from the Old English *welig*, related to Old Saxon *wilgia* and Greek *helike* possibly from the Latin *helix* meaning twisted.

*Salix* is the Latin for Willow and *lanata* is Latin for woolly.

The Gaelic for willow is *seileach*. Found in place names such as Sallochy (field of the willow). The Scots for willow is *sauch* found in place names such as Sauchie and Sauchiehall Street.

## ECOLOGY AND MANAGEMENT

A review of all montane scrub communities by Hester (1995) concluded that we lack the knowledge to develop appropriate management strategies. Although restricted to locations with base-rich soils at high altitudes, the potential extent of populations is limited by browsing pressure from sheep and deer. There is evidence that browsing animals select male rather than female plants (Hester 1997). There is concern about the existence of hybrids with other willow species in the natural populations and particularly about the danger of using hybrids in reintroduction programmes. As the male and female flowers are on separate plants cross-fertilisation depends on individuals of both sexes occurring within a distance which can be covered by pollinating insects before pollen is rubbed off, or in the case of bees, returned to the hive (Horsfield and Thompson 1997). Marriot (1997) suggests that the critical distance between male and female plants of woolly willow is 50 metres if bees are to transport pollen. Successful seedling establishment requires bare ground with little or no competition from other plants. Such conditions are most often found on open slopes where current grazing prevents seedling establishment.

Marriot (1997) has summarised the probable requirements for a “viable population” as:

1. Male and female plants within 50 metres of each other.
2. Bare ground for seedling establishment.
3. Absence of grazing.
4. Good snow cover but low risk of ice plucking or avalanche.
5. Relatively cool/damp soil conditions.
6. A minimum number of plants to produce sufficient “seed rain” to colonise bare ground at rates equal to loss of mature plants.

Little is known about the invertebrate fauna associated with mountain willows (Bland, Entwistle and Horsfield 1997).

## CURRENT FACTORS CAUSING LOSS OR DECLINE AND FUTURE THREATS

- Grazing by red deer *Cervus elaphus* and sheep *Ovis domesticus*.

- Vulnerability to being dislodged by rockfall, slope instability, avalanche or ice plucking.
- Sex imbalance can reduce the potential for natural regeneration.
- Climate change, leading to a reduction in the area of suitable growing conditions.

## OPPORTUNITIES AND CURRENT ACTION

- Even if grazing was greatly reduced the maximum potential coverage of woolly willow would be less than 1% of the area above the potential tree line in Scotland due to its particular soil requirements (Sydes 1997).
- A Meall na Samhna. Crook (2000) recorded 77 individuals and 60% of female flowers had set seed. The 1994 population was 82 individuals. There is some evidence of hybridisation at the site. The total extent of suitable habitat and soils was 110m<sup>2</sup>, but the total extent of suitable ungrazed habitat was 54m<sup>2</sup>. The total extent of bare areas suitable for seed regeneration was 11m<sup>2</sup>. Any spread of the colony would require reduced grazing pressure. Any attempt to fence off part of the site would be difficult because of local topography.

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