4.9 Downy Willow

4.9.1 Current Status

Downy willow (*Salix lapponum*) is a UK Biodiversity Action Plan priority species and is one of the willow species associated with montane scrub habitat, a rare resource within the Galloway Hills and the Biosphere. Although it is one of the more common montane willow scrub species due to its ability to grow on acidic soils, it is now extremely rare in the Southern Uplands being found only in Galloway and in a small part of the Moffat hills. It is thought to have been part of a considerably more extensive habitat that once cloaked the Galloway Hills.

4.9.2 Ecology and Habitat Requirements

Downy willow is small a dioecious species, with individual plants being either male or female, growing to at most 1m. Willow seeds are extremely short-lived and require the presence of suitable micro-conditions for successful establishment. This includes bare ground and mobile scree where seedling establishment lacks competition. Downy willow also spreads vegetatively and can persist.

Downy willow and other montane willow species are susceptible to grazing pressure and therefore the existing stands are limited to locations that are less accessible for grazing animals, such as on steep crags and rocky ledges. Individual plants can survive many years under grazing and will respond favourably to relief from grazing. Downy willow and other montane willow species are also susceptible to wildfire so are also usually limited to areas fire has not reached

4.9.3 Concerns

- Grazing pressure from wild herbivores and livestock.
- Damage caused by wildfires.
- As the population is small, population viability is reduced due to the limited ability to produce viable seed.
- The risk of random events, such fire and rockfalls, can lead to the loss of individuals which is significant in a small population.

4.9.4 Conservation Objectives

As with juniper, the conservation objective for downy willow in the Biosphere is to maintain existing stands and increase its extent in appropriate areas to make the population more viable and less vulnerable to events such as wildfire or outbreaks of disease.

4.9.5 Management

Downy willow should benefit from management measures recommended for the montane habitats, described in Section 2.4. In addition, it requires specific management to safeguard and enhance the long term viability of the population in the Biosphere:

- Adjustment of grazing pressure to levels recommended for montane habitats.
- Establishment of stock-proof enclosures to remove threats from grazing.
- Reintroduction of downy willow from local stock to appropriate areas protected from grazing.

4.9.6 Example Projects

- The Forestry Commission Scotland (FCS) willow project is successfully speeding up the process of establishing local willow species in the designated woodland fringe areas, increasing the coverage of locally rare montane scrub habitat. As part of the project, willow cuttings have been collected from remnant populations and grown on in local nurseries to create "stock beds" at low elevations. These bushes are then multiplied through vegetative propagation and the resultant small trees planted out within woodland fringe and montane woodland sites. FCS's initiative to restore montane willow scrub is underway in the Biosphere Core and Buffer area in numerous locations, including the large (275ha) exclosure under the summit of Bennan to the south of Merrick, as part of the Native Woodland Fringe project.

- FCS Woodland fringe monitoring project: see Section 4.8.4 for further details.

- FCS Deer and wild goat monitoring and control project - see Section 4.8.4 for further detail.

4.9.7 Opportunities

- Creation of montane woodland habitat networks will greatly extend the occurrence of this species, with other components of the montane scrub flora, and hence improve resilience to random losses.
- Conditions suitable for downy willow will suit other montane willow species including creeping willow (*Salix herbacea*) which is also present at higher levels in the area.

4.9.8 Further Information

Online Atlas of British and Irish Flora Species Account:
http://www.brc.ac.uk/plantatlas/index.php?q=node/4054