

NPWS

**River Slaney Valley SAC (site code 781)
Conservation objectives supporting document-
woodland habitats**

Version 1

August 2011

Introduction

The Slaney river system rises in the Wicklow Mountains and Mount Leinster range and flows predominantly through undulating lowlands apart from a short section which cuts through the mountains. The underlying bedrock of granite, slates and shales produce relatively well-drained soils favourable for cultivation and the catchment includes a considerable amount of arable land as well as pasture. In the valley bottom drainage is locally impeded and subject to flooding. There is relatively little woodland within the SAC, being mostly confined to steeper slopes and localised areas of impeded drainage.

In the upper reaches above Tullow the rivers are tree-lined with mostly small patches of woodland. Between Tullow and Bunclody the river is incised and the steep valley sides are wooded. South of Bunclody the valley broadens out and the valley floor is intensively cultivated or under pasture, although there is some woodland on the tributary valley sides. South of Enniscorthy, where the river is subject to tidal influence, there are scattered stands of low willow and alder scrub associated with reed beds.

Woodland types

This SAC has been selected for two native woodland types listed in Annex I of the Habitats Directive:

91A0 Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles

91EO Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*)

Native ash (*Fraxinus excelsior*) woodland also occurs, as do stands of mixed deciduous woodland and a few small conifer plantations.

Alluvial woodland is a generic term for a number of different woodlands but the principal community within the SAC is alder-meadowsweet woodland, which occurs as small narrow strips at the bottom of slopes on the valley floor. Soils are well-drained brown earths or gleys (locally peats) with a pH between 5.2 and 6.5, but all are subject to flooding. Alder (*Alnus glutinosa*) and willow (*Salix cinerea*) are the main tree species with some ash, birch (*Betula* spp.) and pedunculate oak (*Quercus robur*). The herb flora consists mainly of meadowsweet (*Filipendula ulmaria*), water dropwort (*Oenanthe crocata*), iris (*Iris pseudocarus*) and sedges (e.g. *Carex remota*, *C. paniculata*). Gallery forest, formed by the taller tree willows, e.g. *Salix alba*, *S. viminalis*, characteristic of some valleys in the south of the country, is notable by its absence.

Old Oak woodland within the SAC occurs on brown earths or podsols, pH 3.8 – 4.9, mostly on the valley sides. The stands are considerably larger than the alluvial woodlands and occur principally in the upper reaches of the catchment, mainly on the incised section and along the Derry Water but also along some of the tributaries of the lower reaches. The principal community is the bramble-hazel sub-type, which is associated with more fertile but still relatively nutrient poor, acidic soils. The woodrush (*Luzula sylvatica*) and bilberry (*Vaccinium myrtillus*) sub-types occur locally. The vegetation is typical with an oak (*Quercus petraea*, *Q. robur* and the hybrid) canopy, shrub layer of

holly (*Ilex aquifolium*) and ground flora with ferns (e.g, hard fern (*Blechnum spicant*) and broad buckler-fern, (*Dryopteris dilatata*)), bramble (*Rubus fruticosus*), bluebell (*Hyacinthoides non-scripta*), bracken (*Pteridium aquilinum*) and locally woodrush and bilberry.

Area

The total area of native woodland within the SAC is unknown but is relatively small. Of the 23 sites surveyed old oak woodland occurs in ten sites and covers c.146ha and seven alluvial woodlands cover c.19ha (see appendix 1). Of the oak woodlands the average area is c.16 ha, although this figure is somewhat distorted by two large sites - one of 65ha and another of 28ha. The alluvial woodlands are small, averaging <3ha.

Ash and mixed woodlands provide additional woodland cover but the areas are small and there is a distinct lack of continuity of woodland.

Conservation objectives should be to increase native woodland size to 3ha for small woods and 25ha for large woods, based on the recommendations of Peterken (1993), and to aim for increased continuity of woodland cover. However, the topography and surrounding land use may mitigate against these objectives.

Ancient woodland

12 sites within the SAC are recorded as having been present in part or full on the 1st edition OS maps (1840s), eight of which are annexed habitat (Perrin and Daly, 2010). Only one such site is alluvial woodland. These may be considered as potentially ancient or long-established woodlands.

Structure and functions.

Alluvial woodland

The alluvial woodland stands average c.12m in height but are locally up to 18m. In some woods there is a sub-canopy of the same species and locally a low shrub layer of willow, ash and oak. The trees are mostly between 10-20cm dbh but a few specimens are considerably larger, e.g. alder 35cm, birch 39cm.

Oak woodland

Typical oak woodland within the SAC consists of high forest with a canopy dominated by oak averaging c.20m tall but up to 30m, with a little beech (*Fagus sylvatica*), a sub-canopy of oak and birch and a shrub layer of holly and locally hazel (*Corylus avellana*) and hawthorn (*Crataegus monogyna*). On poorer sites the dwarf shrub bilberry is present but more typically there is a field layer of ivy (*Hedera helix*), bramble, woodrush, ferns (e.g. hard fern, broad buckler-fern) and sometimes bluebell. The trees display a wide range of size classes; some sites appear to have been coppiced relatively recently with most stems < 20cm but other sites contain stands of old, large trees (dbh >40cm). Regeneration is absent or poor and consists mostly of holly and birch: this is probably a function of age and structure.

Dead wood

The amount of dead wood varies depending on age structure and management. Woodlands with older trees naturally tend to have more dead and dying branches and consequently more coarse woody debris, although the amount will depend on management, which will vary with the landowner and factors such as accessibility, theft, etc. Estimates of dead wood within the SAC indicate a low cover – mostly >4%. Guidelines as to the amount that is desirable vary according to sources (e.g. Cavalli and Mason (2003)). It is recommended that there should be at least 30m³/ha of fallen timber greater than 10cm diameter and 30 snags/ha, both categories to include stems greater than 40cm dbh.

Veteran trees

Mature and veteran trees are important habitat for bryophytes, lichens, saproxylic organisms and some bird species. Their retention within a woodland is important to ensure continuity of habitats/niches and propagule sources over time. Veteran alien trees can be left but regeneration will have to be controlled. Within the SAC a few very large trees were recorded, e.g. oak >1m dbh, birch dbh 39cm.

Species composition

Details of the characteristic and site-specific species composition can be found in Perrin *et al* (2008). The average number of species per 20x20m relevé per woodland type are as follows:

- Alder-meadowsweet: vascular plants 26, bryophytes 11
- Oak: vascular plants 18, bryophytes 11

As these figures show the alder woodlands are the richest in species and oak woodlands the poorest, although the figures do not take account of epiphytes.

Future Prospects

Hydrology

Periodic flooding is essential for the maintenance of alluvial woodland. The Slaney system has not been subject to arterial drainage and remains hydrologically relatively natural so that the alluvial woodlands are not under threat from this source.

Invasive alien species

Invasive alien species include beech – mostly in drier sites; sycamore (*Acer pseudoplatanus*) – mostly in moister sites; and the shrubs laurel (*Prunus laurocerasus*) and rhododendron (*Rhododendron ponticum*). Himalayan balsam (*Impatiens glandulifera*) occurs in the catchment and is a potential threat to the alluvial woodlands. A reduction in the area covered by non-native tree species is required with a corresponding increase in the area of native trees and shrubs.

Grazing

Grazing animals are a normal part of a woodland ecosystem and appropriate grazing pressure is beneficial, promoting biodiversity. Where grazing pressure is too high it can damage the herb layer and prevent regeneration; where too low it allows vigorous species to dominate the herb layer, reducing biodiversity and sometimes preventing regeneration. The most common grazers are deer, sheep – principally on unenclosed uplands, and cattle – mostly on enclosed lowlands.

Alluvial woodlands within the SAC are subject to only light grazing pressure largely from cattle. Some oak woods are heavily grazed by cattle and deer are also present, although at the time of the surveys (mostly in 2003) were at low densities. However, with their ever increasing population it is probably only a matter of time before overgrazing becomes a more general problem.

Forest Management

The woodland stands may be in private or State ownership. Of the latter, most are managed by Coillte. Most sites would have potential for timber production although some may have been neglected or are only occasionally 'picked over' for timber.

Conservation and timber production are not mutually exclusive. The principal constraint is that clear-felling is undesirable. Ideally, continuous canopy forestry should be practised but coupe felling or, if the tradition exists, coppicing, are acceptable and may be required for maintaining populations of certain species. Timber production is more likely on drier soils, particularly within the oak woodlands, and some very wet sites may not be managed at all or subject only to occasional removal of firewood.

Impact of Agriculture

Threats from agriculture may be direct or indirect. The principal direct threat is clearance and uprooting resulting in destruction of the woodland. Indirect threats include fertiliser drift, which may increase the trophic status of the wood leading to the stronger growth of nitrophilous species and loss of less vigorous species, and herbicide drift, which may kill vegetation on the woodland edge. Given the intensive agriculture within much of the SAC these indirect impacts may be considerable.

Urban and infrastructural development

These are a threat principally around towns. Alluvial woodland is more likely to be damaged by infilling, although new planning legislation will hopefully make this less of a threat. Infrastructural development is likely to be localised and restricted in its impact but if it interferes with drainage it may negatively affect alluvial woodlands.

References

Cavalli, R. and Mason, F. (Eds) (2003) Techniques for re-establishment of dead wood for saproxylic fauna conservation. National Centre for the Study and Conservation of Forest Biodiversity. Verona - Bosco della Fontana

Peterken, G. (1993) Woodland conservation and management. Chapman and Hall. London.

Perrin, P., Martin, J., Barron, S., O'Neill, F., McNutt, K. & Delaney, A. (2008) National Survey of Native Woodlands 2003 – 2008. A report submitted to the National Parks & Wildlife Service. Botanical, Environmental & Conservation Consultants Ltd. Dublin.

Perrin, P.M. & Daly, O.H. (2010) A provisional inventory of ancient and long-established woodland in Ireland. Irish Wildlife Manuals, No. 46. National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin, Ireland.

John Cross

09 August 2011

Appendix 1

Sites included in the National Survey of Native Woodlands (Perrin et al., 2008), which contain Annex I woodland habitats and are entirely or partly within the Slaney River Valley SAC (781)

91EO Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*)

NSNW Site Code	County	Area (ha) within SAC
1	Wexford	1.23
157	Carlow	4.08
208	Wexford	2.86
209	Wexford	2.41
211	Wexford	2.97
875	Wicklow	4.97
988	Wicklow	0.18
	Total	18.7

91A0 Old sessile oak woods with *Ilex* and *Blechnum* in British Isles

NSNW Site Code	County	Area (ha) within SAC
1	Wexford	4.86
8	Carlow	4.62
26	Carlow	26.89
158	Carlow	7.97
172	Wexford	2.19
180	Wexford	6.64
210	Wexford	2.37
310	Carlow	24.74
749	Wicklow	63.64
988	Wicklow	2.24
	Total	146.16