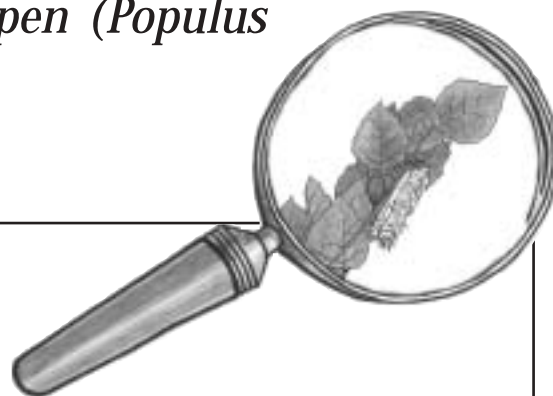


# WOODLAND SPECIES *Aspen (Populus tremula)*

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## Species Action Plan

### SPECIES PROFILE

UK Biodiversity Status:	None.
UK Lead Partners:	None.
Associated UK Priority Species:	A hoverfly ( <i>Hammerschmidia ferruginea</i> ), a leaf rolling weevil ( <i>Byctiscus populi</i> ), dark-bordered beauty moth ( <i>Epione vespertaria</i> ), and 2 bristle mosses ( <i>Orthotrichum gymnostomum</i> & <i>O. obtusifolium</i> ).
South Lanarkshire Status:	Local priority species.
Relevant Habitat Action Plans:	Broadleaved & mixed woodland.
Statutory Protection:	General protection under Wildlife & Countryside Act 1981, making it an offence to intentionally uproot the plant without the landowner's consent.

## MAIN OBJECTIVES

- 1. To determine the current status and distribution of aspen throughout South Lanarkshire, mapping the location of aspen stands.**
- 2. Implement appropriate management to protect existing aspen stands, in some cases individual trees, to encourage natural regeneration and prevent further loss of trees.**
- 3. Restore populations of aspen, in continuous stands, as part of the Clyde Valley Forest Habitat Network programme and encourage a higher proportion of aspen in new woodland planting across South Lanarkshire.**
- 4. Develop a seedling bank of aspen taken from local provenance trees, using as wide a genetic mix as possible (seeds, if available, ramets or suckers) for use in woodland planting or to reinforce existing stands.**

## WOODLAND SPECIES *Aspen (Populus tremula)*

### CURRENT STATUS AND DISTRIBUTION

Aspen is Scotland's only native poplar species and is widely distributed across Scotland but is only found in large numbers in north-east Scotland. Aspen can be found all across the northern temperate zone from Scandinavia to North Africa, and from the UK to Japan. Aspen is associated with well-drained, moist, mineral soils and was a very early post-glacial colonist forming the first woodlands after the Ice-age alongside birch, rowan, hazel and willow. Nevertheless, the species can tolerate a wide range of soil types and grows from sea level up to or just beyond 550m in sheltered locations.

It is now an under-represented component of natural woodland types in Scotland but has a strong association with ancient woodlands suggesting that it could be an ancient woodland indicator species. Scandinavian ecologists view aspen as a keystone component in the preservation of biodiversity in northern boreal forests, where it is found in greater numbers. In Scotland, aspen is usually found standing alone or in small groups and pure woodland stands of aspen are extremely rare. Only in Badenoch and Strathspey is the species locally abundant and can pure aspen woodland stands be found. It is estimated that only 160ha of aspen woodland remain today in Scotland, with just 25ha protected by a statutory designation.

Records for aspen are few and far between with only a limited number of trees recorded for the county. The scarcity of records may well be linked to a lack of recording of the species. Recent surveys of ancient, semi-natural and SSSI woodland as part of the EU LIFE and HLF woodland funded projects record aspen as extremely rare in South Lanarkshire, usually as the occasional stand or individual along a watercourse or as a small canopy component within ash and sycamore dominated woodland.

### STATUS AND ECOLOGY

Aspen can grow to nearly 20m but most individual trees in Scotland only reach 10m. It has a grey or greenish-grey bark that is either smooth or pitted with diamond-shaped lenticels, and its form has a distinctive branching pattern. Leaves are small and round in shape with irregular blunt teeth on their margins. Aspen is one of the last trees to come into leaf, having a distinctive coppery coloured leaf when they first open, before turning green. In the autumn, the leaves turn a brilliant yellow or more rarely red in some individuals. The leaves make a characteristic fluttering sound when stirred by the wind.

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Aspen is dioecious, so individual trees can be either male or female, and trees flower in March or April before the leaves appear, with both sexes producing catkins. Pollinated female catkins ripen in summer and release tiny seeds. For some reason, as yet not fully understood, seed production is rare in Scotland. Aspen is a short-lived species with few individuals surviving beyond 100 years, partly because its soft, white wood is not resistant to rot fungi.

However, aspen's main method of reproduction is vegetative and it can be very prolific at producing a mass of suckers or ramets growing off the roots of mature trees. As aspen has a very extensive root system, ramets can be found up to 40m from the parent tree and grow very quickly. In addition, aspen roots can stay alive underground for many years following the death of the parent tree leading to the sudden appearance of new ramets when there is no evidence of the dead parent tree. These ramets are exact clones of the parent tree, flowering and coming into leaf at the same time and have the same appearance as the parent tree.

Aspen is not recognised under the NVC system as a distinct woodland type although it can be a component of upland ashwoods or more infrequently some lowland woodland types. Historically, aspen may have been a much more important woodland species but now it is usually only found in small groves or as single individuals isolated from each other. Only in the north-east of Scotland are large areas of aspen found.

Aspen trees or larger stands provide a habitat for a wide range of rare or nationally important species including flies, moths, beetles, fungi, lichens and mosses. At least 100 species of fungi, 130 species of lichens and 12 lichenicolous fungi have been recorded on aspen in the UK with recent studies identifying 1 new UK lichen species and several other species that are very rare in the UK. Given the broad range of bryological, lichenological and entomological taxa present on aspen, this would appear to indicate a long ecological continuity in woodland ecology.

Historically, aspen wood was used to make matches, arrows, charcoal for gunpowder, and because of the wood's light weight, paddles. Several dyes can be obtained from the leaves and bark and the Celts used aspen to make shields believing the tree had protective qualities. The bark, if taken in concentrated form, was reputed to have abortive properties. Unfortunately, it was widely believed (wrongly) that Christ was crucified on a cross made out of aspen, and the "quaking tree" was demonised in Christian teaching (perhaps due to its association with pre-Christian beliefs). Thus, the tree had a very low economic value and was rarely planted until modern times.

## WOODLAND SPECIES *Aspen (Populus tremula)*

### BIODIVERSITY CONTEXT

There is no UK species action plan for aspen nor is there a habitat action plan for aspen woodland. However, the importance of aspen woodland has not been sufficiently recognised by the UK BAP process as it supports a unique living community containing many rare species including moths, flies, bryophytes, lichens and fungi that occur nowhere else in the UK. Five UK priority species depend upon aspen stands for their habitats: 3 invertebrates (*Hammerschmidtia ferruginea*, *Byctiscus populi*, *Epione vespertaria*) and 2 bryophytes (*Orthotrichum gymnostomum* & *O. obtusifolium*). When this is taken into consideration with the fact that aspen may be a key indicator of ancient woodland, its importance in a UK and European perspective cannot be underestimated.

### FACTORS CAUSING LOSS OR DECLINE

- Inappropriate grazing of aspen stands, especially ramets, by livestock, rabbits and deer is suppressing aspen regeneration – its foliage is very palatable to browsing animals.
- Lack of seed viability resulting in poor colonisation ability.
- In many areas, same sex stands of aspen remain isolated from the opposite sex, reducing the likelihood of seed generation. Many stands of aspen are too small to provide suitable habitat for several key species and there can be a lack of dead wood or new regeneration.
- There is a shortage of suitable planting stock, especially stock of local provenance, to support new woodland plantings.
- Failure to include aspen, in sufficient quantities, in new plantations of broadleaved woodlands.
- There is a lack of research into the ecology and management of aspen, in fact, research into aspen is in its infancy and there is a shortage of skilled field lichenologists and bryologists to enable informed management decisions.
- Aspen is a favourite food of the European beaver (*Castor fiber*) and the proposal to reintroduce this mammal back into Scotland after an absence of 300 years could have a serious impact on aspen stands near waterways.

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### **OPPORTUNITIES AND CURRENT ACTION**

- Trees for Life instigated an aspen project in 1991, looking a research into propagation methods, protecting regenerating stands and old trees, undertaking mapping and survey work as well as raising awareness of aspen.
- Trees for Life now have set up a web-based aspen information resource containing data and research information on aspen ([www.treesforlife.org.uk/tfl.aspen\\_info\\_resource.html](http://www.treesforlife.org.uk/tfl.aspen_info_resource.html)).
- The Cairngorms Partnership and the RSPB ran a conference on aspen in 2001 and published the proceedings of the conference “The biodiversity and management of aspen woodlands” in 2002. This publication is available free of charge from the Cairngorms Partnership, please contact Peter Cosgrove on 01479 873 535.
- There has been an increased interest in aspen and the species that it supports that is leading to new research. Recent work has identified 4 species new to Scotland associated with aspen and has highlighted aspen’s importance in the forest ecosystem.
- The Clyde Valley Woodland Partnership is in the process of establishing a Forest Habitat Network Project targeting the Clyde Valley catchment. The initial 3 year project – if it receives HLF funding – will see the creation of over 560ha of new woodlands and the restoration and management of a further 225ha.
- A 4 year EU LIFE programme was established in 2001 to enhance and restore all the designated woodland in the Clyde Valley.

### **ACKNOWLEDGEMENTS**

Stephen Corcoran wrote this plan. Thanks go to Peter Cosgrove and the authors of the papers in the publication “The biodiversity and management of aspen woodland” where much of the information for this plan was derived.

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### **ABBREVIATIONS**

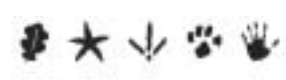
CSFT:	Central Scotland Forest Trust
CVWP:	Clyde Valley Woodland Partnership
FC:	Forest Commission
FWAG:	Farming & Wildlife Advisory Group
Ha:	Hectare
HAP:	Habitat Action Plan
HLF:	Heritage Lottery Fund
HNHS:	Hamilton Natural History Society
OG:	On going
PL:	Plantlife
NVC:	National Vegetation Classification
RSPB:	Royal Society for Protection of Birds
SAC:	Scottish Agricultural College
SAP:	Species Action Plan
SL:	South Lanarkshire
SLCCR:	South Lanarkshire Council Community Resources
SLCER:	South Lanarkshire Council Enterprise Resources
SNH:	Scottish Natural Heritage
SSSI:	Site of Special Scientific Interest
SWT:	Scottish Wildlife Trust
UK BAP:	UK Biodiversity Action Plan



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<b>PROPOSED ACTION WITH LEAD AGENCIES AND PARTNERS</b>						
<b>1. Policy and Legislation</b>	<b>Lead</b>	<b>Partners</b>	<b>Start Date</b>	<b>Completion Date</b>	<b>Meets Objective</b>	
1.1 Ensure that the emerging Forest Strategy for South Lanarkshire takes full account of protecting and enhancing aspen stands.	SLCCR	SLCER	2002	2003	2, 3	
1.2 Target aspen as a priority within woodland planting schemes, and look to increase percentage of aspens planted in all schemes.	FC	CSFT, FWAG, SAC, SLCCR, SWT	2002	OG	2, 3	
1.3 Ensure that aspen is recognised, and planted in sufficient quantities, within the Clyde Valley Forest Habitat Network project.	CVWP	FC, SNH, SLCCR, CSFT, SWT	2003	2006	3	
1.4 Seek the inclusion of effective measures targeting aspen in the preparation of development plans & other policy documents.	SLCER	SLCCR, FC, SNH	2003	OG	3	
<b>2. Site Safeguard and Management</b>						
2.1 Where populations of aspen are identified, encourage relevant land managers and owners to continue to undertake, or introduce appropriate conservation practices.	CVWP	FWAG, SAC, SWT, CSFT, SLCCR	2003	OG	2	
2.2 Compile database of aspen stands and their landowners, and integrate this information into Council GIS database.	SLCCR	CVWP	2003	2004	1	
2.3 Identify areas suitable for planting or regeneration of aspen, especially through forest design plans, and begin process of expanding the resource. Target areas adjacent to existing stands of aspen.	FC	SNH, SLCCR, SWT, FWAG, SAC, CSFT	2003	OG	3	



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2. Site Safeguard and Mngement (continued)	Lead	Partners	Start Date	Completion Date	Meets Objective
2.4 Include appropriate aspen conservation policies within all woodland management plans, as they are prepared.	FC	SWT, FWAG, SAC, SNH, CSFT, SLCCR	2003	OG	2, 3
2.5 Encourage a higher proportion of aspen to be planted in new planting or restoration schemes.	FC	CVWP	2003	OG	3
<b>3. Advisory</b>					
3.1 Produce an aspen "best practice" guide for advisers and land managers, and promote this guide widely.	FC	SAC, FWAG, CSFT, SNH, CVWP, SLCCR	2003	2005	2
3.2 Advise woodland managers on the appropriate management of aspen to support the 5 UKBAP species associated with this tree.	SLCCR	FC, PL, FWAG, SAC, CSFT, SWT, SNH	2003	OG	2
<b>4. Monitoring and Research</b>					
4.1 Collate information on aspen from all existing woodland survey data to determine its location and distribution in SL.	SWT	CVWP, FC, SLCCR, CSFT, SNH, HNHS	2003	2004	1
4.2 Confirm status of all known aspen stands by survey and continue to monitor.	SWT	CVWP, FC, SLCCR, CSFT, SNH, HNHS	2004	OG	1
4.3 Promote interest in, and survey for, aspen dependent species (particularly the 5 UK BAP species) in South Lanarkshire.	SLCCR	HNHS, SWT, PL, SNH	2004	OG	1



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4. Monitoring and Research (continued)	Lead	Partners	Start Date	Completion Date	Meets Objective
4.4 Develop a stock of aspen seedlings and clones taken from genetic stock across South Lanarkshire to provide planting stock.	SLCCR FC, CSFT	SWT, CVWP,	2003	OG	4
4.5 Establish a nursery specifically for developing seedlings or clones of local provenance, linking with Woodland HAP and Juniper SAP.	SLCCR	SWT, CVWP, FC, CSFT	2003	2004	4
<b>5. Communications and Publicity</b>					
5.1 Highlight the importance of aspen in ancient woodland, and the habitat it provides for a wide range of species.	SLCCR	FWAG, SAC, SNH, CVWP, SWT, FC, PL	2003	OG	1, 2, 3
5.2 Raise public awareness of aspen through guided walks, talks, publications, press releases and environmental education opportunities.	SLCCR	SAC, FWAG, SNH, SWT, FC, CVWP	2003	OG	1, 2, 3

