

RESEARCH UPDATE

Ecology Division

Biotype has changed its name to Ecotype! Following the re-organisation of Forest Research into five science Divisions and three Support Divisions, the former Woodland Ecology Branch has now amalgamated with parts of Silviculture (North), Silviculture (South) and Tree Improvement Branches to form the new Ecology Division. We decided to give the divisional newsletter a new name (and small makeover) to reflect this change.

The Division will be sub-divided into four Strategic Programme Groups, each of which will have a designated member to act as first point of contact for general external enquiries, and default spokesperson for the programme group. The groups, programmes, project leaders, and contacts are as follows:

Habitat management and ecosystem dynamics
Research into woodland and associated open habitats – including native woodland management, ancient woodlands, Planted Ancient Woodland restoration, applied stand dynamics, and herbivore impacts.

- **Management for habitat quality - Jonathan Humphrey* and Russell Anderson,** Investigate and provide guidance on the management of forests for biodiversity through developing old growth stands, and managing open ground habitats.
- **Lowland native woods – Ralph Harmer**,** Examine methods for managing, regenerating and extending lowland native woods.
- **Silviculture of upland native woodlands – Richard Thompson*,** Research into the structure, dynamics and silviculture of native woodland ecosystems in northern and western Britain to support restoration and extension for ecological and economic benefits. Emphasis is

on Scots pine forests, birchwoods and the Atlantic oakwoods.

- **Herbivore impacts on woodland – Helen Armstrong* and Robin Gill**,** Understanding and modelling the relationships between herbivore populations and their impact on woodland habitats

The default contact person for this group is: **Ralph Harmer****

Conservation and management of species and genetic resources

Research into genetic conservation and the autecology of priority or potential pest species – including habitat needs, population assessment, population enhancement or management.

- **Genetic conservation – Joan Cottrell* and Jason Hubert*,** Study of genetic variation and gene flow in natural populations. Assessing the level of adaptive variation in the field trials of populations of native species.
- **Forest reproductive material regulations – Sam Samuel*,** Devise methods for inspection of material proposed for registration. Maintain the National Register of Basic Material.
- **Improvement of broadleaves – Jason Hubert*,** Selection/testing of selections at population, family and clonal level: oak, ash, sycamore, beech and birch.
- **Species action plans – Alice Broome*, Roger Trout**, Brenda Mayle** and Chris Quile*,** Undertake research in support of Forestry Commission commitments to the Species Biodiversity Action Plans and provide advice on appropriate management of woodland habitats for these species.
- **Management of grey squirrels – Brenda Mayle**,** Develop cost-effective means of managing the impact of grey squirrels on timber production. Investigate the impact of grey squirrels on woodland biodiversity.
- **Tree protection – Roger Trout**,** Develop techniques and materials for cost-effective

protection of trees and woodlands from vertebrate damage.

The default contact person for this group is: **Joan Cottrell***

Rural and urban landscape ecology

Research into landscape ecology of environments with trees and woodlands – including habitat networks, green infrastructure.

- **Landscape ecology – Kevin Watts**, Chris Quine*, Duncan Ray* and Jonathan Humphrey***, Improve understanding of how biodiversity responds to management at the landscape scale, and translate this into practical management guidance for forest design and landscape planning.

The default contact person for this group is: **Kevin Watts****

Biodiversity indicators and management of ecological knowledge

Research into devices to simplify and explain ecological concepts – including representation of biodiversity through indicators, management of ecological knowledge through decision support systems.

- **Biodiversity evaluation & indicators – Jonathan Humphrey***, Synthesise datasets from the biodiversity assessment project, identify potential biodiversity indicators, and disseminate findings.
- **Ecological site classification & decision support systems – Duncan Ray***, Research, build and test models that predict the effect of forest management on forest ecology, and develop decision-making tools for ecological site classification and forest biodiversity such as HaRPPS.

The default contact person for this group is: **Duncan Ray***

*Based at Northern Research Station, Edinburgh.

**Based at Alice Holt Lodge, Surrey.

See contact details at end of newsletter for full addresses.

Research objectives:

The research agenda covered by Forest Research's ecologists is broad in scope. Current challenges include:

- Developing integrated decision support tools to provide guidance to land managers on managing habitats and species, whether these are protected (such as those covered by Species Action Plans and Habitat Action Plans) or commonplace.
- Providing guidance on the effects on biodiversity of management at the landscape scale – encompassing a wide range of organisms and the integration of various land uses.
- Understanding the benefits and identifying methods of restoring habitats such as ancient woodland, heathland and woodland pasture.
- Developing and recommending Biodiversity Indicators for use in monitoring the effectiveness of policy and practice in British forestry.
- Supporting the move to continuous cover forestry with appropriate advice on the impact of these systems on biodiversity; their modification to enhance biodiversity; and the role wildlife may play in limiting their success.
- Undertaking tree and habitat protection in ways that are deemed acceptable to the public and are effective in conserving and enhancing habitat quality in British woodlands.

For more information on the work of the Division visit the Forest Research web site (<http://www.forestresearch.gov.uk/>) or contact: **Chris Quine**
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William's Cleugh pines Russell Anderson

Background

William's Cleugh, a ravine on the eastern slope of West Kielder Moor with fragments of rowan/birch/willow woodland, contains a group of five Scots pines that pre-date the adjacent planted forest. Another pine stands alone near the foot of the cleugh. The absence of any other Scots pine in the area suggests either:

1. That they or their ancestors were planted.
2. That they are a native remnant.

If the latter were true, we think they would represent the only surviving native pinewood remnant in England.

To determine whether the six trees were planted at the same time we estimated their ages by counting the annual rings in cores taken from the base of their trunks.

The ring counts and estimated ages distinguish three age classes:

- Tree 4 is the oldest, at 153-160 years.
- Tree 6 next oldest, at 125-133 years.
- Trees 1, 2, 3 and 5 younger and close together at 59-80 years.

This proves beyond doubt that the six pines were not planted in a single planting. Trees 1, 2, 3 and 5 are probably naturally regenerated offspring of Tree 4, established during a 15-20 year period when grazing and browsing pressures were low. Tree 4 is almost 30 years older than Tree 6, ruling out simultaneous planting.

There is a poor correlation between diameter and age. There would have been no indication from their diameters that two of the trees were much older than the other four.

The comparative youth of the trees should assure that they are able to reproduce. Forest Enterprise have taken steps to encourage successful establishment of their offspring by fencing off part of the northern side of the cleugh. The planting of some companion species, including juniper, has enhanced the pinewood environment.

How could we learn more about the origin of these trees?

- The use of molecular methods to find out genetic type has been suggested but, unfortunately, much larger populations than this are needed to do that.
- A search of historical sources might throw further light on the longevity of this population, given that a pinewood might have been a known landmark in an upland moorland area. The site is very near the England-Scotland border and close to the Kielder Stone, a landmark mentioned in ancient border ballads.

For more information contact:

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Wood ants in Thetford Forest/East Anglia

The status of the Wood Ant (*Formica rufa*) in East Anglia is being reviewed by Phil Attewell. Phil and a colleague have presented a resumé and appeal for further records of the species in the newsletters of the local naturalists' societies, which can also be seen online at:

www.boxvalley.co.uk/nature/sns/ants.html.

There are some anecdotal records from the region, notably from the Brecklands. There are also some hints of the species' occurrence in Forestry Commission woodlands, such as King's Forest, Suffolk.

Could anyone with formal records or local knowledge of Wood Ant populations in this area please get in touch with him at the following address:

Phil Attewell,
69 Thornbury Gardens
Boreham Wood
Herts
WD6 1RD

Or by e-mail at:

PhilAttewell@aol.com

CONFERENCES

Woodland Birds conference in 2006

A major conference on woodland birds is being planned for spring 2006. Invited speakers from UK, Europe and North America have been asked to address the theme Woodland birds: their ecology and management. The conference is being organised under the auspices of the British Ornithologist's Union (BOU) by:

- Ken Smith (Royal Society for the Protection of Birds):
- Arjun Amar (Royal Society for the Protection of Birds)
- Rob Fuller (British Trust for Ornithology)
- Phil Grice (English Nature)
- Fred Currie (Forestry Commission England)

- Steve Dudley (BOU)
- Chris Quine (Forest Research)

The conference will span April 1st-3rd and be based in the English Midlands. It is likely to be of interest to professionals involved in woodland management, policy makers, researchers, woodland owners and others.

Further details in due course on the BOU web page <http://www.bou.org.uk/index.htm>, and the Forest Research Events page <http://www.forestresearch.gov.uk/fr/INFD-5ZM9UN>.

CONTACT DETAILS

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For more general information about the work of Forest Research, visit our new website at www.forestresearch.gov.uk.