

FORESTRY RESEARCH AT THE NORTHMOOR TRUST

GROWING A CENTRE FOR BROADLEAVED FORESTRY RESEARCH

BRANCHING OUT

The Northmoor Trust acquired 55 hectares (136 acres) of land in south Oxfordshire in 1991, purposely to establish a new woodland and centre for forestry research. The key objectives of the project are to:

1. *develop the research and demonstration functions of our centre, Paradise Wood;*
2. *develop and build on the national leadership in walnut and oak species;*
3. *demonstrate the benefits of sustainable management of broadleaved plantations;*
4. *promote the importance of the forestry industry within a sustainable countryside.*

Paradise Wood is our new woodland and centre for forestry research. It adopted its name from a medieval field, 'Paradise', sited at the centre of the arable farm. The land is a level ex-floodplain and classed as Grade 2 arable, the deep soils being mostly sandy-clay loam overlying river gravel, with pH ranging from 6.2 to 7.7. Rainfall averages 570mm per annum.

So far 45,000 trees have been planted across 23 ha, receiving grant aid under current schemes (WGS and FWPS). Unplanted areas on the site continue under a commercial arable-cropping regime until selected for tree planting. The completed woodland will cover 45 to 50 ha and will be composed of 75% broadleaves, 10% conifers, 5% coppice and 10% open ground.

GROWING NEEDS

Improvement of conifer species for timber production in Britain began early in the twentieth century but similar programmes for broadleaved species are relatively recent. The Northmoor Trust is actively seeking to be influential in redressing this imbalance by promoting forestry research for broadleaved species. The emphasis of our research is tree improvement in conjunction with silvicultural and ecological research.

REAP WHAT YOU SOW

The long economic life cycles in forestry, amplify the importance of sourcing quality planting stock, if valuable timber is sought as an end product. All too often in the UK, stock of unknown origin and potential is planted, leading to unrealistic production expectations. Good genetic stock combined with exemplary silviculture will maximise the forest's full potential and support other activities.

Paradise Wood has been primarily created for timber production and research but will also provide long term benefits to wildlife and enhance the local landscape. Drawing upon the Northmoor Trust's ecological research expertise, we are uniquely placed to demonstrate the multi-purpose benefits of sustainable woodland management.

SEEDS OF CHANGE

The Northmoor Trust works closely with a large number of partners in developing and facilitating forestry research (see overleaf). The Northmoor Trust is a founder member of the British and Irish Hardwoods Improvement Programme (BIHIP); a consortium of forestry professionals, public bodies, landowners and forest scientists (www.BIHIP.com), and holds the current elected secretarial position.

The Northmoor Trust is leading a nationally important tree improvement programme for the common walnut (*Juglans regia*), having amassed a collection of 18 provenances across the species' natural and current ranges, including 375 genotypes new to Britain. Field trials aimed at developing improved silvicultural methods for walnut have been established by the Trust both at Paradise Wood and across 5 other sites in southern Britain, in support of the tree-breeding programme.

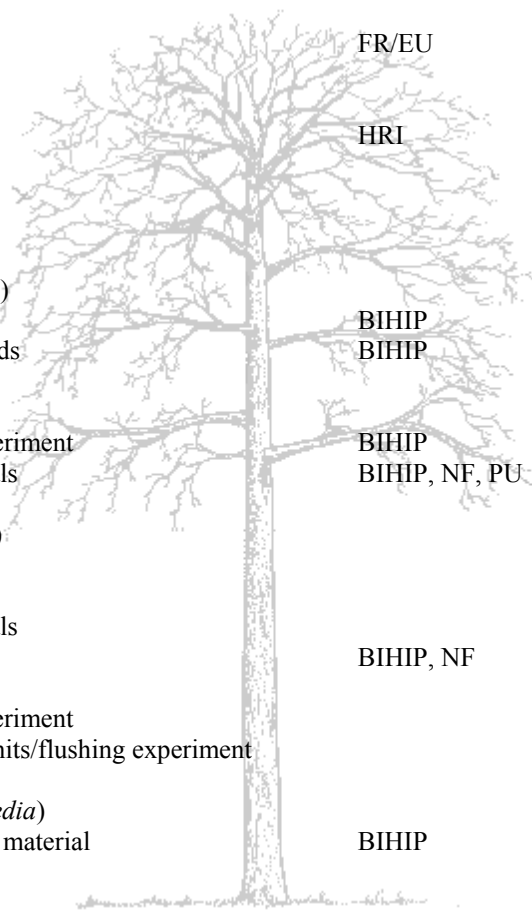
The Northmoor Trust is playing a lead role in establishing a national collection of oak (*Quercus robur* & *Q. petraea*) breeding seedling orchards, co-ordinating the eight sites and hosting one of the trials from 2002.

The Northmoor Trust delivers talks to interested organisations and welcomes many visitors to Paradise Wood each year. Royal Forestry Society groups, farming and forestry interest groups, students and researchers from various universities have all benefited from our unique facilities. Several forestry conferences have been hosted in recent years and we have welcomed executives and policy makers from the Forestry Commission and DEFRA, including Forestry Minister Elliot Morley in 2002.

Forestry Research at the Northmoor Trust

CURRENT AND FUTURE PROJECTS

SPECIES/PROJECT	PARTNERS ¹	DATE
ASH (<i>Fraxinus excelsior</i>) Breeding seedling orchard Provenance trial Artificial nitrogen application experiment Growing degree days & chilling units/flushing experiment International provenance trial	BIHIP FR FR/EU	planted 1993 planted 1995 2001 initiated 2001 in pipeline (2003)
BEECH (<i>Fagus sylvatica</i>) International provenance trial	FR/EU	planted 1999
CHERRY (<i>Prunus avium</i>) Clonal trial Pruning height experiment Wound occlusion experiment Whorl pruning experiment	HRI	planted 1999 2000 2000 in pipeline (2002)
OAK (<i>Quercus robur</i> & <i>Q. petraea</i>) Clonal archive Multi-site breeding seeding orchards	BIHIP BIHIP	2002 in pipeline (2002)
BLACK WALNUT (<i>Juglans nigra</i>) Artificial nitrogen application experiment Multi-site provenance/progeny trials	BIHIP BIHIP, NF, PU	planted 2001 in pipeline (2002/03)
COMMON WALNUT (<i>Juglans regia</i>) Establishment trial Pruning experiment Multi-site provenance/progeny trials Multi-site nurse mixture trials Direct seeding experiment Artificial nitrogen application experiment Growing degree days & chilling units/flushing experiment	BIHIP, NF	published 2001 planted 1996 planted 1999 planted 2000 & 2002 planted 2001 planted 2001 initiated 2002
HYBRID WALNUT (<i>Juglans intermedia</i>) Small test plots of different hybrid material	BIHIP	in pipeline (2002)
PROJECTS Silvo-poultry (agro-forestry with broiler chicken) National Forest – Lountwood Walnut Plantation BIHIP website www.BIHIP.com Walnut Club www.WalnutClub.org Woodland flora development Walnut genetic diversity/evolutionary history 'High pruning for profit' leaflet 'Formative pruning' leaflet	UO, FAI, DEFRA Jaguar/NF HRI Ecoscope FR, WH, UO FR, WH, UO	in pipeline (2002) 2000 - ongoing launched 2002 launched 2002 2002 scoping published 2002 in pipeline (2003)



Partners¹

BIHIP	British and Irish Hardwoods Improvement Programme
EU	European Union
COFORD	National Council for Forest Research and Development, Ireland
DEFRA	Department of Environment, Food and Rural Affairs
Ecoscope	Applied ecologists
FAI	Food Animal Initiative
FR	Forest Research, an agency of the Forestry Commission
HRI	Horticulture Research International
Jaguar	Jaguar Cars
UO	University of Oxford
NF	National Forest
PU	Purdue University, Indiana USA
WH	Woodland Heritage



THE ART of PERFORMANCE



THE NATIONAL FOREST