

# **The BeWILD Legacy Report**

**An evaluation of the BeWILD Project 2008-2011,  
an ancient woodland management project in Berkshire**

**Meg Chambers, Karen Davies and Melanie Hardie, 2013**



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**January 2013**





## THE BeWILD LEGACY REPORT

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### *Maps:*

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*Structure of the Report:*

This report is not designed to be a detailed account of the BeWILD Project, rather it is a record of our experiences in planning, organising, carrying out and evaluating a woodland project. Wherever possible, it has been presented in a Toolkit format aimed at those considering and planning a new woodland project.

Each chapter describes the process of that aspect of the project and what the BeWILD Project achieved, and then presents a summary of the Successes and achievements: what worked well, the Problems and limitations: what could have worked better, and shares our Findings and recommendations: lessons learned. Finally, we have provided practical recommendations for those setting up woodland projects in order to learn from our experiences and ensure you have a successful project. These are presented in the form of Top Tips in a text box at the end of each chapter.

Each chapter is set out accordingly.

We hope that you find our experiences and the content of this Report useful in whatever work you do.

Best wishes,

Meg, Karen and Mel, January 2013

## EXECUTIVE SUMMARY

By Mel Hardie

The BeWILD Project was a partnership project primarily funded by Natural England's Countdown 2010 Biodiversity Action Fund that ran 2008-2011, and aimed to identify and restore ancient woodlands across Berkshire. Through the collaboration of multiple conservation partners, volunteers and willing woodland owners, the Project delivered substantial outputs in a limited time frame and in a financially challenging climate.

This report has been written by the three former BeWILD project managers in order to pull together the Project's successes and achievements and share the experiences and findings of the Project, to encourage the partner organisations and others to pick up and build on the progress and connections made and develop new woodland initiatives which will help secure the future of our ancient woodlands. It is designed to be used as a toolkit with explanations of how the Project was undertaken, key findings and recommendations for future woodland conservation and management projects, and potential areas of work identified for future projects and partnerships.

Ancient woodlands are important habitats, not just for their inherent biodiversity value but also as part of the UK's cultural and heritage landscape. It is often not appreciated that they need management to maintain them in good condition as dynamic habitats, ensuring thriving wildlife populations, and to protect them from pest plants and animals, particularly browsing deer, rabbits and squirrels, diseases and the uncertain impacts of climate change.

The BeWILD Project demonstrated the importance of a partnership approach, building on the skills, contacts and ideas of multiple organisations and individuals. The networking and skill sharing woodland events built relationships between woodland owners and volunteers, craftsmen, consultants and contractors, which often went beyond the scope of the Project work. Through the promotion and organised training workshops, many volunteers were engaged in the Project and became instrumental in carrying out much of the woodland management for conservation and in surveying for protected species, continuing after the Project funding had ceased. One of the key outcomes was the establishment of the Berkshire Mammal Group, through the connections made and their discovery of previously unknown dormouse populations in the county.

Achieving these networks is only possible with a co-ordinator acting as the principal contact point, helping to make the links and respond to the individual needs of woodland owners, managers and volunteers. This role can bridge the gaps in the current online and specialist advice to allow owners of small and medium sized woodlands access to a range of information and make informed decisions on possible management options. The co-ordinator is also instrumental in pairing woodlands (and their owners/managers) with a conservation volunteer workforce, as well as working with commercial woodland managers to optimise management for wildlife through their mechanised operations.

Details of a rich variety of woodland products and markets are given, which can be used as economic drivers to stimulate more and better quality woodland management work. The Forestry Commissions' English Woodland Grant Scheme (EWGS) provides some structure and support for the long-term management of ancient woodlands. However, some woodlands may need further support, such as the small neglected ancient woodlands on the



margins of economic viability, as found in Berkshire. This report addresses how and why the scale of management should be matched to the woodland size and situation, enabling holistic woodland management for the benefit of wildlife, woodfuel supply and economic return, engaging woodland owners and managers as well as the volunteer community.

As future funding streams for similar projects are uncertain, there is a real need to look at sustainable market-driven solutions to maintain and encourage further woodland management work. Through woodland events and activities, this Project demonstrated to the Berkshire community how woodland management links in to the wider woodfuel supply chain. The BeWILD Project was also able to create a small market for woodfuel and a lasting legacy through the installation of a woodfuel boiler, part-funded by the Project and used to heat Hampstead Norreys Community Shop.

In summary, there are many, varied and complex socio-economic reasons why woodlands are being neglected across the county, and no one solution is able to address this, but the emphasis must be on encouraging woodland owners and managers to see the value of their woodlands financially, environmentally, as a local fuel resource and to the local community.

### **BRINGING BERKSHIRE'S ANCIENT WOODLANDS BACK TO LIFE**

**By William Hamer, Forestry Consultant**

1. Assess what your woodland includes by way of timber crops, other sources of income and nature conservation interest.
2. Develop clear management objectives, seeking advice from specialists.
3. Direct the produce from your woodland to the best market.
4. Work at the most appropriate scale. Make the most of the economies of scale but work at a scale that suits the size of woodland and the markets your products are aimed at.
5. Co-operate with others to get the best result. Use the skills of established practitioners to fill gaps in one's own knowledge and capabilities. Working together helps achieve good scales of operation and access to markets.
6. Develop a woodland infrastructure which will allow suitable access to the woodland and allow woodland produce to be brought to the most appropriate market.
7. Make the best use of free money through grants, free advice where available and free labour from volunteers where they can make a meaningful contribution.

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# I. INTRODUCTION

## 1.1 Importance of ancient woodland

Ancient woodland is a nationally important and threatened habitat. Classified as woodland that has been in continuous existence since at least 1600 (Spencer and Kirby 1992), it is a unique habitat that has preserved irreplaceable ecological and historical features.

The wildwoods of Great Britain were established at the end of the last glacial event (approximately 4,000 years ago), and covered most of the countryside. Records from the Domesday Book suggest only about 15% of this wildwood survived in England by the 11<sup>th</sup> century, cleared for agriculture, urban development and infrastructure. By 1900AD that figure was nearer to 4%. The total woodland cover in England is now approximately 10%, but this is largely due to Forestry Commission plantations on ancient woodland sites, but the remaining ancient native broadleaf woodland, referred to as ancient semi-natural woodland (ASNW) is a scarce resource (DEFRA/Forestry Commission, 2005 and Kirby, 2012<sup>1</sup>).

Ancient woodlands are of prime ecological and landscape importance, providing a vital part of a rich and diverse countryside. In particular, ancient woodlands:

- Are exceptionally rich in wildlife, and support many rare and threatened species.
- May contain surviving descendants and features from the original wildwoods.
- Act as reservoirs from which wildlife can spread into new woodlands.
- Are an integral part of England's historic landscapes.
- Contain a wealth of features of historical and archaeological importance little altered by modern cultivation or disturbance.
- Contribute to people's sense of place and imagination.
- Are important elements in the biological and visual functioning of a landscape.

(Natural England standing advice, 2011)

Further details defining the different types of woodland and the different woodland stand types found in Berkshire can be found in Appendix A, Woodland terms.



Primrose ©Greenaway Collections and Ancient woodland ©FWAG

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<sup>1</sup> Dr Keith Kirby, woodland ecologist at Oxford University

[http://dps.plants.ox.ac.uk/plants/\(A/QPDrthzJywEkAAAAANWQ2NGIyMTMtOWZkMy00MGQ3LTk0YzgtM2U0NmViYWwNTgw55OgH2ffw\\_47snykm7ft1K04sms1\)\)/staff/KeithKirby.aspx](http://dps.plants.ox.ac.uk/plants/(A/QPDrthzJywEkAAAAANWQ2NGIyMTMtOWZkMy00MGQ3LTk0YzgtM2U0NmViYWwNTgw55OgH2ffw_47snykm7ft1K04sms1))/staff/KeithKirby.aspx)



Chanterelle mushrooms ©Forestry Commission picture library  
 Stag beetles ©TVERC, Fly agaric mushrooms ©FWAG

‘Ancient woodlands provide a home to more threatened species than any other UK habitat, including 79 globally threatened and declining species’ (Woodland Trust, 2012). Often these species require the relatively stable conditions and undisturbed soils of this habitat so are unable to colonise new areas easily. There are only about 50 native tree species in the UK, but those plus the shrubs, mosses, liverworts, fungi, ferns and hundreds of wildflower species make up a rich and diverse ecosystem with plentiful food and shelter for a huge variety of invertebrates. There are literally hundreds of species of invertebrates found in ancient woodlands, including moth, beetle and spider species as well as millipedes, butterflies and wasps, which in turn provide food for the birds, bats and other mammals. The majority of the UK mammal species will utilise woodlands for food and shelter, with some being highly dependent, like the UK Biodiversity Action Plan (BAP) species, dormouse and woodland bats that have been threatened by the decline in traditional coppice woodland. Our remaining ancient woodland is therefore irreplaceable.



Key ancient woodland species: Common long-eared bat and Dormouse  
 ©Forestry Commission picture library

The richest diversity of woodland life occurs in complex woodlands with structural diversity made up of the canopy, shrub layer and ground flora, stands of ancient trees, dead wood and open spaces. These give the greatest variety of niches to support a multitude of life. Often this rich structural diversity was enhanced and maintained when there were active woodland industries, such as coppicing, and charcoal and hurdle making. These activities opened up areas within the woodlands allowing sunlight to reach the wildflowers and attract the insects.

Today, the near-total loss of these woodland activities and woodland management, plus the continuing fragmentation and reduction in size and number of ancient woodlands in the British landscape is having a deleterious impact on native wildlife. And it appears to be the species that most rely on open space in the woodlands that have been declining, with significant losses of floral diversity, the abundance of woodland butterflies dropping 43% over the last 16 years (Butterfly Conservation) and woodland birds declining 20% between 1976 – 2001, with some species such as willow tit and lesser spotted woodpecker declining in number by 91% and 76% respectively (RSPB).

## **1.2 Woodland cover in Berkshire**

An inventory of ancient woodland was first initiated in 1981 by the Nature Conservancy Council that counted only those woodlands greater than two hectares in size, and highlighted the South East as a particularly important region accounting for a third of the ancient woodland in England. Berkshire, as a key county with its ancient hunting woodlands contributes to this figure with 3,750ha of ancient semi-natural woodland. However, more recent ecological surveys and projects to identify and map the ancient woodlands less than two hectares undertaken by the local records centre, Thames Valley Environmental Records Centre (TVERC), highlights the importance of this habitat in the county, supporting a rich woodland biodiversity as well as cultural and historic sites. This is part of a wider review of the Ancient Woodland Inventory across the South East which is supported by DEFRA.

Berkshire has 11,900ha of native woodland of which 32% is ancient woodland, (TVERC, 2009), based on woodlands over 2ha. Forestry Commission figures derived from the National Inventory of Woodland and Trees, based on survey data from 1995, record the total area of woodland in Berkshire as 18,307ha, including woodlands less than 2ha.

It is these smaller, fragmented ancient woodlands that are most under threat from land use change and development pressures in this densely populated region. This is partly from a lack of knowledge about where these woods are if they were not mapped by the Ancient Woodland Inventory or the Local Record Centre (TVERC).

### **MAP 1: DISTRIBUTION OF ANCIENT WOODLAND IN BERKSHIRE** (see overleaf)

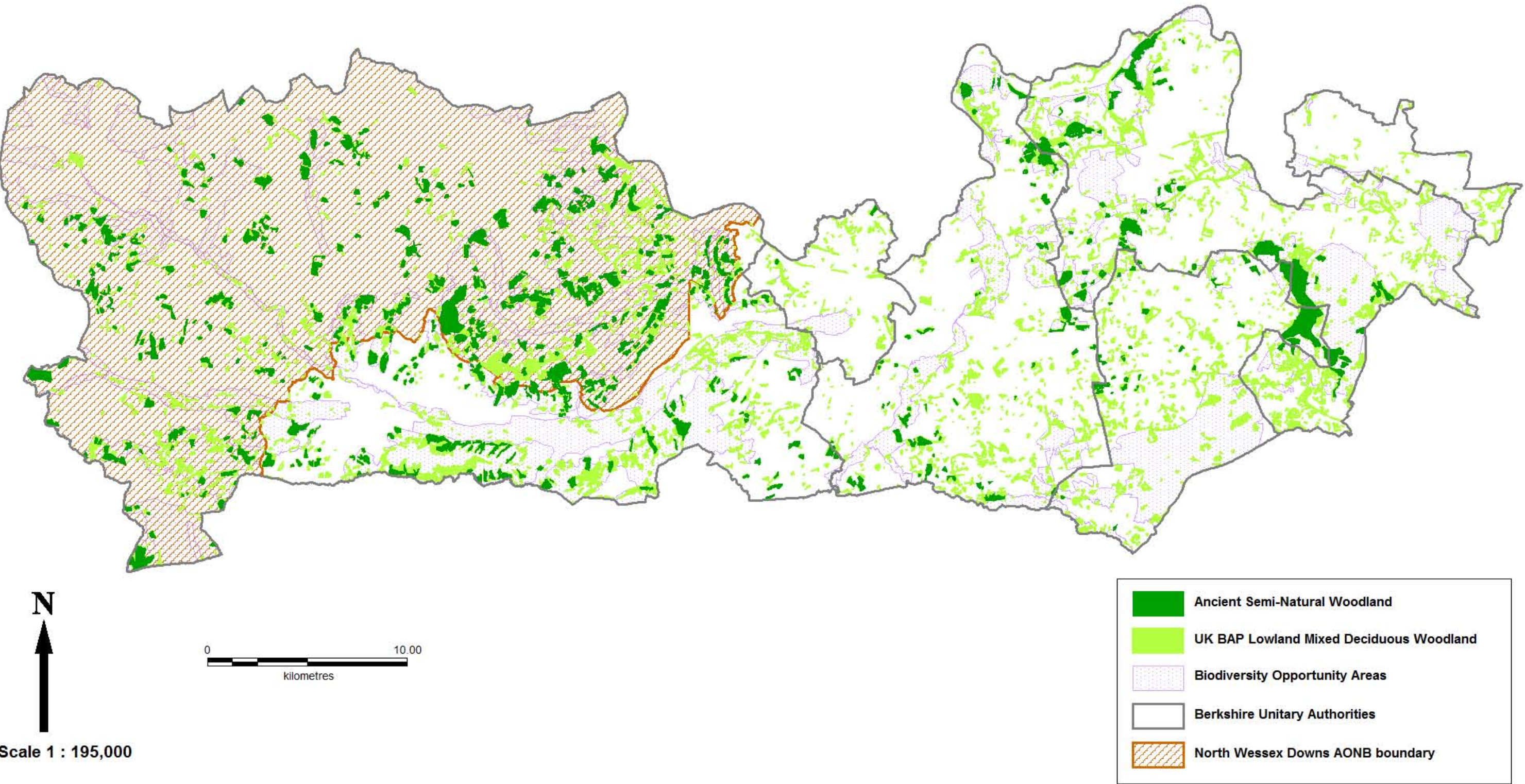
This map is based on TVERC figures and the 1981 Ancient Woodland Inventory.

## **1.3 Need for the BeWILD Project**

Managing woodlands takes time and money. Woodland owners need to be able to afford to manage their woodlands, and unless this is subsidised by other income streams, woodland management needs to pay for itself. Where labour has got more expensive, and markets for many timber products have been lost, management of woodlands has declined significantly since 1945, with many ancient woodlands in Berkshire having lain untouched and neglected since the 1950s.



MAP 1 : DISTRIBUTION OF ANCIENT WOODLAND IN BERKSHIRE





There are many, diverse and complex socio-economic reasons for this including:

- Woodlands are regarded as low priority on farms and estates
- There is a lack of skills and confidence in woodland management by woodland owners and managers
- There is a lack of knowledge, understanding and connection to the markets for woodland products
- The attitudes and objectives for woodland management by woodland owners, managers and gamekeepers differ from those of ecologists and they are therefore wary of allowing surveys and ecological or forestry advisors access to their woodlands.

In addition to the social attitudes and economics of woodland management, there are other threats which are not being managed, including:

- Pest damage – browsing by deer, rabbits and squirrels.
- Tree diseases
- Climate change – although the full impacts of a changing climate are not known on woodlands, changes in phenology and ecological niches are having an impact on woodland biodiversity, as well as the drier summers putting more stress on the trees making them more susceptible to disease.

Through the Local Biodiversity Action Plan group (LBAP), made up of the active conservation organisations, local government authorities, the Local Record Centre (TVERC) and non-government organisations, such as representatives from the Berks, Bucks and Oxon Wildlife Trust (BBOWT) and the Pang, Kennet and Lambourn Valleys Countryside Projects (as part of the Farming and Wildlife Advisory Group, FWAG), it was determined that a more focused and action-lead plan was needed to make any impact on the conservation of key UKBAP habitats in the county.

A method was developed by TVERC, and subsequently rolled out across the South East<sup>2</sup> by the LBAPs of Oxfordshire and Berkshire, to identify priority biodiversity assets and map the key Biodiversity Opportunity Areas (BOAs) at a landscape scale. These are areas that represent ecological networks across the county (and region) with the greatest opportunities for habitat restoration and creation. A large proportion of these areas included UKBAP and ancient woodland sites, but these were predominantly patches of small fragmented woodland in private ownership, which the conservation community had found hard to have any impact on previously. Evidence from the TVERC Local Wildlife Site surveys (predominantly on woodland sites in the county), and progress and establishment of woodland grants (EWGS) by the Forestry Commission in the county, suggested that larger woodlands appeared to be in active management, but it was these small woodlands, often seen as unviable, that had very limited or no management activity. A prime reason was that the many woodland products that would have once been in demand had lost commercial interest.

The BeWILD Project (which stands for Berkshire Woodland Improvements Linked to bioDiversity) aimed to address the common place lack of management of (small) ancient

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<sup>2</sup> See the South East Biodiversity Forum for the map and action plan for the South East Biodiversity Opportunity Areas <http://strategy.sebiodiversity.org.uk/pages/biodiversity-opportunity-areas-description.html>



woodlands in Berkshire, and help the LBAP achieve its' aims to protect, enhance and buffer priority habitat through a multi-level approach to managing ancient semi-natural woodlands (ASNWs). On a more site-specific level, one to one advice would be given and actual management would take place to bring woodlands back into management. The woodland management would tie in with hedgerow management, highlighting the importance of the links between woodlands and the surrounding landscape, and providing habitat buffers and wildlife corridors between woods. On a wider scale, the project aimed to provide landowners with training on managing woodlands for BAP priority species, ancient trees, and the resurgence of markets for coppice products and woodfuel that could help make management more sustainable and enhance biodiversity in the main Berkshire Biodiversity Opportunity Areas (BOAs).

- Training and practical experience for volunteers would be provided in traditional skills such as coppicing, hedgelaying and biological surveying.
- Woodlands would be surveyed for bats, woodland birds, mammals and flora.
- Flagship woodlands would be identified in the relevant BOAs, after studying existing Local Wildlife Site data and the erection of bird and bat boxes and possibly dormouse boxes, for biodiversity to be enhanced through woodland management practices.
- The Project would directly benefit ancient semi-natural woodland and BAP priority species: dormouse, pipistrelle, brown long-eared, natterers and noctule bats, and white admiral, grizzled skipper and white letter hairstreak butterflies.

To establish the grounds for this project and to help scope out the plans several key facets needed to be established:

1. *Identify the assets* Need to get good baseline information on the priority habitat, its' threats and areas of success. Get information on assets beyond the biodiversity resource such as the conservation community and willing landowners who do not currently have the means or activities to get involved.
2. *Identify obstacles to achieving conservation goals* Although there will always be resistance from certain landowners to undertake conservation work, as it is perceived that it will not be in their benefit, there are many more who would undertake conservation management if it could be made to at least break even.
3. *Identify market-based mechanisms* Tool sharing via machinery rings, new markets for products and promoting local goods to help drive the market price and therefore incentives to landowners to engage.
4. *Identify existing groups and contacts* Co-ordination and collaboration is the key to ensuring that all conservation groups are promoting the same clear message so that the collective list of contacts and landowners receives the same information and reduces individual groups' efforts. The whole is greater than the sum of its' parts. Also knowing the local conservation groups in the area can help achieve the mutually beneficial result of gaining new areas to survey or work on, whilst the landowner gets a free service of works or information about a Forestry Commission grant.
5. *Secure funding* Apply for funding to ensure the continued co-ordination until the market tools are in place.

## TOP TIPS FOR WOODLAND PROJECTS

If you want to establish whether there is a need for a woodland project in your area:

- Contact your local Record Centre and find out if a recent inventory of the counties' woodlands has been undertaken and any recommendations given.
- The outcome of this will prioritise the actions and direction needed of any further woodland projects.

If there is no recent ancient woodland assessment (since the Forestry Commission 1981 Inventory):

- Encourage your Local Biodiversity Action Plan group to consider putting a bid together for external and/or Local Government Authority funding, following the methodology set out by the Forestry Commission. See <http://www.forestry.gov.uk/forestry/INFD-8VPJFD>
- Contact your local Council ecologist and establish the percentage and level of protection of the ancient woodland resource and whether there is an active project or commercial incentive for woodland management, especially in small woods.

## 2. PROJECT DEVELOPMENT

### 2.1 Securing funding

The BeWILD Project was established as a result of the need to carry out more management in Berkshire's ancient woodlands, the need to encourage sustainable management of these woodlands, and the criteria of Natural England's Countdown 2010 Biodiversity Action Fund 2008-2011.

Countdown 2010 funding was announced by Natural England in May 2008. Grants were available to projects whose aim was to reverse the decline in biodiversity, at a maximum of 50% funding and £25,000 each year for the three years. The maximum project budget was therefore £150,000, with match funding restricted to the applicants' own funds and non-public sector sources, ie non-government funding, although European grant money was eligible. 50% of the match funding (25% of the overall grant) could come from in-kind sources such as volunteer contributions of time. The grant could support Project Officer costs, capital items, training, education and information.

Countdown 2010 project applications were assessed using the following criteria<sup>3</sup>:

- a) How the proposal benefits BAP priority species and/or habitats in England.
- b) How the proposal benefits the best sites for wildlife in England (including Local Wildlife Sites).
- c) The extent to which the specified gains for BAP priority species and habitats achieved by the project also support enhancements at a landscape-scale (for example through reducing the effects of fragmentation).
- d) How the project is developing the evidence base for BAP priority species and habitats, for example through surveying and monitoring, trialling of habitat management techniques.
- e) Effective partnership working, for example by engaging with regional or local biodiversity partnerships, schools and local businesses, in order to deliver particular outcomes for BAP priority habitats and species.
- f) That the benefits of the project are sustained after the funding period ends, i.e. that there is a lasting legacy.
- g) Value for money.

This funding opportunity had a very strong synergy with a woodland project discussed by TVERC, the Pang, Kennet and Lambourn Valleys Countryside Projects (FWAG) and the Berkshire Nature Conservation Forum, which is an assemblage of conservation organisations and planning ecologists in Berkshire. TVERC and the Pang, Kennet and Lambourn Valleys Countryside Projects (FWAG) worked up a project proposal, and decided to make it a Berkshire-wide project, as TVERC worked at a county level and the Pang, Kennet and Lambourn Valleys Countryside Projects (FWAG) worked in West Berkshire, which fitted in with the landscape-scale suggested by the funding criteria.

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<sup>3</sup> Natural England, 2012

<http://www.naturalengland.org.uk/ourwork/conservation/biodiversity/funding/countdown2010.aspx>

## **MAP 2: BERKSHIRE UNITARY AUTHORITIES AND SETTLEMENTS** (see overleaf)

This map shows the areas of all of the Unitary Authorities within Berkshire, with whom the BeWILD Project worked.

TVERC and the Pang, Kennet and Lambourn Valleys Countryside Project (FWAG) already worked in partnership with the Berkshire local authorities, the statutory bodies, the Berkshire Nature Conservation Forum, local businesses and landowners across the county, as well as with local volunteer groups such as Friends of the Pang, Kennet and Lambourn Valleys, the Pang Valley Conservation Volunteers (PVCV) (now both part of the West Berkshire Countryside Society), Conservation in Reading on Wednesdays (CROW), and the British Trust for Conservation Volunteers (BTCV, now The Conservation Volunteers, TCV).

### **2.2 Setting the scope of the BeWILD Project**

The original project conceived by the project partnership had to be scaled down to what was feasible within the funding available from Countdown 2010, and was tailored to meet the funding grants' assessment criteria.

In response to the Countdown 2010 Biodiversity Action Fund grant funding criteria:

- a) Ancient woodland was identified as the key habitat in our project area. Ancient woodland is a UK Biodiversity Action Plan (BAP) habitat.
- b) TVERC was key in identifying, surveying and proposing Local Wildlife Sites. They were also instrumental in identifying appropriate Biodiversity Opportunity Areas (BOAs) in Berkshire. Several of the BOAs were based on ancient woodland habitat and these were targeted for BeWILD.
- c) The Project aimed to encourage management of woodlands within the BOAs and encourage the sympathetic management of surrounding habitats such as hedgerows, field margins and grassland.
- d) The Project aimed to survey Local Wildlife Site woodlands, but also to provide monitoring of bird, bat and dormouse boxes and training for local volunteers and groups.
- e) The partner organisations had strong links with local authorities, Forestry Commission, Natural England, the Berks, Bucks and Oxon Wildlife Trust (BBOWT), and other conservation organisations such as Butterfly Conservation, as well as volunteer groups, landowners and businesses, enabling links and partnerships to be formed in delivering woodland management.
- f) The Project particularly identified making use of developing woodfuel markets, encouraging uptake of the Forestry Commission's English Woodland Grant Scheme (EWGS) and continued volunteer involvement to secure a long term legacy of sustainable management.
- g) The Project was considered to be good value for money, both with regards to biological recording and practical management, because of its partnership approach and volunteer involvement. It also made use of the existing knowledge of local landowners and woodland owners.

### **The BeWILD Project's conservation outcomes**

The outcomes were designed to ensure long-term management work took place in woodlands, to improve their viability and biodiversity value beyond the life of the Project, by creating a chain of landowner, volunteer and markets for woodland activities and products. Below are the conservation outcomes for the three year period of the project funding:



MAP 2 : BERKSHIRE UNITARY AUTHORITIES AND SETTLEMENTS



1. 1,000ha of BAP woodland to be visited and action plans written, identifying key species and habitats and appropriate management actions. Woodland owners will be made aware of new legislation and encouraged to apply to EWGS where appropriate.
2. Baseline surveys of BAP species and habitats to be carried out for all woodlands receiving management advice, with the survey data held by TVERC. Ongoing monitoring to be undertaken, in order to assess the response of species to woodland management, ie occupancy of bat boxes.
3. Training of landowners in woodland management for wildlife, and new habitats and species legislation.
4. Fourteen coppicing, hedgelaying and hedge planting volunteer tasks to take place each year between October and February/March by year three, enhancing woodland biodiversity in at least two woodlands per Biodiversity Opportunity Area. Hold an annual hedgelaying competition using stakes and binders produced through the woodland management work.
5. Establishment of one new woodchip boiler and local woodchip supply by year three.

### 2.3 Preparing a budget for the BeWILD Project

In order to cost up the delivery of the BeWILD Project, all of the elements had to be costed, including staff and office costs, promotional and interpretation materials, training and woodland management capital works.

The costs below were estimates based on talking to specific organisations and partners, web based research, the John Nix Farm Management Pocket Book 2008, and an idea of costs and time from previous project experience. The costs were spread over three years and included increases for inflation and VAT where it was not recoverable. The activities and costs are outlined in the tables below.

**Table 2.1** The original budget plan as set out in the application made in July 2008 for the period 2008-2011.

Project activity	Description of activity	3 year total costs for each activity	Issues that affected the actual expenditure for each activity
FWAG Advisor/Officer costs, based on 2 days a week	Liaising between partners, facilitating workshops/seminars, reporting, publicity, promotion, writing leaflets and display material, organising and leading volunteer tasks, site visits, undertaking woodland action plans, organising hedgelaying competition.	£32,400	After the application was submitted, staff left so the work fell to the Project Manager to carry out one day a week. An environmental consultant was also brought in to assist with organisation of tasks, writing leaflets etc.
TVERC Officer, based on 2 days a week	Recruitment, desk search, data entry, data storage, mapping, training of volunteers, surveys of LWS woodland, purchase of survey equipment. Helping inform where practical work or advice should take place.	£28,450	Changes in funding at an organisational level meant that a new officer was not recruited and the Director of TVERC fulfilled the role one day a week.



<b>Project activity</b>	<b>Description of activity</b>	<b>3 year total costs for each activity</b>	<b>Issues that affected the actual expenditure for each activity</b>
Landowner seminar/ training workshops - 3xhalf day events per year	Venue, refreshments (20 people), preparation, site visit, risk assessment, guest speaker, expenses, based on FWAG standard figures.	£16,771	All of the training we delivered was full day.
Display boards/ materials (portable and fixed) leaflets and publicity fliers	Design costs, materials and printing based on previous display material	£22,878	The expenditure was less, as only one fixed board was put up and the flier design was done in house.
Survey equipment, tape measure, GPS, maps, nets, ID charts, dormouse tubes and boxes, bird and bat boxes	Purchase survey equipment, nest boxes and monitoring tubes. To be put up by volunteers and co-ordinated by TVERC and an emerging Berkshire Mammal Group	£1,810	
Contractor costs	Thinning and removing canopy trees (in coppice areas, not veteran trees)	£21,000	Only part of this amount was spent; the rest was transferred to the wood boiler feasibility study and purchase
Volunteer expenses, refreshments and conservation tools	Volunteer recorder expenses, refreshments for conservation tasks and purchase of tools, hard hats and gloves	£9,005	
BTCV conservation volunteer days/holidays (6 weekends)	Bringing in volunteer groups to undertake coppicing and thinning	£3,006	The delay in the start of the project meant there was no time to organise a BTCV holiday in the first year, then one of the BTCV holidays was cancelled due to circumstances beyond our control which affected expenditure.
Annual Hedgelaying competition	Judges, prizes, refreshments. Hedgelaying materials supplied by volunteer operations	£2,430	We were able to use takings from selling refreshments as match funding, but this was a small amount compared with the cost of putting on this event
50% of capital cost of 300W woodchip boiler (based on 2008 prices)	Feasibility study and one-off contribution towards purchase (not installation) of woodfuel boiler to be supplied by local woodchip	£12,500	This was an unknown proposal, but we were able to transfer expenditure from elsewhere in order to achieve the end result. The purchase of the woodfuel boiler is discussed in Chapter 8.2.

## **Match funding**

Match funding needed to be carefully considered. The Countdown 2010 Projects were funded with government money through Natural England, which meant that match funding from local authorities or other government organisations such as the Forestry Commission was ineligible. The cash element could be matched by the Pang, Kennet and Lambourn Valleys Countryside Projects (FWAG) funds, private and other charitable trust funds, as well as European funding. In-kind contributions from volunteers could also count as match funding, up to 25% of the total project cost.

Funding from the Friends of the Pang, Kennet and Lambourn Valleys (now the West Berkshire Countryside Society) and another charitable trust with an environmental interest were key to providing the cash match funding. Where the project funded capital items on private land, a contribution was sought from the landowner, which ensured landowner buy-in to the project.

## **2.4 Project structure**

The Pang, Kennet and Lambourn Valleys Countryside Projects (FWAG) was also the lead partner because it was part of the national farm conservation charity, the Farming and Wildlife Advisory Group and the local Berks, Bucks and Oxon (BBO FWAG) group and had good links with local landowners, woodland owners, volunteer groups and access to conservation management tools. In this role, it was responsible for pulling together and submitting the grant application, receiving the grant money from Natural England and other grant-giving bodies, making the quarterly or biannual claims, and reporting to the Pang, Kennet and Lambourn Valleys Countryside Projects Steering Group, Natural England and BARS (Natural England's Biodiversity Action Reporting System).

### **Project steering group**

Although there was no specific steering group for the BeWILD Project, there was a steering group for the Pang, Kennet and Lambourn Valleys Countryside Projects (FWAG), which comprised representatives from West Berkshire Council, Environment Agency, Natural England, FWAG, Friends of the Pang, Kennet and Lambourn Valleys, Bucklebury Heathlands Group, Pang Valley Conservation Volunteers, John Simmonds Trust and local landowners, to whom reports were presented on the progress and achievements of the BeWILD Project at their quarterly meetings.

### **Project partners**

Given the breadth of geographical area and range of management topics covered by the BeWILD Project, it was reliant on a strong partnership to deliver the project. The Project partners included:

- Pang, Kennet and Lambourn Valleys Countryside Projects (FWAG) provided the Project lead, financial administration and reporting, as well as officer time to deliver the Project.
- TVERC provided officer time to co-ordinate the woodland surveys and species work, organise survey volunteers, as well as receiving ecological data and presenting at workshops.
- Forestry Commission were involved at the inception of the project. Although the Forestry Commission were not able to be a financial partner because they are a government organisation, they were very much a project partner. They provided officer time and support, some site-specific management and grants advice, photos

for promotional material, aided with the distribution of workshop and events invitations, and supported the delivery of training workshops and events.

- Thames Valley Energy/Forestry Commission collaboration. The projects' contact with Gillian Alker proved vital in identifying a suitable woodfuel boiler project site.
- Butterfly Conservation Society were delivering a South East Woodlands Project concurrently with BeWILD, so were happy to provide training in Berkshire free of charge as part of their project.
- West Berkshire Council, as woodland owners and a planning authority, provided long term support for the Pang, Kennet and Lambourn Valleys Countryside Projects (FWAG), although could not directly finance the Project.
- Wokingham District Council were a woodland owner and planning authority, supporting volunteers undertaking woodland management.
- Friends of the Pang, Kennet and Lambourn Valleys provided specialist volunteers in woodland archaeology and veteran trees as well as publicity and fundraising support. Together with the Pang Valley Conservation Volunteers, who provided a regular team of skilled volunteers to carry out woodland management work, these two groups are now part of the West Berkshire Countryside Society.
- Berkshire Bird Atlas group assisted in matching funds for bird boxes
- Bat Conservation Trust supported our bid for Countdown 2010 funds.
- Mammal Society were keen to help support the start up of a Berkshire Mammal Group and provide volunteer recorders.
- BTCV (now TCV) supported the project and provided leaders and volunteers (at a daily rate) to help carry out practical woodland management tasks.
- BBOWT supported the project and provided venues and leaders for site visits during training workshops.
- Woodland owners were vital in providing venues for training workshops and practical conservation work, as well as being the recipients for training days.

## **2.5 Project delivery**

With many project partners and groups involved it was important to set the roles of how and by whom the project would be managed. The BeWILD Project was delivered on a day to day basis, including the financial and reporting duties, by the project manager of the Pang, Kennet and Lambourn Valleys Countryside Projects (FWAG) with the assistance of TVERC to make sure that annual targets were met. Broadly speaking, the Pang, Kennet and Lambourn Valleys Countryside Projects (FWAG) organised the woodland management work delivered by conservation volunteer tasks and contractors, as well as the promotional material, training workshops and events, whilst TVERC organised the woodland surveys, survey training and nest box erection. Regular updates were reported at the Berkshire Nature Conservation Forum (BNCF) and Pang, Kennet and Lambourn Valleys Countryside Projects (FWAG) steering group meetings to ensure all partners were kept informed and could feed into the planned activities.

## CHAPTER 2 SUMMARY SECTION

### SUCCESSSES & ACHIEVEMENTS: What worked well

- The very positive outcome focus of the Countdown 2010 Biodiversity Action Fund meant that it was able to accommodate various changes regarding delivery, including changes to the main delivery officers, volunteer contributions, maternity leave and the employment of an environmental consultant to continue the work, as long as the outcomes set out in the proposal were being achieved. The use of two experienced project managers probably benefited the Project in the long term though, as they were able to call upon their experience and contacts in the area to deliver the Project, as opposed to bringing in a new project officer or using less experienced staff.
- The greatest success though was the bringing together of various partners, utilising the strengths and expertise of the various organisations to support the project. This enabled the Project to access up to date information on woodland grants and other woodland projects, and to deliver a consistent message to woodland owners, managers, contractors, volunteers and professionals.
- Working with partner organisations enabled the BeWILD Project to identify opportunities where it could help add value to existing and new woodland projects. In particular, working with the Forestry Commission and Thames Valley Energy helped identify a new woodfuel boiler project that would benefit from the BeWILD Projects' involvement.

### PROBLEMS & LIMITATIONS: What could have worked better

- There was a relatively short time frame to define the Project outcomes and produce the budget, although there was no requirement from the Countdown 2010 Biodiversity Action Fund grant to provide three quotes when costing items. Even more planning and officer time is necessary if the grant you are applying for requires quotes for work or detailed programmes of work on specific sites up front as part of the application.
- Then there were several unplanned issues that changed the Project expenditure after the grant had been awarded. The first was a delay in the start of the Project; it was given the go ahead in October 2008, half way through the first year of funding, and we were encouraged to spend a whole years' funding in six months, ie by the end of the financial year. The timing of the project approval meant that we had missed the first years' survey season (woodland surveys are most productive in the spring), but we were still able to carry out the winter woodland management work.
- A major limitation occurred when organisational changes to the structure and funding within BBO FWAG and TVERC meant that the Project work had to be delivered by the existing managers rather than the planned project officers. This meant that there was less time available to deliver the project because in both organisations the managers were already committed to other work. The amount of time spent on the BeWILD Project was reduced to one day per week by each project manager, reduced from a proposed four days a week in total, but the staff costs were higher and an environmental consultant was also brought in to help deliver the project. Fortunately the Countdown 2010 Biodiversity Action Fund was flexible

enough to accommodate these changes. It was up to the project managers to liaise regarding ecological survey work, management requirements, the training programme and to deliver the outcomes in the time and budget allowed. As the Pang, Kennet and Lambourn Valleys Countryside Projects (FWAG) only worked in West Berkshire, it largely fell to TVERC to co-ordinate work in East Berkshire with the main partners such as Wokingham District Council and the Berkshire Nature Conservation Forum (BNCF).

- Another factor that affected the final balance of the Project accounts was the initial mistake when putting the bid together regarding the volunteer contribution. Volunteer time had been included as an in-kind contribution, but not as a cost as well, so the quarterly claims had to be adjusted to reflect this, and so skewed the final Project expenditure against the budget.
- In hindsight, given the level of funding and resources available, spreading the Project across the whole of Berkshire was possibly too ambitious and promoted a broad but shallow approach across the county.

## **FINDINGS & RECOMMENDATIONS: Lessons learned**

### **TOP TIPS FOR WOODLAND PROJECTS**

#### **Funding recommendations**

- When making funding applications, the most important thing to remember is to highlight those elements of the project that will most closely deliver the outcomes that the funder desires.
- Check the source of the grant fund ie local government, government, European, as this often has implications for the source of eligible match funding.
- Clarify whether the grant you are applying for will include volunteer contributions (include professional input and meetings as well as practical work) and how that they are to be accounted for.

#### **Project delivery recommendations**

- Take some time to work out when a project will start in relation to the grant application timetable, so that the timing of work is taken into consideration, eg winter work such as tree planting and coppicing, the spring surveying season, and avoiding the bird breeding season when hedgelaying or coppicing.
- A partnership approach adds strength and depth to a project, as long as the reporting mechanisms and lines of communication are clear.
- Projects that are able to link ecological surveying, monitoring and practical work are more ecologically sound.
- Make sure that responsibility for project leadership, practical elements, co-ordination, financial responsibility, reporting and administration is clearly defined.

### 3. WOODLAND SURVEYS

#### 3.1 Establishing a woodland habitat survey methodology

The starting point for the BeWILD Project was an assessment of the existing woodland habitat to help quantify the issues and realistic targets. The main authority on ancient woodland habitat is the Forestry Commission's Ancient Woodland Inventory. However, following local reviews in Sussex and Kent, by Natural England in partnership with local planning authorities, inaccuracies of approximately 20% were found in the original Ancient Woodland Inventory<sup>4</sup>. TVERC, the local record centre for Berkshire, had been undertaking extensive habitat mapping, supported by Local Wildlife Site surveys to improve the records on the location and relative quality (in terms of ancient woodland indicators (AWIs) and condition) of UKBAP woodlands. The mapping and surveys suggested that many of the woodlands in the county which were smaller than 2ha also had potential to be ancient semi-natural woodland (ASNW).



Ancient woodland indicator plants: Ramsons (wild garlic) and bluebells

©Greenaway Collections and Bluebells ©Blue Sky Images/North Wessex Downs 2011

A desk-based study identified many potential UKBAP woodlands which required further surveys to record the ancient woodland indicators and other features in order to determine their status. A small project which was funded by one Berkshire Unitary, Wokingham Borough Council, and undertaken by TVERC, looked to use the Ancient Woodland Inventory methodology to check the extent and location of the original woodlands recorded as ancient, and map and define the woodlands smaller than 2ha that were highly likely to be ancient. This methodology used original Ordnance Survey maps called Epoch 1, Roche Maps (16th century historic maps and woodland flora information; see [Forestry Commission website](http://www.forestry.gov.uk/forestry/INFD-8VPJFD) for more details <http://www.forestry.gov.uk/forestry/INFD-8VPJFD>). This process

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<sup>4</sup> At the time of this project the Ancient Woodland Inventory had not been updated since the initial project in 1981, except to match the boundaries in original paper maps to Ordnance Survey digital reference in 2004. The Forestry Commission and Natural England had started re-evaluating the ancient woodland resource in several English counties, however this was only updated in Berkshire in 2011.



added approximately 18% to the known ancient woodlands in the Unitary, suggesting that many more of the counties' smaller woodlands may also be remnants of ancient woods.

This gave validity to the habitat surveying methodology that TVERC was using on Local Wildlife Site woodlands, to determine their woodland structure, condition and number of ancient woodland indicator plants, and suggested that many more of the woodlands mapped as UKBAP may also be ancient, even if not on the official Ancient Woodland Inventory. This survey methodology was therefore used during the BeWILD Project. This allowed us to concentrate our efforts on those woods which were most likely ancient semi-natural woodland.

### **MAP 3: BeWILD WOODLANDS** (see overleaf)

#### **Woodlands surveyed by the BeWILD Project**

Botanical and woodland condition surveys carried out by TVERC.

## **3.2 Woodland habitat surveys**

The aim of the surveying work was to target woodlands already identified as important at a county scale in the Local Wildlife Sites Project (LWS). This strategy brought the buy-in and interest of the six Local Authorities in Berkshire in the BeWILD Project. The benefits of using the existing LWS project also ensured that the surveys and work undertaken, following the standardised methodology, could then be passed through the formal LWS Selection Panel process, allowing the woodlands confirmed as ASNW to be protected by local planning policy. As we were in discussions with Natural England it was intent that this work could then also be used once the Ancient Woodland Inventory was being updated for Berkshire.

All LWS surveys were undertaken using the Extended Phase 1 survey technique, which consists of a randomised walk throughout the site (including all habitats present), recording:

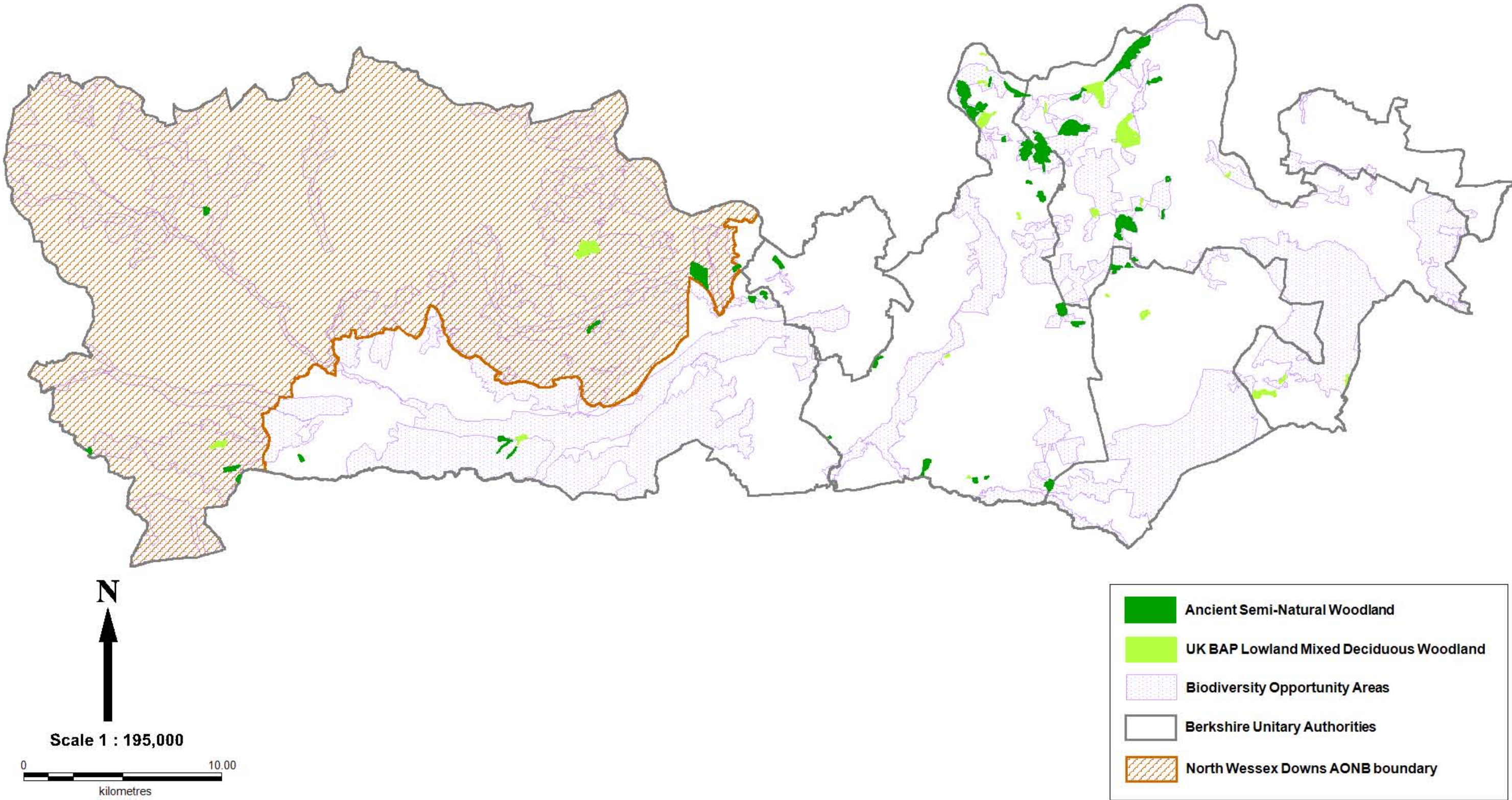
- all the relevant statutory and non-statutory designated sites and features of ecological significance within the site and its surroundings
- recording and mapping the broad habitat types within the site
- assessing the potential for the presence of protected species and species of principal conservation importance
- indicating where potential ecologically harmful activities have taken place and suggestions on mitigation

The first step in the survey process is to prioritise the sites. This was done from several perspectives.

- Advice from the Local BAP and Planning Authorities where land use change or other processes may have affected the woodlands.
- Woodlands identified in the BOA process.
- Woodlands not previously surveyed before, and potential ASNWs identified during the desk based study.
- Proximity to key woodlands of conservation benefit to help reconnect the landscape.
- Number of threatened species recorded in the area linked to woodland habitats.

Once the sites had been selected, the next step was to find the landowners or managers in order to seek permission to survey. Using the Local Wildlife Site process gives the contracted surveyors permission of entry to existing LWS if the Local Authority gives its' consent.

**MAP 3: BeWILD WOODLANDS**  
Woodlands surveyed by the BeWILD Project



However, as the BeWILD Project was about building relations, trust and wanting the landowners to engage with the conservation community, this was not an option we chose to use.

In order to find the woodland owners, the first step was to check the Local Wildlife Site register and the Local Record Centre and see if any contact details were held. If partner organisations had contact information, they were asked to forward the LWS information and surveyors' contact details to the landowners. If there was no initial information to go on, neighbours previously contacted were asked if they knew the landowners. A search of the Land Registry also helped for property that had changed hands in the last 50 years. If no information had been found, a letter was sent out to the surrounding residences, particularly farms with commercially available addresses, with a map and information about the survey and the BeWILD project.

From the initial list of potential woodlands to survey, approximately 30% of the woodland owners were identified, contacted and gave permission, and had subsequent surveys carried out on their woodlands. The main issue was gaining landowner permission as discussed in later in this section.

### **3.3 Scope of TVERC advice offered**

After the initial survey of the LWS woodland had been undertaken, the TVERC surveyor made the assessment on whether the woodland was ASNW (meeting the minimum requirements of the Natural England and Forestry Commission agreed criteria). Where the sites were provisionally identified as ancient, the landowners were then contacted with the full survey, highlighting the areas of high biodiversity interest as well as any disturbance or areas of deterioration

The landowners were sent further information to stimulate their interest and encourage and support better management for wildlife, or an offer to provide advice and help with woodland management. This information included:

- the BeWILD Project leaflet
- details of any potential funding they may be eligible for with regards to woodland management (depending on the area this would be in part be from the BeWILD Project itself and the Forestry Commission) and,
- asked if they would be interested in further protected species surveys.

One of the key areas for us in this Project was to link active conservation groups with new sites of interest, to allow further survey and potential monitoring or volunteer management. This worked well in areas with established volunteer networks, such as West Berkshire where the Pang, Kennet and Lambourn Valleys Countryside Projects (FWAG) had a strong and close long-term relationship with the Pang Valley Conservation Volunteers and Conservation in Reading on Wednesdays (CROW), but was slower to promote and establish in the eastern half of Berkshire.

### **3.4 How the survey information helped the BeWILD Project**

The surveyors, when gaining access to a woodland site, would try and engage the landowner to assess their interest in the management of their woodland for conservation purposes, and highlight the potential incentives and grants available.

Landowners had a range of views on the woodlands they owned, from recognising them as a potential capital asset or amenity value to understanding and enjoying the ecological significance of them and being custodians of a rich biodiversity resource. The survey, in terms of the time the woodland owner spent with a surveyor and the subsequent report, helped to highlight key features and occasionally stimulated the more engaged woodland owners about ways to enhance and improve their woodland. These were special cases, where the people already had a great appreciation for their woods and simply wanted to help improve them. It was a priority to get these owners to think about Forestry Commission EWGS grants or allowing volunteer work parties to take part in woodland management work. Through the combined efforts of the project officers, volunteer groups are now working in several such woods where the owners, volunteers and wildlife all mutually benefit. See Chapter 6.4 for successful engagement projects that resulted from the initial LWS surveys.

Where the woodland was not part of a larger estate, the focus was often on how to make the woodland management more financially viable. These woodland owners were however the target audience for the BeWILD Project in terms of stimulating a new supply chain for woodland products, and the principal way that a project like BeWILD could have a lasting effect on woodland management and condition.

With consent from the landowners, we kept their contact details to invite them to further training workshops and events. Where possible we encouraged the keen owners to approach the Forestry Commission to discuss further help in developing a woodland management plan and potential grants through the English Woodland Grant Scheme (EWGS) to improve the condition of their woodland.



## CHAPTER 3 SUMMARY SECTION

### SUCSESSES & ACHIEVEMENTS: What worked well

- Using the tested and standardised method of the LWS programme worked well in Berkshire. It allowed surveyed sites to be considered for LWS status and engaged the Local Authorities with the Project, meaning more sites could be surveyed than just those funded through the BeWILD Project.
- Access to the Local Wildlife Site register at the Local Record Centre enabled us to see if any contact details were held for target woodlands landholders.
- 125 woodlands were surveyed in total throughout the course of the BeWILD Project, amounting to 1,780ha, nearly doubling the original target of 1,000ha.
- Having a leaflet for the BeWILD Project and the support of the LBAP partnership meant that surveyors acted as a one-stop shop, with landowners being given all the necessary and relevant information on woodland management for wildlife by them, rather than being contacted by multiple organisations with potentially different agendas and advice.

### PROBLEMS & LIMITATIONS: What could have worked better

- **Gaining access and landowner consent**  
One of the major issues in undertaking the surveys was first to identify woodland owners and then to gain permission to undertake the surveys. As this Project focused on the existing LWS sites, this was a double-edged sword. On the one hand, this allowed us to use existing landowner contact details, however on the flip side there was often distrust of the system, that some viewed as Local Government interfering with their land/private property. However, being part of the wider LBAP process and incentives helped to reduce this. On the smaller or subdivided woodlands, identifying the woodland owners could be difficult and very time consuming. Some woodland owners were never traced. Unfortunately, the Project rarely gained permission to forward woodland owner details to the local Forestry Commission officer or other bodies.
- **Getting people on board with the Project**  
Issues of not being able to share data with regards to private landowners' details reduced our ability to work collaboratively on woodlands, where each project party had valuable information on active landowners or where some works had already been supported by Forestry Commission grants. The onus had to be put back on the landowner to make contact with the other party. To help get around this problem, the LBAP group and the BeWILD Project set up a small series of Woodland Owner Days, as discussed in Chapter 4.2.

## FINDINGS & RECOMMENDATIONS: Lessons learned

### TOP TIPS FOR WOODLAND PROJECTS

#### Survey recommendations

- Find out the current baseline habitat information and the gaps in knowledge.
- Investigate if any scoping projects or works have been done to fill these gaps.
- Carry out woodland surveys using existing accepted methodology; ensure that these will be comparable to any past work but also meet national criteria.
- Engage all the conservation partners early on to help prioritise the sites to be surveyed and ascertain how you will collate and use landowner contact details.
- Start the process of finding and contacting the landowners before the survey season to ensure you have enough sites to go to.
- If there was no initial information to go on, contact neighbouring landowners for leads
- Search the Land Registry for property that has changed hands in the last 50 years.
- If still no information is available, send a letter sent out to the surrounding residences, particularly farms with commercially available addresses.
- Promote the project and what it hopes to achieve, as this is often the initial contact with the project for a woodland owner. You need to have literature and details about what the project can offer them if they get involved.



## 4. PROJECT PROMOTION AND TRAINING

### 4.1 Promoting the BeWILD Project

The success of every new Project is dependent on getting the word out there; letting people know that the Project exists, what its' aims and objectives are and what it hopes to achieve. It also needs to convey how and in what time frame these objectives will be delivered, as well as what the Project has to offer its' target audience, what it can provide or what works it can fund and for whom.

Without sites to work on, people to advise or train, a project cannot succeed or achieve its' aims, so it is crucial to promote the Project and make contact with those you want to engage in the Project.

#### Promotional mechanisms used by the BeWILD Project

##### 4.1.1 Printed Material

- **Letters and Invitations:** Personal invitations were sent out advertising the training workshops and woodland events.
- **Newsletters:** The Pang, Kennet and Lambourn Valleys Countryside Projects (FWAG) produced a quarterly newsletter called Upstream, which was sent out to Friends of the Pang, Kennet and Lambourn Valleys Countryside Projects (FWAG), farmers, Parish Councils and West Berkshire councillors, and distributed to public places such as council offices, libraries and tourist information offices with 1500 copies produced and distributed each quarter. The TVERC newsletter and parish newsletters were also used to provide Project updates and advertise public events respectively.
- **Emails:** Regular electronic updates and reminders were sent out by one of the Friends to the Pang Valley Conservation Volunteers informing them of the latest volunteer tasks, training workshops and events. Emails were also sent out to all farmer and woodland contacts in Berkshire by FWAG as a key means of advertising training workshops and events.
- **Project leaflet:** A full colour advisory leaflet promoting the BeWILD Project's aims and objectives, and outlining the key elements of woodland management for wildlife was produced, with 2000 copies printed. It was initially sent out to all known woodland owners and managers in Berkshire, which totalled approximately 600, was given to all woodland owners who had surveys carried out, and was made available at all of the training workshops, woodland events and public events. The BeWILD Project woodland management for wildlife leaflet can be found in Appendix B.
- **Interpretation Panels:** A series of seven interchangeable full colour A1 interpretation panels printed as flexible posters were produced illustrating various elements of woodland and hedgerow management for wildlife. These were used as a mobile display and put up during talks, training workshops, woodland events and at public events.
- **Postcards:** A postcard highlighting key ancient woodland species called 'Have you seen me?' was produced by the Berkshire Nature Conservation Forum, with a contribution from the BeWILD Project. On the reverse was a small table for members of the public to record the date and location where these species were seen.

#### **4.1.2 Media**

- **Websites:** The Friends of the Pang, Kennet and Lambourn Valleys Countryside Projects (FWAG) and TVERC websites were used to advertise BeWILD volunteer tasks, training workshops, woodland events and public events
- **Newspaper articles and press releases:** Articles and press releases were printed for free in the local newspapers, the Newbury Weekly News and the Reading Chronicle.
- **Radio:** Local radio stations were used to advertised events and BBC Radio Berkshire broadcast live from one of the Hedgelaying Competitions and the final Woodfuel Event.

#### **4.1.3 Public events**

- **Hedgelaying Competition:** A BeWILD Hedgelaying Competition was organised and held at Pangfield Farm, Stanford Dingley in March 2009 and 2010, with ca. 15 competitors per year from across southern England. This was a high profile event, promoting the Project and the host organisation FWAG to the wider public across the county and southern England, being the only hedgelaying competition in Berkshire.
- **Public Events:** The BeWILD display and Project officers annually attended the Royal Berkshire Show, the Berkshire Recorder's Day, the Volunteer Day in Newbury, the North Wessex Downs AONB Forum and other events.

#### **4.1.4 Project updates**

- **Meetings:** The progress and achievements of the BeWILD Project were reported quarterly to the primary funder, Natural England and the Pang, Kennet and Lambourn Valleys Countryside Projects (FWAG) steering group, as well as giving presentations to the Berkshire Nature Conservation Forum and regional BAP meetings.

### **4.2 BeWILD training and events**

The BeWILD Project delivered training and events in a number of ways to target a range of audiences, all involved woodland management but at different scales and with different priorities.

- Training was delivered in three formats: Training workshops; Woodland events and Woodland owner days.
- The training and events were organised by the Pang, Kennet and Lambourn Valleys Countryside Projects (FWAG) and TVERC.
- The training and events were provided by a mixture of Project Officers, paid trainers, facilitators and presenters, project partners and other conservation organisations and volunteers.
- The training was generally held on farms, in barns and village halls, and in woodlands across Berkshire.
- All of the training workshops and woodland events organised by the BeWILD Project were free, often with lunch provided.
- Overall the feedback from the training and events provided was good, with some very positive feedback from some participants who appreciated the timber quality and marketing aspects of the Coppice Product Workshop. There were however some comments on the quality of catering and use of disposable cups and the chilliness of some of the on-farm venues. Others would have liked more handouts and identification cards, but given the limited budget and that all the training provided was free, expectations should be in line with these factors.

#### **4.2.1 What training was provided?**

- **Training workshops:** Several training workshops were organised each year for volunteers, woodland owners and managers. They included practical woodland management skills training workshops in coppicing and hedgelaying, classroom-based woodland ecology and woodland management for wildlife training workshops with afternoon site visits to woodlands, and practical woodland ecology training in surveying and nest box erection. These workshops provided a practical hands-on means of delivering training, and improving the skills and knowledge base of local volunteers and woodland owners and managers.
- **Woodland Events:** A more structured woodland event, more akin to a seminar or one-day conference, was organised every year specifically for woodland owners and managers. These woodland events provided a networking opportunity and support for local woodland owners, managers and contractors, in the marketing of timber products and the development of woodfuel.
- **Woodland Owner Days:** In partnership with the Berkshire Woodland LBAP group, TVERC and BNCf, BeWILD organised a small series of Woodland Owner Days in the eastern half of Berkshire, which focussed on specific woodland BOAs (Biodiversity Opportunity Areas). Each partner invited their own woodland contacts to discuss the importance of woodland biodiversity, appropriate woodland management for wildlife and the grants and incentives available. These Woodland Owner Days provided a forum for discussion and idea-sharing on all matters related to woodlands and their management.



Woodland owners look on at the Hurdle making demonstration at the Coppice Product Marketing Event, January 2010 and the Timber processing demonstration at the Woodfuel Supply Chain Event, March 2011 © Meg Chambers

#### **4.2.2 Who provided the training?**

- **Project Officers:** The BeWILD Project Managers from FWAG and TVERC supported or lead a lot of the training, particularly the ecological training such as moth trapping and dormouse surveying, and generally facilitated the events.
- **Paid trainers:** All of the practical hedgelaying and coppicing training workshops were lead by Clive Leeke, a professional hedgelayer, with support from the Project Officers. At the Coppice product workshop, coppice craft demonstrations were given by Bob Boulton, a master thatcher who demonstrated thatching spar-making, Mick Walters of Mick Sticks, a hurdle maker and Clive Leeke, with William Hamer, a forestry consultant facilitating the event. Dick Greenaway delivered training on woodland archaeology during the ancient woodland indicator species training

workshops. Martin Harvey an ecologist and local Moth Group member lead the Drab Looper moth training and survey sessions.

- **Project partners and conservation organisations:** Many of the presenters were paid members of staff from other conservation organisations who provided valuable specialist expertise from butterflies to boilers, and were able to deliver training within the remit of their own projects or work, and so without needing to charge the BeWILD Project. These organisations included the Forestry Commission and their Woodheat Solutions Project, BBOWT, Butterfly Conservation, Thames Valley Energy and Oxford Renewables.

The Forestry Commission were very supportive at all of the classroom-based training workshops and events, aiding with the distribution of workshop and events invitations and giving presentations and grant and felling licence advice. The Seasoned Timber Company, a local firewood merchant and Hillfields Farm, a local woodchip supplier provided demonstrations of their timber-processing machinery at the Woodfuel Supply Chain event without charge, and the Woodland Trust provided promotional materials for a family Winter Woodland Walk event.

- **Volunteers:** Several volunteers were involved in delivering the training, and various farmers and woodland owners provided woodland venues for the site visits during woodland events, and for the coppicing and hedgelaying workshops, with the benefit of having some work carried out.

### **Summary of BeWILD's training workshops and events 2008-2011**

- 10 Practical woodland management skills training workshops: coppicing and hedgelaying
- 7 Classroom-based woodland ecology and woodland management for wildlife training workshops with woodland site visits
- 4 Woodland species survey training workshops for dormouse and drab looper moth
- 3 Timber marketing and woodfuel events

543 people attended 26 events organised over the 2.5 years

8-9 events were organised each year with 21 attendees at each event on average

The average number of attendees increased from 20 to 22 per event over the life of the Project.

Full details of the training workshops and events organised by the BeWILD Project can be found in Appendix C, BeWILD Training workshops and events 2008-2011.

## CHAPTER 4 SUMMARY SECTION

### SUCCESSSES & ACHIEVEMENTS: What worked well

- Local Farmer Champions offered to send out the invitation for the first BeWILD event, which was well received by other woodland owners and possibly got a better response rate than if coming from an unknown conservation project officer.
- The practical woodland management skills training workshops were well attended by conservation volunteers and proved to be a popular way to improve skill levels amongst them.
- The networking potential of the woodland events enabled links to be made between woodland owners or managers and craftsmen, woodland management contractors, firewood merchants and woodfuel agents, connecting suppliers and end users of woodland products.
- For example, the hedgelayers Clive Leeke was introduced to BBOWT's Berkshire Reserves Manager and identified the BBOWT reserve Moor Copse as a potential source of stakes and binders. Mick Sticks, a hurdle maker was introduced to Charles Flower, a woodland owner who is restoring his coppice with the aim of producing high quality hazel rods. The forester for the Eling Estate was introduced to the woodfuel boiler owners at Manor Farm, Hampstead Norreys with discussions over potentially supplying woodfuel to them in the future.
- The Coppice Products Marketing Event attracted a significant audience of 36 woodland owners and managers, despite snowy conditions, because this event was held at a quiet time of the farming year and took a different approach to many other workshops, with demonstrations looking specifically at the range and quality of timber products and markets, so that there was a direct link between woodland management and the economic viability of management, a commercial angle.
- The BeWILD Project leaflet has been well received, with organisations in Buckinghamshire and Oxfordshire such as the Sylva Foundation asking for copies.
- The Upstream newsletter and the Friends' emails to the Pang Valley Conservation Volunteers proved to be very successful means of communicating with the target audience, with the newsletter updating woodland owners on BeWILD Project progress and achievements, and both the newsletter and emails advertising forthcoming volunteer tasks and training workshops.

### PROBLEMS & LIMITATIONS: What could have worked better

- No one partner organisation held a full contact list of woodland owners across Berkshire and due to data protection legislation, the Project partners could not share their contacts databases. However, good co-ordination between project partners enabled us to overcome this significant limitation, with the BeWILD Project leaflet and invitations for workshops and events being sent from FWAG, to the Forestry Commission and TVERC to forward on to their respective woodland contacts. This worked well and ensured we made full use of all the contacts held for the county.
- An initial leaflet outlining the BeWILD Project, its aims and objectives, the services and work it could offer and the timescale of the available funding sent to all woodland owners and managers in Berkshire would have sent a clearer more direct message to the target audience. There was however only sufficient budget to

produce one Project leaflet, so a woodland management for wildlife leaflet with an extended shelf life was produced which would continue to be relevant throughout and beyond the life of the Project.

- All of the training workshops and woodland events organised by the BeWILD Project were free, often with lunch provided. This did however mean that there was often 2-3 people who had booked onto an event who didn't end up coming, perhaps because they hadn't had to financially commit to it. This did upset some of the woodland owners who were hosting training events.
- In an ideal world, it would be great to carry out followup surveys and get feedback from those who attended BeWILD training workshops and events 1-2 years after the Project finished, in order to ascertain whether attendees had implemented any of the training or management recommendations, although it is not clear how this would be paid for.

## **FINDINGS & RECOMMENDATIONS: Lessons learned**

- Further use of Forestry Commission forums, forestry networks such as Royal Forestry Society, Small Woods, Sylva and the local farming press may have enabled the Project to reach a wider spread of small and large woodland owners.
- It is recommended that woodland management workshops and events are organised over the autumn and winter, during the quiet period of the farming year between October and March, when they were better attended. Woodland wildlife workshops by their nature are more appropriately held in the spring and summer, between April and August, but where possible they should avoid busy periods such as lambing and harvest.
- Training workshops and events were tailored for the target audiences and provided a range of training opportunities varying in subject, duration, location and time of year.
- It seems that there was an unmet demand for timber marketing events, and events where machinery rings and woodfuel co-operative membership could be discussed and developed. These events should be of interest to small and large woodland owners alike, as everyone is interested in seeking new ways to derive income from their woodland.
- Foresters from large estates and woodland management contractors generally have a higher skill level and knowledge base, and are more likely to be interested in the commercially focussed marketing and woodfuel events, rather than practical woodland skills workshops.
- It is recommended that a minimum charge is made for training workshops and events depending on the level of funding available. This may vary from £5 to cover light refreshments, £15 for a day woodland management training workshop to £25 for a day woodland event or conference, with several specialist speakers. This would ensure commitment from attendees, as well as raising expectations of the quality of the event, so that the training opportunity or event is valued. Concessions may need to be considered for volunteers.

## TOP TIPS FOR WOODLAND PROJECTS

### Promoting a new woodland project

- Identify the target audience: Ancient woodland owners and managers
- Work out how to contact them, working within data sharing restrictions on landowner details: Invitation letters and workshop fliers sent to all the farmers, woodland owners and woodland managers in Berkshire on the FWAG database, with additional invites sent to the Forestry Commission and TVERC to forward on to their woodland owner contacts in Berkshire.
- Work out what they need and want, and how to hook them in: From the lack of management being undertaken in many ancient woodlands, we decided to provide training in woodland management, timber marketing and woodfuel.
- Deliver their needs and meet their expectations: Provide programme of woodland management skills training workshops and timber product and woodfuel marketing events.
- Evaluate whether you have met these needs and expectations: Feedback forms, responses at the events and afterwards, and changes in the management of ancient woodlands within the Project area.
- Use a broad brush approach to project promotion using as many forms as possible, for example articles in local press and parish newsletters, and tapping into the networks of other environmental organisations.
- Get the local radio involved in promoting the project, as this is a great way to reach a wide and large audience.
- It is useful to develop a good relationship with the local papers in order that they are happy to publicise projects and events for free.
- Producing a set of roll up A1 posters which can be attached to display boards and used at various events and talks is a smart and cost-effective means of producing a series of interpretation panels: We produced seven interchangeable panels to be used as required depending on the event.

### Providing woodland training and events

- Organise events which will be relevant and of interest to the target audience.
- Organise workshops and events for woodland owners at quiet times of the farming year.
- Organise more events on timber marketing, machinery rings and woodfuel co-operative membership.
- Charge a fair but reasonable amount for training workshops and events.
- Developing good relationships with partner organisations is crucial in seeking their support in the delivery of a varied programme of training within a limited budget.
- It should be noted that for any event, training workshop or volunteer task to take place on a farm or in a wood, the owner does need to have public liability insurance in place.





## 5. ECOLOGICAL BENEFITS OF WOODLAND MANAGEMENT

### 5.1 Woodland management for wildlife

One of the strengths of the BeWILD Project was that it involved close liaison between woodland management and woodland surveying. TVERC co-ordinated and undertook woodland surveys to try and assess the conservation status of ancient woodlands in Berkshire. The surveys recorded the species and structure of a woodland and in particular noted tree species and Ancient Woodland Indicator (AWI) plant species. AWI species are those which are closely associated with old stable habitats, such as ancient woodlands, including wood anemone which is a woodland plant tolerant of deep shade requiring damp, nutrient-rich, undisturbed soil found in long established woodlands. There are 98 species of flowers, sedges and grasses that are regarded as AWIs in the south of England, which includes Berkshire<sup>5</sup>.

Many of the species found in ancient woodlands have evolved with the way the woods have been managed over many hundreds of years. To maintain the structure and composition of our ancient woodlands and maintain conditions for biodiversity, management is often necessary. From an ecological point of view however, it is important to ascertain the potential value of the woodland, what woodland habitats we want to restore or maintain as well as the management regime employed, as there may be different ways to achieve that desired condition.

Woodlands that fall out of management are more likely to become dark, enclosed, cold habitats, supporting little regeneration of high forest trees such as oak. Where there is insufficient light for regeneration, it's often the pioneer or weed species such as sycamore or silver birch that regenerate, forming dense stands of uniform size and age trees. The effect of this is to inhibit the shrub layer and ground flora, therefore reducing the diversity and abundance of food and egg laying plants available to other species.



This plantation on an ancient woodland site (PAWS) has a closed canopy with many tall closely-spaced trees and little diversity of structure, ie no shrub layer. If light and warmth can't reach the woodland floor, a dark, cold woodland less favourable for wildlife is created. This often occurs where there is little or no management. ©Butterfly Conservation

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<sup>5</sup> This Table of Ancient Woodland Indicator Plants (AWIs) collated by Keith Kirby, English Nature 2004 can be found in The Wild Flower Key: How to identify wild flowers, trees and shrubs in Britain and Northern Ireland by Francis Rose, Warne Publishers 2006. See also Appendix A, Woodland terms.

During the BeWILD Project we used the woodland ground flora community to inform the management of woodland habitats, and also explored how variations in the plant community can help identify woodland archaeology and past land use. What is clear is that ancient woodland plants and associated fauna are being lost from our woodlands. It was therefore one of the primary aims of the BeWILD Project to address this, as the lack of management in ancient woodlands is one of the main reasons for this loss of biodiversity.

### **Woodland archaeology**

Many ancient woods contain historical and archaeological features such as earth boundary banks and ditches or park pales, saw-pits, old tracks and green lanes, or even Iron Age hill forts and field systems and Bronze Age round barrow burial mounds. Woodland archaeology is valuable in its own right as undisturbed archaeology which has often been protected from cultivation and development by the woodland cover, but it also contributes to the diversity of vegetation, habitats and structure in woodlands.

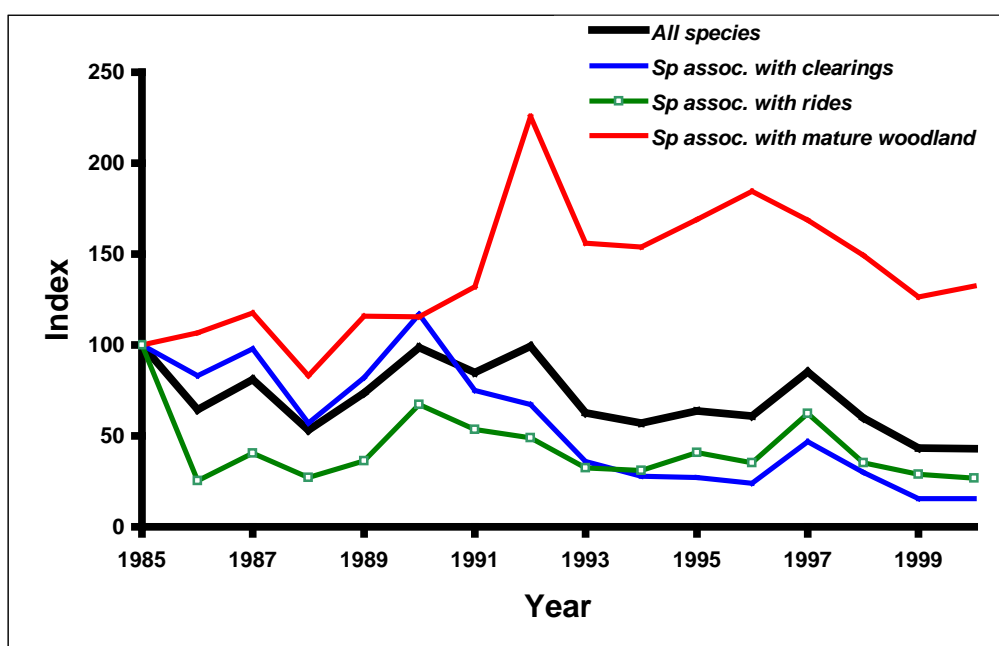
Local woodland historian, Dick Greenaway ran two very well attended woodland archaeology workshops which looked at the link between ancient woodland indicator (AWI) plants and woodland archaeology. Woodland plants can be used to ascertain how long an area has been undisturbed woodland for, as some species, the AWIs will only occur where there has been no disturbance for many centuries. Other species such as dogs' mercury can be indicative of past agricultural use. The distribution of woodland plants and earthworks within a wood can therefore be used to indicate past use and human activity on a now-wooded site over hundreds or thousands of years.



De la Beche park pale highlighted with bluebells ©Greenaway Collections

### **Butterflies as indicators of healthy woodlands**

Research by Butterfly Conservation, that informed the priorities for BeWILD's woodland management work, demonstrates clearly the ecological need for woodland management, as indicated by the dramatic decrease in the abundance of butterfly species associated with open spaces within woods, such as clearings, rides and glades, as shown in Figure 5.1 below. The exception being a peak in numbers in the aftermath of the 1989 storms, which brought down thousands of trees creating glades and open spaces within woods.



**Figure 5.1** Collated indices for woodland butterflies 1985 – 2000, Butterfly Conservation.

Butterfly Conservation’s South East Woodlands Project ran concurrently with the BeWILD Project<sup>6</sup>. The woodland butterfly species of priority conservation concern identified by Butterfly Conservation are shown in Table 5.2 below. The majority of butterflies are typical of mature woodlands, but all of the species require rides, areas of new shrubby growth, dappled shade and warm sun for parts of their life cycle. Virtually all of these species, even those that tolerate shade, were found to be declining.

Species name	Typical of mature woodlands	Typical of coppice & clearings	Typical of rides
Purple Emperor	✓		(✓)
Silver-washed Fritillary	✓		(✓)
White Admiral	✓		(✓)
White-letter Hairstreak	✓		(✓)
Brown Hairstreak	✓		✓
Black Hairstreak	✓		✓
Duke of Burgundy		✓	
Grizzled Skipper			✓
Dingy Skipper			✓

**Table 5.2** Priority butterflies in Berks, Bucks and Oxon, Butterfly Conservation, 2010.

<sup>6</sup> The findings of the South East Woodlands Project are in the Butterfly Conservation report, Landscape-scale conservation for butterflies and moths: Lessons from the UK, 2012. <http://butterfly-conservation.org/files/landscape-scale-conservation-for-butterflies-and-moths-low-resolution.pdf>



Purple emperor butterfly and Drab looper moth ©Butterfly Conservation

### **Woodland management for wildlife techniques**

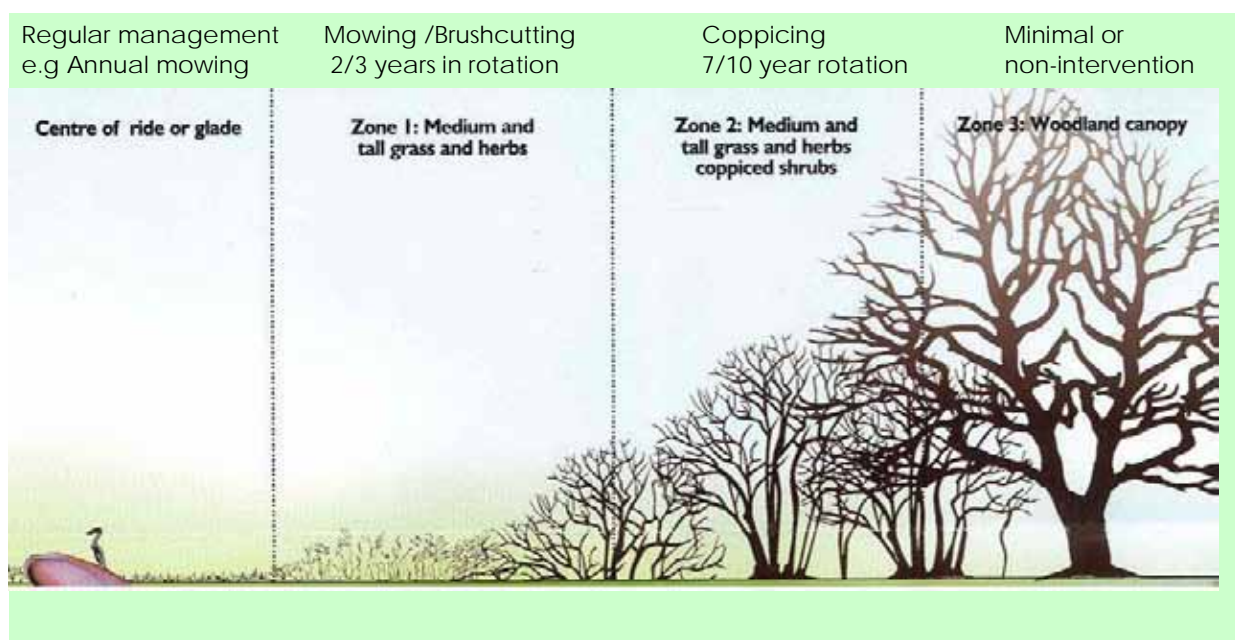
In order to restore and maintain ancient woodlands in Berkshire, the BeWILD Project encouraged management that would improve woodland structure, by increasing the variety of height, density and structure of trees and shrubby vegetation, therefore providing a range of light and temperature conditions within the woodland. Ride management, glade creation and coppicing all introduce light into a woodland, and thereby improve the woodland for wildlife.

The following techniques for increasing light within woodlands were highlighted in the BeWILD training workshops and when undertaking woodland management.

#### ***5.1.1 Woodland ride restoration and management***

Reinstating or creating a network of well structured woodland rides within a woodland opens up the cold, dark and damp centre of a woodland to create wide, light, warm and sunny rides, dramatically improving the nature conservation value of neglected woodlands, because it allows light to reach the woodland floor and valuable and species-rich woodland edge habitat to develop within the woodland. Rides should be a progression from close cropped low vegetation in the centre of the ride, through taller grass and herbs to shrubs and ultimately the tall woodland canopy; see Figure 5.3 below. Rides can be created by felling taller trees, coppicing scrub and hazel coppice stools, and ideally mowing or brushcutting a central strip.





**Figure 5.3** The variation in woodland structure from the centre of a ride to coppice compartment, adapted from John Williams, Forestry Commission. This illustration represents the ideal structure and management for woodland rides, glades, edges and around ponds.

### 5.1.2 Glade creation

Glades also allow light to penetrate to the woodland floor and increase a diversity of structure and species within the woodland providing shelter and food for invertebrates and woodland birds. Glades can be extra wide areas along a ride or pockets within the woodland.



Recently restored wide sunny woodland ride ©Butterfly Conservation and Glade clearance by two volunteers in Winterbourne Wood, as described in the Case Study in Chapter 6.4.  
©Meg Chambers

### 5.1.3 Restoration coppicing

Coppicing is the historical management of woodland tree species of cutting the tree near to ground level to encourage the growth of multiple stems, and dates back many hundreds of years. These were then harvested or coppiced on a rotational basis of 8-15 years, as a sustainable method of small diameter timber production for hurdles, gates, stakes and binders for hedgelaying, firewood and kindling, and crafts such as thatching spars and chair

legs. In Berkshire, it is predominantly hazel which has been coppiced, but also oak, ash, alder and willow.

Areas of old coppice can be identified by mature hazel, ash and oak stools; these are the multi-stemmed bases of the coppiced tree. These areas of coppice have generally been neglected, with the stools having become large and over-mature, shading out ground flora, or becoming weak and dying out because of shading from the woodland canopy, especially as many old coppice sites were planted up with oak standards in the late 19<sup>th</sup> century.

The BeWILD Project re-introduced coppice management on a number of ancient woodland sites where it had been carried out historically. Coppicing these areas allowed more light in, benefiting the shrub layer and ground flora, and providing valuable bird-nesting and dormouse habitat. More detail of the coppice restoration work carried out can be found in the case studies in Chapter 6, and those woodlands where coppicing took place are listed in Appendix D, BeWILD Conservation volunteer tasks 2008-2011. It may take several coppice cycles to bring the coppice back to vigorous growth, and in some woodlands it was necessary to layer the hazel to increase the number of stools in a coupe. In the future, it is hoped that some of these areas could be managed more commercially.

There is no point in trying to restore coppice if the canopy trees are casting dense shade, as any regrowth will be suppressed. Where the woodland canopy is dense, the aim is to reduce the canopy to around 30-40% cover or 30-100 standard trees per hectare. The BeWILD Project was able to fund felling of mature trees in two old coppice woodlands to kick start the coppice restoration process.

Ideally, coppice management should be carried out on a rotation system, by dividing the area within a woodland or along rides into coupes, with one or more coupes cut each year. This creates various stages of regrowth and therefore a diverse age structure, from open glades to dense woodland. This process mimics the stages of natural succession or regeneration in a woodland.



Dark derelict coppice and Open light area of lush coppice regrowth ©FWAG.

These photos illustrate the benefits and impacts of coppice restoration; letting light in, creating a variety of structure and conditions, and stimulating new growth and regeneration, bringing life back into old neglected woodlands.

#### **5.1.4 Coppice stool protection**

The coppiced areas need to be protected from deer and rabbit browsing, otherwise regrowth can be affected or the stools killed if heavily browsed for several years. The BeWILD Project used a number of techniques to protect the stools, with contributions to deer fencing at two sites, and the use of brash to cover the stools in the other woodlands. A range of brash protection techniques have been developed by different volunteer groups over time, which include the brash 'tee-pee' and the 'birds' nest', which were both used by the BeWILD Project. Woven hurdle-type fences or 'doughnuts' around the stool or sheep netting and hazel stakes have been used by other groups with greater financial and labour resources, such as on nature reserves.

In order to limit deer damage, a significant amount of brash needs to be piled back onto the stools, forming a good barrier between the stool and any browsing animal. Sufficient brash is only likely to be available during the initial coppice restoration, and not once in a regular rotation. If an area is successfully coppiced it should achieve regrowth in the first year after cutting from at least 75% of the stems. If vigorous regrowth is not achieved after two years then it is unlikely that the coppice will regrow successfully.



Two different coppice stool protection methods; the tee-pee and hurdle-type ©FWAG.  
Note the flush of ancient woodland ground flora in the aftermath of coppicing in the left hand picture.

#### **5.1.5 Deer browsing pressure**

The deer browsing pressure in a woodland needs to be assessed before any coppicing work is undertaken. Where signs of deer browsing, i.e. a browse line of removed shoots and leaves at around deer height on trees and deer tracks has been noted, a decision needs to be made as to whether it is sustainable to carry out coppicing in the first place. If browsing levels are too high it may be impossible to encourage good regrowth and stools may well be killed off. If there are signs of deer but there is no obvious browse line, then the stools can be protected either by using the coppice brash to cover the stools or by surrounding the coppice coupes with deer fencing.

Of course deer control is the key to the successful regeneration of coppice, but requires concerted efforts over the long term and the co-ordination of neighbouring landowners across a large area to have any kind of impact, particularly on the roaming herds of fallow

deer. We need to remember that when our ancient woodlands were being worked and coppiced at their peak, in the 18<sup>th</sup> and 19<sup>th</sup> centuries, the UK deer population was significantly lower than today. When combined with deer fencing, a fail safe coppice environment can be created.

#### ***5.1.6 The effects of small-scale coppicing***

Apart from the limitations on the pace and area of coppicing which can be achieved with volunteers using hand tools, where only small areas are coppiced each year, there is a greater likelihood of coppice stools being browsed by deer and rabbits and the regrowth being affected or completely prevented. The success of coppice regrowth depends on the deer numbers and browsing pressure. In order to minimise this problem, whatever coppicing is done should be carried out in a consolidated area, perhaps opening up the coupe to the edge of the wood, which will both allow more light in to promote better regrowth and create a greater sense of opening up the area with less places for secretive deer to hide.

Another approach recommended by the Forestry Commission, is to coppice successive small coupes adjacent to one another year on year, providing a new area of tender young regrowth which the deer will browse preferentially, so that the deer browsing pressure is alleviated allowing the previous years' coppice regrowth to eventually get away. This method works better the bigger the coupe sizes, but it is not guaranteed to succeed where deer pressure is high. If these unprotected approaches are adopted, the coppice regrowth should be monitored, and fencing erected if needed.

#### ***5.1.7 Non-intervention areas***

At least 10% of a woodland area should be left as non- or minimal intervention. Areas of over-mature tree and shrub growth are an important part of a diverse woodland ecological system, and are necessary for many woodland species' life cycles. Dark, damp areas of woodland support their own specialist species, so it is important to retain these areas. The BeWILD Project only worked in small areas within woods, ensuring that there would always be non-intervention areas.

#### ***5.1.8 Veteran trees***

Ancient or veteran trees are a feature of Berkshire's ancient woodlands, many of which are old pollards. Veteran trees greatly add to the ecological value of a woodland because of the stable habitat they provide for many other species of plants, animals and fungi, and the presence of dead wood associated with them. These ancient trees should be retained and mature trees identified as veterans of the future. Through the BeWILD Project, some beneficial management for veteran trees was carried out by volunteers creating halos, ie cleared areas around the trees to reduce competition and to show them off as the special trees that they are.





Ancient oak pollard on Ashampstead Common ©Greenaway Collections and  
Weather-beaten standing dead wood ©Forestry Commission picture library

#### **5.1.9 Dead wood**

Dead wood is an incredibly valuable habitat in woodland, as it provides food and shelter for invertebrates, mosses, lichen and fungi, which are very important in recycling the nutrients in a woodland, by decomposing leaf litter and dead animals. Standing dead wood, ie dead trees, aerial dead wood, ie dead branches of living trees found in mature or veteran trees, and dead wood on the woodland floor, all provide habitat for different species and at different stages of their lifecycles. In the same way, it is important to provide an age range of dead wood, ie both recently felled and old rotting piles.

#### **5.1.10 Hedgerows as woodland links and wildlife corridors**

It is important not to view woodlands in isolation, but to look at the surrounding land management in order link and buffer woodlands. This view of woods as 'ecological stepping stones' is part of a strategy to ensure the long term survival of woodlands and the species which depend on them, and also to help woodland species adapt to climate change. Linkages between woods are very important in forming wildlife corridors that enable species to disperse, shelter and search for food.



Hedgerows provide food and shelter for many birds, mammals and invertebrates, and are often used as wildlife corridors between isolated woodlands and areas of scrub. They are used for navigation and as feeding corridors by bats, and as dispersal corridors by dormice between copses too small to support viable populations. ©FWAG



Hedges are a great way of linking woodlands, as they are numerous in Berkshire's farmed landscape, provide ecologically-rich habitat, and are sometimes remnants of ancient woodlands themselves. Ideally, the hedges on any one farm should vary in size, shape and structure in order to provide a range of habitats which will support a greater number of species. The BeWILD Project encouraged the management of hedges by hedgelaying, which was originally used to create stock proof barriers between fields, but is now used to rejuvenate gappy old hedges in decline. It encourages lots of new growth, particularly at the base of the hedge, creating thick, impenetrable corridor habitats providing cover and food for farmland birds such as linnet and yellowhammer, as well as for butterflies and dormice.

The proposed work to improve and reinforce habitat links between ancient woodlands using hedges was difficult to implement in a targeted way in practice because of stretched resources, a lack of authority and landowner co-operation. In addition to the hedgelaying work which the BeWILD Project delivered to improve woodland linkages, the primary mechanism available to the Pang, Kennet and Lambourn Valleys Countryside Projects (FWAG) for buffering and linking woodlands was through DEFRA's agri-environment schemes, the Entry Level Scheme (ELS) and Higher Level Scheme (HLS). The Berkshire FWAG officers were aware of BeWILD's aims, and looked for opportunities to create or manage linking habitats when they carried out ELS and HLS schemes. Any tussocky grass field margins, buffer strips or hedgerow improvements made by this means have not been included in the work achieved by the BeWILD Project.

Although it was the aim of the BeWILD Project to link woods with hedges, it was not within the scope of the Project to extend or link them with new woodland planting, which would enclose the largely open farmed landscape, with detrimental consequences for other farmland wildlife.

#### **5.1.11 Non-native species**

Over the last century non-native species have been introduced or escaped into woodlands. Non-native species such as rhododendron and laurel were introduced to provide cover for pheasant shooting and for their beautiful flowers along woodland rides. They are invasive and quickly out-compete native species, shading out the woodland understorey. At Fence Wood, rhododendron was spreading over a large Iron Age hill fort Scheduled Ancient Monument. After consultation with the forestry manager and English Heritage, BeWILD volunteers were instrumental in clearing some of the rhododendron.

#### **Summary of BeWILD's woodland management for wildlife 2008-2011**

- Dappled light created in ten woods through restoration coppicing, ride and glade creation and ride management.
- Use of coppice products in hedgelaying tasks and two hedgelaying competitions
- Canopy thinning in two woodlands
- Removal of invasive species from four woods including two Scheduled Ancient Monuments

## **5.2 BeWILD protected species work**

### ***5.2.1 Nest box erection and monitoring***

A major part of the BeWILD Project was to improve woodland condition to support some of the more threatened and declining species associated with this habitat. However, the lifetime of this Project, being only 2.5 years, was unlikely to be able to assess any significant improvements in species populations as a result of the management works instigated. Therefore, we decided to concentrate on setting up nest boxes that not only provided additional habitat niches ie shelter for wildlife, but also doubled as a way to monitor use and numbers of target species in the woodlands that the Project had worked in.

This approach also meant that the woodlands chosen for nest boxes had to have understanding and enthusiastic landowners that would allow volunteers to access the woodlands in successive years, in order that the nest box uptake could be monitored. For this reason, the woodlands chosen were mainly on sites with resident volunteers or on land managed for conservation, such as council-owned parks, Wildlife Trust sites or college grounds.

Once the appropriate landowners had been identified, the next step was to review the woodland habitat, how it was being managed and future works planned. This information was then linked to the proposed BeWILD activities and a review of the target species records in the area was carried out. This last step was to determine those sites where it would be most beneficial to erect the bird, bat and dormouse nest boxes. Local naturalist groups such as the Berkshire Bird Atlas Group were contacted for recommendations of where and what type of bird box should be erected. Where we had limited information, such as for known dormice sites in the county, initial studies had to be undertaken first to ensure we targeted realistic areas.

Despite trying to contact the local Bat Group, we failed to stimulate any interest, so rather than find specific bat woodland sites we focused the effort on a few key woodland owners who were happy to work with volunteers and participate in wildlife conservation.

In those woodlands where other management works were planned to improve the overall habitat and encourage wildlife populations, we erected a variety of bird and bat boxes. We also set up dormouse nest tubes that were checked at least once to determine the likelihood of dormouse presence before dormouse nest boxes were erected.

Maps 4 and 5 show examples of woodland sites where a range of protected species work was carried out by the BeWILD Project. Dormouse survey training was also carried out at Manor Farm, Crookham.

**MAP 4: BeWILD PROTECTED SPECIES WORK** (see overleaf)

**Case Study: Manor Farm Woodlands**

Location of bird, bat, dormouse and owl boxes

**MAP 5: BeWILD PROTECTED SPECIES WORK** (see overleaf)

**Case Study: High Wood**

Location of bird and bat boxes

Please note the following applies to the locations given for the dormouse nest boxes: The Habitat Regulations provide protection for certain species and habitats and are based on the European Habitats Directive. It is an offence to damage or destroy dormouse breeding sites and resting places (even unintentionally) or to deliberately disturb, capture or kill dormice.

**5.2.2 The Dormouse: BeWILD's key ancient woodland species**

One of the UKBAP species highly dependent on quality Ancient Semi Natural woodland is the dormouse (*Muscardinus avellanarius*). Mirroring the loss of ASNW woodland, the dormouse was once widespread across much of Britain, and is now mostly restricted to the southern regions of England and Wales. Again this is due to the loss and lack of management of woodlands, woodland fragmentation and loss of hedgerows. Being a small arboreal rodent, the dormouse relies on a wide range of foods that vary seasonally, and needs good connectivity of habitats to move throughout its home range of a network of well-connected dense scrub, richly wooded areas and hedgerows in order to exploit the range of foods. As a female will typically only live in about 1ha, there needs to be enough food types throughout the year to support them. In early spring they feed on flowers, principally hawthorn, honeysuckle, bramble and willow. The older methods of cutting hedgerows and woodland edges on a longer 3-5 year rotation encouraged thicker scrub habitat and more flowering plants.

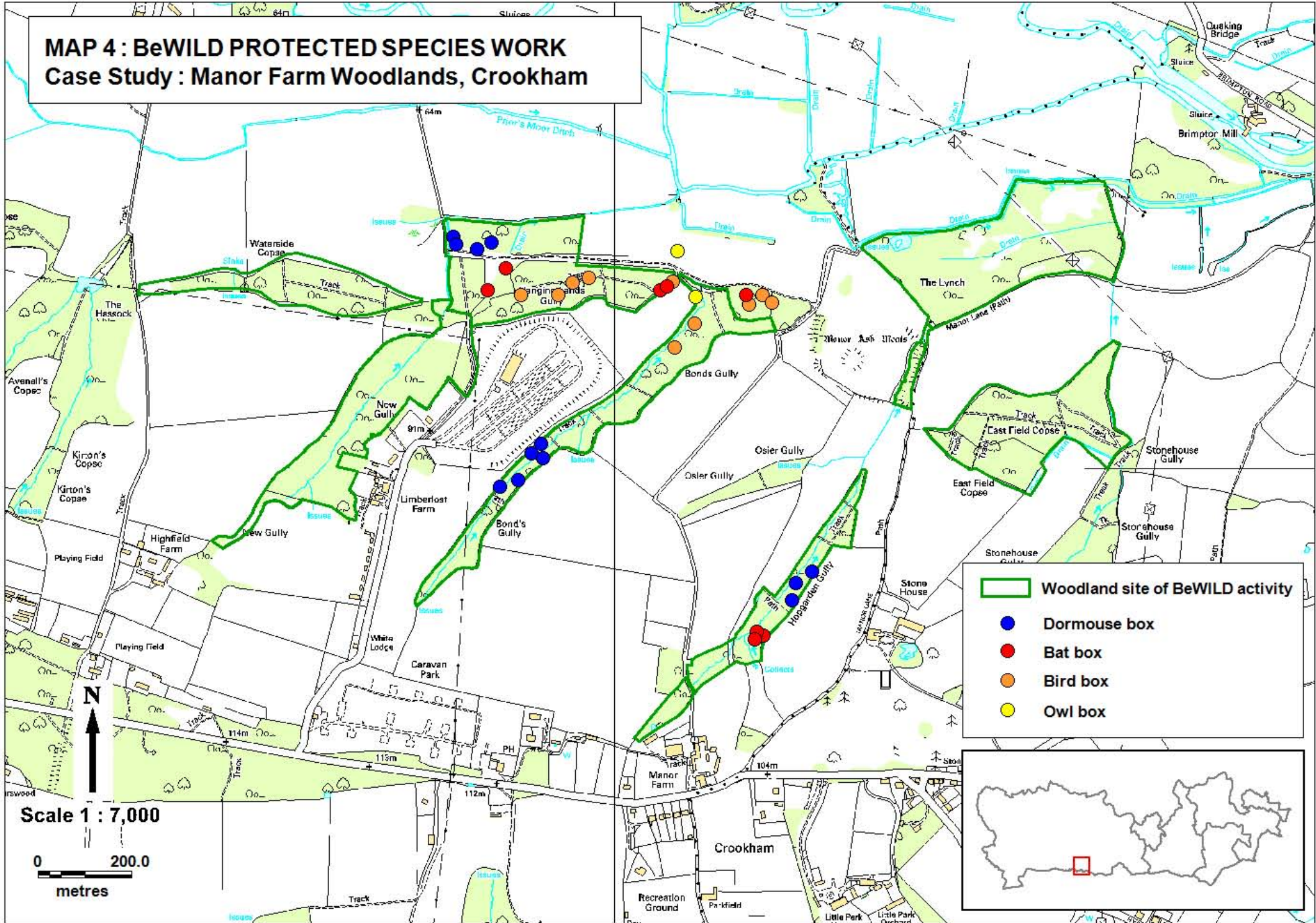


Dormouse ©Forestry Commission picture library



## MAP 4 : BeWILD PROTECTED SPECIES WORK

### Case Study : Manor Farm Woodlands, Crookham





# MAP 5 : BeWILD PROTECTED SPECIES WORK

## Case Study : High Wood





In summer, after flowering and before the fruit and nuts ripen, dormice are more dependent on the older established native trees that support rich invertebrate populations such as caterpillars and aphids. Oak and sycamore can be useful trees for dormice as they support large quantities of insects. Bramble is valuable in autumn when dormice feed on the abundant blackberries. They also eat a range of fruits and seeds such as ash keys, yew berries, sweet chestnuts and hazel nuts. So woodlands with dense vegetation patches, and a rich flora in both the trees and shrubs is more suited to dormice. Coppicing that encourages thicker growth and higher fruiting of nut trees, especially the hazel, is one of the key traditional management techniques to help support dormouse whilst also generating woodland products.

A nationwide dormouse monitoring project had no sites in Berkshire and the total number of known sites with past records for the county were no greater than 20. Despite this, neighbouring counties with active recording schemes had significant dormice populations around the county borders, suggesting the issue in Berkshire was the lack of recording effort.

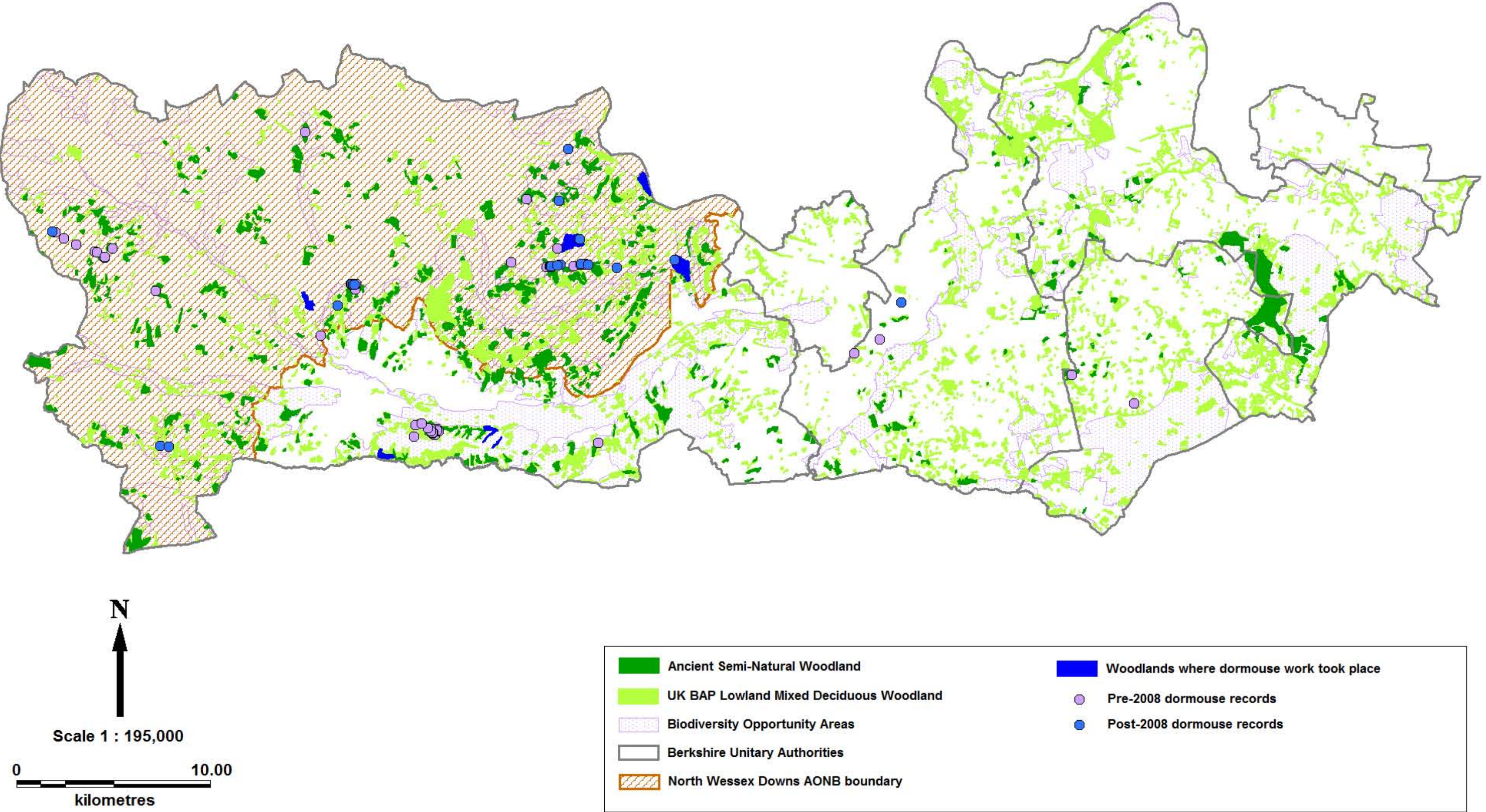
#### **MAP 6: BeWILD PROTECTED SPECIES WORK** (see overleaf)

##### **Distribution of dormice in Berkshire from confirmed records**

This map shows the distribution of dormice records before and after the BeWILD Project.



**MAP 6 : BeWILD PROTECTED SPECIES WORK**  
**Distribution of dormice in Berkshire from confirmed records**





## **Case Study: Setting up the Berkshire Mammal Group**

There had not been a mammal recording group in Berkshire for a number of years despite a healthy and interested recording community. After several attempts and discussions, it was the impetus of the BeWILD Project that stimulated the first meeting of a small board of interested conservation specialists, with BeWILD financing project officer time and room hire.

It was decided that the new mammal group would initially concentrate on a few threatened mammal species and particularly dormice, and would work with the BeWILD Project to establish a series of surveys to determine their presence across areas where previous records had been found and the Project had identified interested woodland owners and potential dormice sites in suitable woodlands.

The new Berkshire Mammal Group was set up during and as a result of the BeWILD Project, and was supported in its development by the Project. It was established out of the need for a group of local volunteers to take on and continue the monitoring of the dormouse boxes and tubes, which were installed in various ancient woodlands across Berkshire, after the BeWILD Project came to an end. This would ensure that a continued dormouse monitoring programme was in place beyond and as a legacy of the BeWILD Project.

The BeWILD funding gave just sufficient incentive for its establishment, with funding for nest boxes and room hire, to help bring a group of keen mammal enthusiasts together to develop a plan for a new group. The main success of this group came from finding the right people at the right time, especially Becky Thomas, a PhD student at Reading University and Daniel Atter, an ecological consultant, plus a handful of other professional ecologists that gave up their free time to help train up and teach other enthusiasts about mammal surveys.

Once a core group of interested people had been established, an initial meeting was called to determine the level of interest in the county for mammal surveying work. The turn out of over 40 people at this initial meeting was unexpected and many were willing to get involved in project work. This level of interest stimulated the group to formalise and join the Mammal Society as an affiliated group, allowing access to further resources, links to national experts and a place to further promote the Berkshire Group. The Mammal Society has a full guide on how to set up your own local group. See <http://www.mammal.org.uk/node/92>

Since the BeWILD Project finished, the Berkshire Mammal Group has gone from strength to strength with an engaged and committed group of mammal enthusiasts. For more information go to the Berkshire Mammal Group website, <http://www.berksmammals.org.uk/>

### **5.2.3 Dormouse surveys and nest boxes**

Nut hunt surveys, that attracted over 30 participants at each, were used to identify whether woods with past records or those with old hazel coppice still had the potential to support active dormice populations. Dormouse nest tubes were also set up in woods thought to have the appropriate vegetation structure and diversity.

Once dormouse nibbled nuts or other evidence was found, the BeWILD project officers sought the permission of the landowners to put dormouse boxes up, and together with the Berkshire Mammal Group establish those keen volunteers that would undertake to monitor the site. Further information can be found on their website, <http://www.berksmammals.org.uk/>



Volunteers carrying out dormouse nut hunt and putting up a bat box ©Meg Chambers

#### **5.2.4 Other ecological surveying**

The BeWILD Project also funded other ecological survey work.

Local naturalist groups such as the Berkshire Bird Atlas Group were in the process of recording for a new Berkshire Bird Atlas, so it was felt that there was little need to duplicate bird survey work, but the group were informed of any woodlands where the BeWILD Project had permission to survey and were invited to visit them.

Local volunteers from the Upper Thames Butterfly Conservation Group and the Berkshire Moth Group got involved in delivering surveys and training sessions on woodland moths. In particular there was a survey for drab looper moth, a BAP priority species strongly associated with wood spurge, an ancient woodland indicator plant with recorded population losses in the neighbouring county of Oxfordshire. Results from these surveys were fed back to TVERC.

#### **Summary of BeWILD'S protected species achievements 2008-2011**

- Approximately 600ha of woodlands were surveyed specifically for protected species
- 12 woodlands had new bird, bat and dormouse boxes erected and active volunteer groups linked to them to undertake on-going surveys.
- Overall 40 bird boxes, 40 bat boxes and 165 dormouse boxes were erected as a result of the BeWILD Project. 150 of the dormouse boxes were put up by the Berkshire Mammal Group during the first few months after the BeWILD Project came to an end.
- There are now positive records of dormice present in 4 woods in Berkshire and all are now monitoring sites, established in just 4 months.
- 1 drab looper moth survey organised with Butterfly Conservation.

## CHAPTER 5 SUMMARY SECTION

### **SUCSESSES & ACHIEVEMENTS: What worked well**

- Working as part of the FWAG team enabling ELS and HLS advice to tie in with the BeWILD Projects' aims
- Using the Project partners' existing volunteers and contacts meant that we attracted high numbers of interested volunteers early on in the Project, so that we could implement volunteer woodland management work quickly.
- Networking and skill sharing at the open ecological training and surveying events made them valuable sessions, encouraging the volunteers to return and put forward their ideas. Through this process the Berkshire Mammal Group was established.
- Returning volunteers built a reputation for the Project with woodland owners and allowed them to build relationships and work together without the need for Project co-ordinators.
- Focusing on ancient woodland allowed us to work with a range of groups and peoples' interests, from small woodland businesses, local naturalists' groups and archaeologists, all of which highlights the cultural importance of this habitat.
- Ongoing officer support for 2.5 years meant that time could be taken to develop community engagement with regards to the different aspects of this project, matching the skills and interests of the volunteer army with the appropriate woodlands and their owners' needs.

### **PROBLEMS & LIMITATIONS: What could have worked better**

- The scattered approach across the whole county meant even the additional resources provided through the Countdown 2010 grant were stretched and only small areas within woods were restored.
- The demise of FWAG and the Pang, Kennet and Lambourn Valleys Countryside Projects (FWAG) in 2011 has meant that an independent, free or cheap form of advice and support is no longer available to farmers and woodland owners in West Berkshire, and this gap needs to be filled.
- Ongoing support for woodland owners and volunteers in monitoring the restoration of woodland habitats and encouraging woodland management is essential to achieve long-term ecological gains.
- Protected species work needs long-term solutions which may rule out the most appropriate woods. For this reason public land and woods owned by charitable organisations were targeted for monitoring sites.

### **FINDINGS & RECOMMENDATIONS: Lessons learned**

- Take the time to find out about past or ongoing woodland conservation projects being undertaken by the conservation community or local government so you can build on these successes or outline any issues early.
- Utilise your local biological record centre to find out about local woodland biodiversity hotspots and where they are real data gaps so you can focus the project to deliver real returns.



- Deer browsing pressure is a major issue for Berkshire's ancient woodlands with regards to their ecological value and should be flagged up as a priority for any future woodland project. It is a widespread problem across Berkshire, with the woodlands in some areas having little or no structure or vegetation under the high forest trees. The solution, to manage deer populations to sustainable levels, would require co-ordination over a landscape-scale area, which was beyond the scope of the BeWILD Project. However this is a complex but important issue that any woodland project would need to address. The erection of deer fences is only a short term preventative measure.
- Coppicing hazel stools above knee height was trialled, in order that the regrowth was above the browsing height of rabbits and muntjac deer theoretically. This not only looked more untidy, but did not encourage the regrowth of long, straight rods, and could increase the stool's susceptibility to disease, rot and instability. The BeWILD Project would not recommend it as a sustainable method of coppicing.
- Ideally, the hedges on any one farm should vary in size, shape and structure in order to provide a range of habitats which will support a greater number of species, and provide valuable wildlife corridors linking areas of woodland habitat.
- Don't take the enthusiasm and availability of your volunteers lightly; everyone needs to feel they make a difference and that they are getting something out of the experience.
- Volunteers bring with them a host of skills that can be utilised in any project. Taking the time to find out their interests and backgrounds can often lead to a more fruitful outcome for all parties.
- Most counties will have a large number of existing naturalist groups. Make contact with these and see how you can compliment their existing work or what your project can help them deliver.

## TOP TIPS FOR WOODLAND PROJECTS

### Woodland management for wildlife

- Create rides at least equivalent to the height of the ride edge trees. The wider the ride the more sun and warmth it will receive. This can be achieved by scalloping the edges of the ride, so they are not straight edged. Encouraging shrubs and rough grass at the edge of the ride will increase the edge habitat for plants, invertebrates and woodland birds.
- Where new woodland rides are being created, east–west orientated rides give the greatest conservation benefit by maximising the length of time they remain warm and sunny.
- When restoring coppice, ensure the canopy is not too dense, suppressing regrowth. Aim for a canopy cover of around 30-40% or 30-100 standard trees per hectare.
- Use brash to help protect coppice stools when it would otherwise cost money to clear up. However, it is better to cut more hazel and control the deer than spend a lot of time protecting coppice stools. Be ready to accept your coppice will be browsed for at least one year, but if freshly cut coppice is available the next year, the first coupe should be reprieved.
- A healthy woodland should contain plenty of dead wood, with a range of types and ages. Standing dead wood should be left *in situ* where safe to do so. When carrying out any kind of woodland management work, it is very easy to create piles of brash or waste wood as new dead wood.

### Setting up a mammal group

- If you are not aware of any existing mammal group in your area, first contact your Local Records Centre and the Mammal Society to see if there is another group that covers small mammal projects or a past group that is no longer active.
- Often the success (and failure) of these groups is due to one individual, so try and spread the workload, and establish a Steering Group or group of core individuals that can each volunteer certain skills and time.
- Use the national schemes and societies to get additional contacts and ideas.
- Plan a series of talks to stimulate the group on conservation issues and targets so that the field surveys are that much more relevant and useful for all involved.

### Surveying for dormice

- Capitalise on the biggest asset, the volunteer network, mixing those with keen interest and willingness to learn with those with the knowledge and skills to guide and train.
- Co-ordination is often undervalued, but in order to set up a full monitoring programme, several keen co-ordinators who are willing to put in the time to set it up are needed.
- The Berkshire dormouse monitoring programme included:
  - the identification of potential woodlands
  - the funds to support meetings and generate interest
  - organising surveys
  - a mentoring programme matching skilled interested naturalists with dedicated volunteers
  - purchasing dormouse boxes (further supplemented by funds and boxes)

## 6. DELIVERY OF WOODLAND MANAGEMENT

A whole range of mechanisms were used to deliver woodland management work through the BeWILD Project. These included using volunteers and contractors, promoting and supporting the use of the Forestry Commission's English Woodland Grant Scheme (EWGS), and supporting landowners to carry out woodland management work in their own woods if they chose to operate outside of the EWGS.

### What work was done, where and why?

#### **MAP 7: BeWILD WOODLANDS** (see overleaf)

##### **Range of woodland work carried out by the BeWILD Project**

This map shows the full extent of BeWILD work on the ground, and includes woodland management work, protected species work and woodland surveys which were all carried out during the BeWILD Project. Note that if a wood is highlighted for management or protected species work it would also have been surveyed.

#### **MAP 8: BeWILD WOODLAND MANAGEMENT WORK** (see overleaf)

##### **Case Study: Rushall Manor Farm Woodlands**

##### **The range of delivery mechanisms used to carry out woodland management work**

This map clearly illustrates the range of woodland management work which the BeWILD Project undertook, and the range of delivery mechanisms used to achieve it. Rushall Manor Farm woodlands is a cluster of 36ha of native broadleaved woodlands, 14.7ha of which are ancient woodlands. Volunteer tasks were devised and planned by the BeWILD Project in partnership with the farm manager, and were lead by the Project. The work carried out by the contractors was also devised, organised and funded by the Project, although the farm made a contribution towards the deer fencing, allowing the size of the fenced coupe to be extended.

### Delivery mechanisms

#### **6.1 Woodland management work through EWGS**

The Forestry Commission's English Woodland Grant Scheme (EWGS)<sup>7</sup> was seen as a useful and valuable tool for implementing woodland management. It was viewed as a means to ensure the long-term management of Berkshire's ancient woodlands beyond the life of the BeWILD Project, by providing a structure and a framework of grant aid, forestry advice and support. The aim during the BeWILD Project was to promote the EWGS, engaging and supporting woodland owners and managers in the process so they would be able to take up a grant.

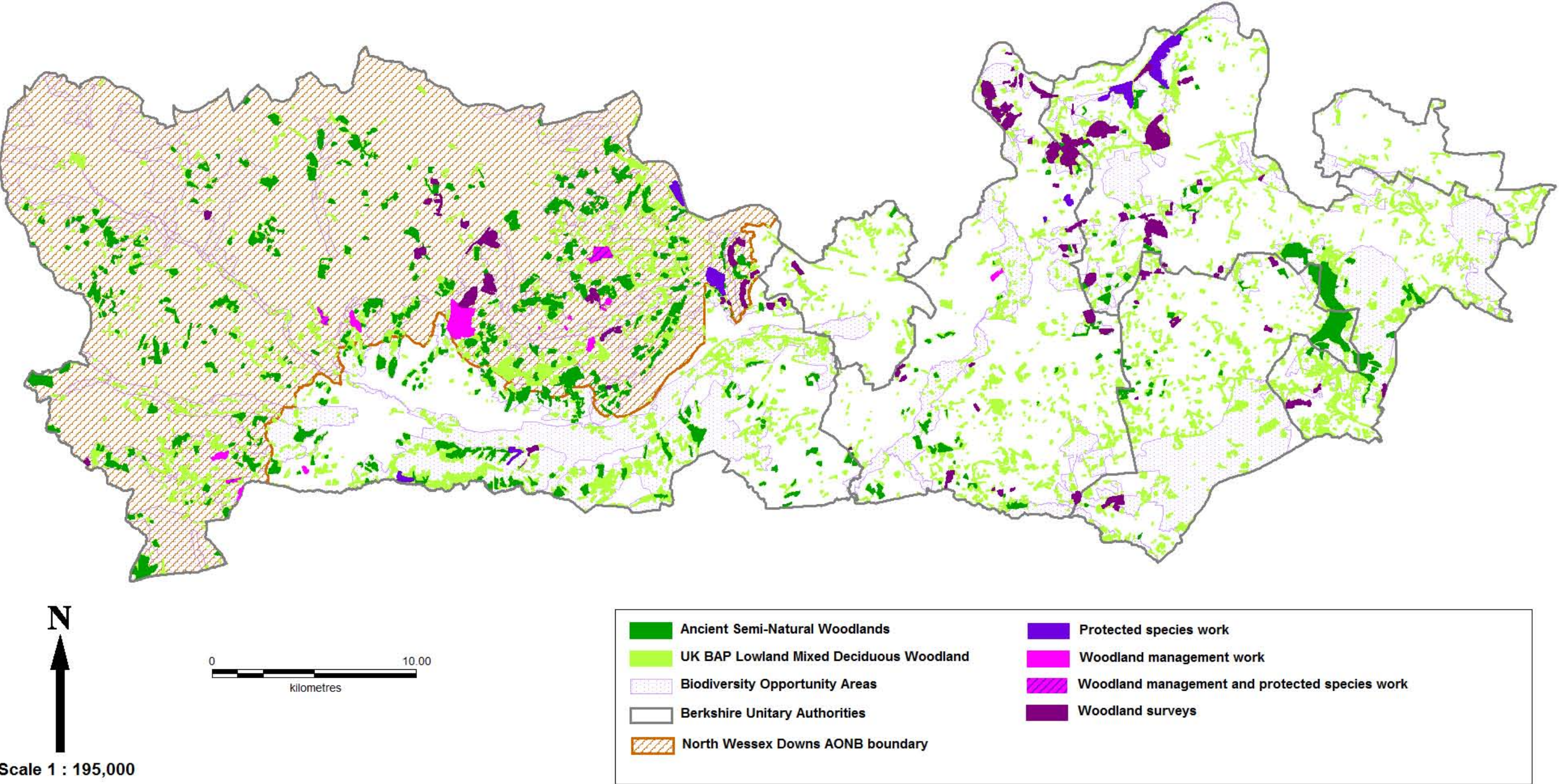
The Project promoted the EWGS grants and woodland management plans at all of the woodland events and woodland management training workshops organised by the Project, and whenever woodland management advice was given to a woodland owner or manager.

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<sup>7</sup>Forestry Commission's English Woodland Grant Scheme  
<http://www.forestry.gov.uk/forestry/inf-d-6dcccen>

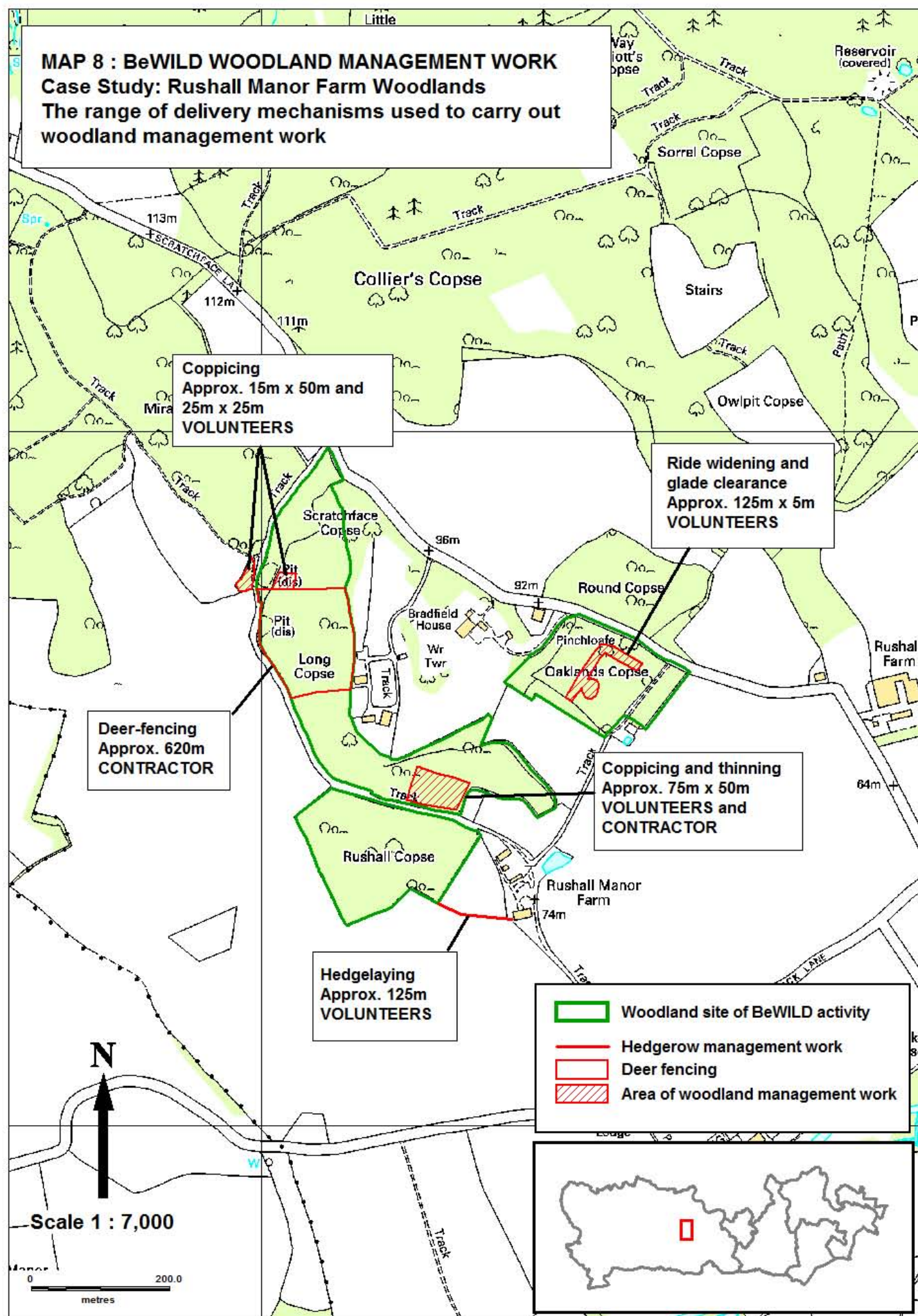


**MAP 7 : BeWILD WOODLANDS**  
Range of woodland work carried out by the BeWILD Project





**MAP 8 : BeWILD WOODLAND MANAGEMENT WORK**  
**Case Study: Rushall Manor Farm Woodlands**  
**The range of delivery mechanisms used to carry out**  
**woodland management work**





The first step of the EWGS process is to secure a Woodland Planning Grant (WPG) for the production of Woodland Management Plans, which provide the structure for a 20 year programme of work, giving direction and clarity to the woodland owner or manager for the woodlands' future and helping them plan the required annual works to achieve the long-term aims.

The Project had hoped to produce Woodland Management Plans for under-managed woods, in order to secure the re-establishment of management in neglected woodlands and the future management of woodlands in Berkshire. The Woodland Planning Grant currently provides a minimum of £1,000 to cover the production of a management plan for any wood between 3-50ha, paying £20/ha for woodlands up to 100ha, over and above which the grant is increased incrementally at £10/ha.

### **EWGS deliverables**

- One woodland owner undertook to obtain a Woodland Planning Grant from the Forestry Commission and to produce their own woodland management plan after attending a BeWILD woodland management training event.
- Four woodland owners expressed an interest in having woodland management plans produced through the EWGS Woodland Planning Grant.
- The BeWILD Project progressed applications for two Woodland Planning Grants.
- Three woodland owners with whom the BeWILD Project worked were disenchanted with EWGS.
- Since the BeWILD Project has finished, another three woodland owners have expressed an interest in having woodland management plans produced through the EWGS Woodland Planning Grant, two as a direct result of BeWILD.

However, despite the progress detailed above, it was disappointing not to have completed any Woodland Management Plans during the BeWILD Project. There was however a number of reasons for this.

- The audience was not very receptive to long-term woodland management, even with the EWGS grants available and the offer of support through the EWGS process.
- It takes time for woodland owners to go through the process of registering with the Rural Payments Agency (RPA) in order to be able to receive government grants, and to register their land with the Rural Land Register (RLR). In two cases this registration process had not been completed before the BeWILD Project came to an end.
- One woodland owner seeking woodland management advice contacted the Project during the last two weeks of the Project when there was no time left to be able to help them.
- The relatively low priority of woodland management contributed to delays in trying to get woods registered or producing a management plan, with constraints from other farm work, old age or ill health.

There was a variety of reasons why some woodland owners were reluctant to go into EWGS. Some wanted to do things their own way, but most perceived restrictions and complications of getting involved in yet another government scheme. These perceptions included bureaucracy, regulations, being tied in to a long-running scheme and grants which only covered a percentage of the total costs.

The BeWILD Project offered alternative support to the Forestry Commission's EWGS, albeit at a much smaller scale, providing small-scale woodland management through conservation volunteer tasks and the funding of a few capital projects, such as deer fencing and canopy thinning. It was primarily owners of small neglected ancient woodlands which BeWILD was able to support, particularly during the uneconomic restoration phase, where restoration coppicing by volunteers provides a cost-free sensitive solution to this otherwise costly process.

### **Figures from the Forestry Commission on EWGS and WPG, June 2012**

620 woods in Berkshire are currently in EWGS with a total area of 6,397ha. The mean woodland size is 9.6ha.

32 woodland management plans for Berkshire woodlands have been funded by WPG under EWGS with a total area of 2,121ha

Mean size of woodlands with woodland management plans is 66ha

In order to ascertain whether the BeWILD Project had an effect on the uptake of WPG as a means to fund woodland management plans, the Forestry Commission provided figures on the number of Woodland Planning Grant which were approved in Berkshire each year since 2006, taking into consideration that BeWILD was in operation from October 2008 - March 2011.

<b>Year</b>	<b>No. WPG applications</b>	<b>Area of woodland covered by WPG</b>
2006	4 WPG applications covering	77ha woodland in total
2007	1	35ha
2008	4	428ha
2009	5	251ha
2010	7	958ha
2011	9	360ha

From this very limited dataset it would seem that there has been an increase in the number of WPG applications each year over the period 2006-2011. There was a hiatus in Forestry Commission grant support between the old WGS and the new EWGS schemes in 2007/08, which is probably why the number of WPG applications in 2007 was so low.

These figures do tie in with the time frame of the BeWILD Project, but without knowing who the woodland owners were or asking them their motivations for applying for a WPG, it is not possible to say whether the BeWILD Project had any effect on the number of applications. It is however encouraging that the number of WPG applications has increased, and will hopefully lead to an increase in the area of managed woodland in Berkshire.

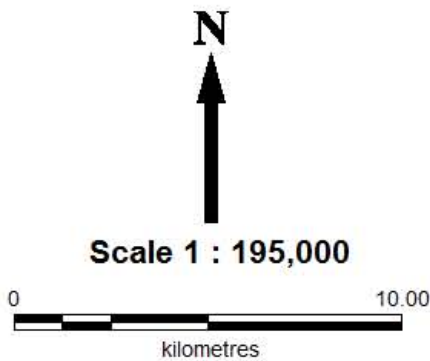
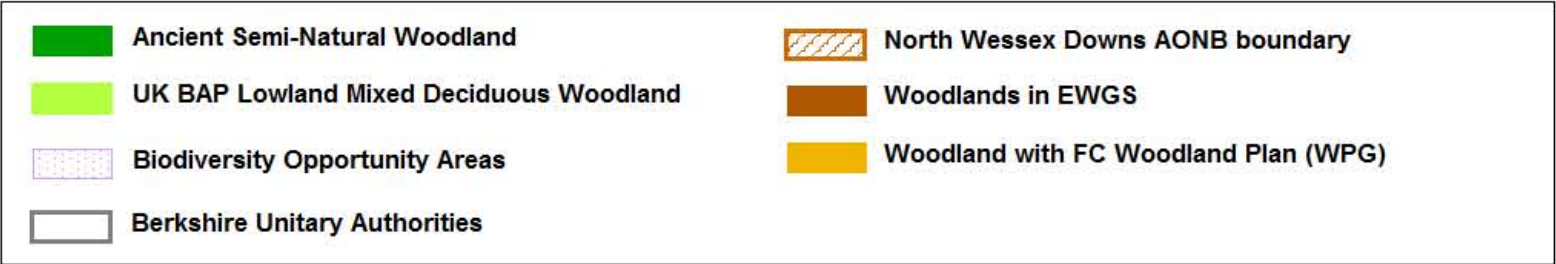
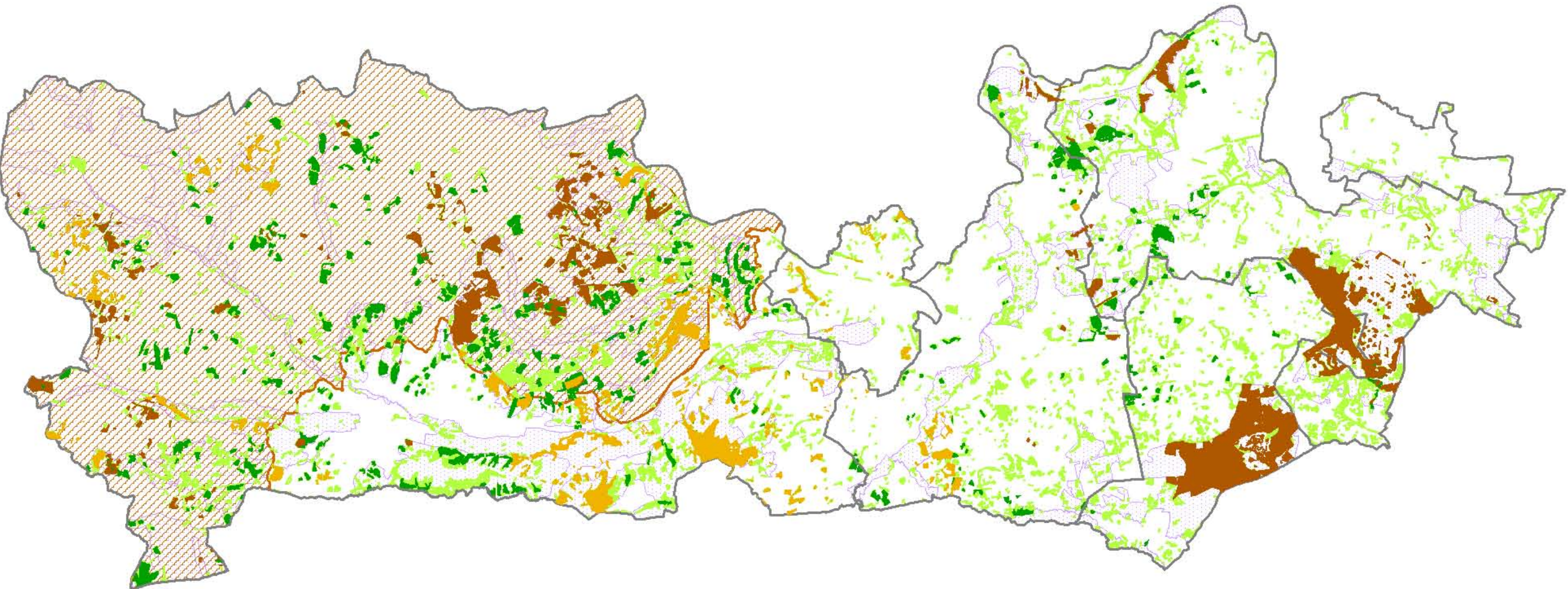
### **MAP 9: BERKSHIRE WOODLANDS IN FORESTRY COMMISSION GRANT SCHEMES** (see overleaf)

This map shows those woodlands in Berkshire which were in EWGS and those which have produced a woodland management plan funded by a WPG as of June 2012.

These figures were kindly produced by Patrick Stephens from the Forestry Commission, based on information in June 2012.



MAP 9 : BERKSHIRE WOODLANDS IN FORESTRY COMMISSION GRANT SCHEMES





## 6.2 Woodland management work by woodland owners

The BeWILD Project also worked with woodland owners who wanted to manage their woodlands but did not want to apply for EWGS grants. These woodland owners funded and delivered the woodland management work in a variety of ways, using their own labour and resources, but also often with the support of the BeWILD Project and its volunteers. Most of these woodland owners were managing their woodlands on a piecemeal basis because of a limit on their available time, and because they generally considered their woodland as having little potential to generate an income, however some were very committed to a regular programme of work in order to restore their woodland.

For some woodland owners with very limited resources, mostly those who were unable to work the woods themselves, the only woodland management work being undertaken was by volunteers. The various ways in which volunteers contributed towards the management of ancient woodlands during the BeWILD Project is discussed below.

### **MAP 10: BeWILD WOODLAND MANAGEMENT WORK** (see overleaf)

#### **Case Study: Mapleash Copse**

#### **A woodland owner who has undertaken to restore their ancient woodland and reinstate the coppice rotation**

Charles Flower, a woodland owner in the Project area, is passionate about woodland management and in bringing his 21.9ha ancient SSSI woodland, Mapleash Copse back into management after many decades of neglect. This is an oak, ash and hazel coppice woodland just to the north of Snelsmore Common. He is restoring the rotational hazel coppice system which was in place in the wood until the 1950s having reinstated 7x0.75 acre coppice coupes giving a total area of 5.25 acres or 2.1ha of hazel coppice. Charles has committed a lot of his own time and resources to the management of his woodland, as well as working with the BeWILD Project.

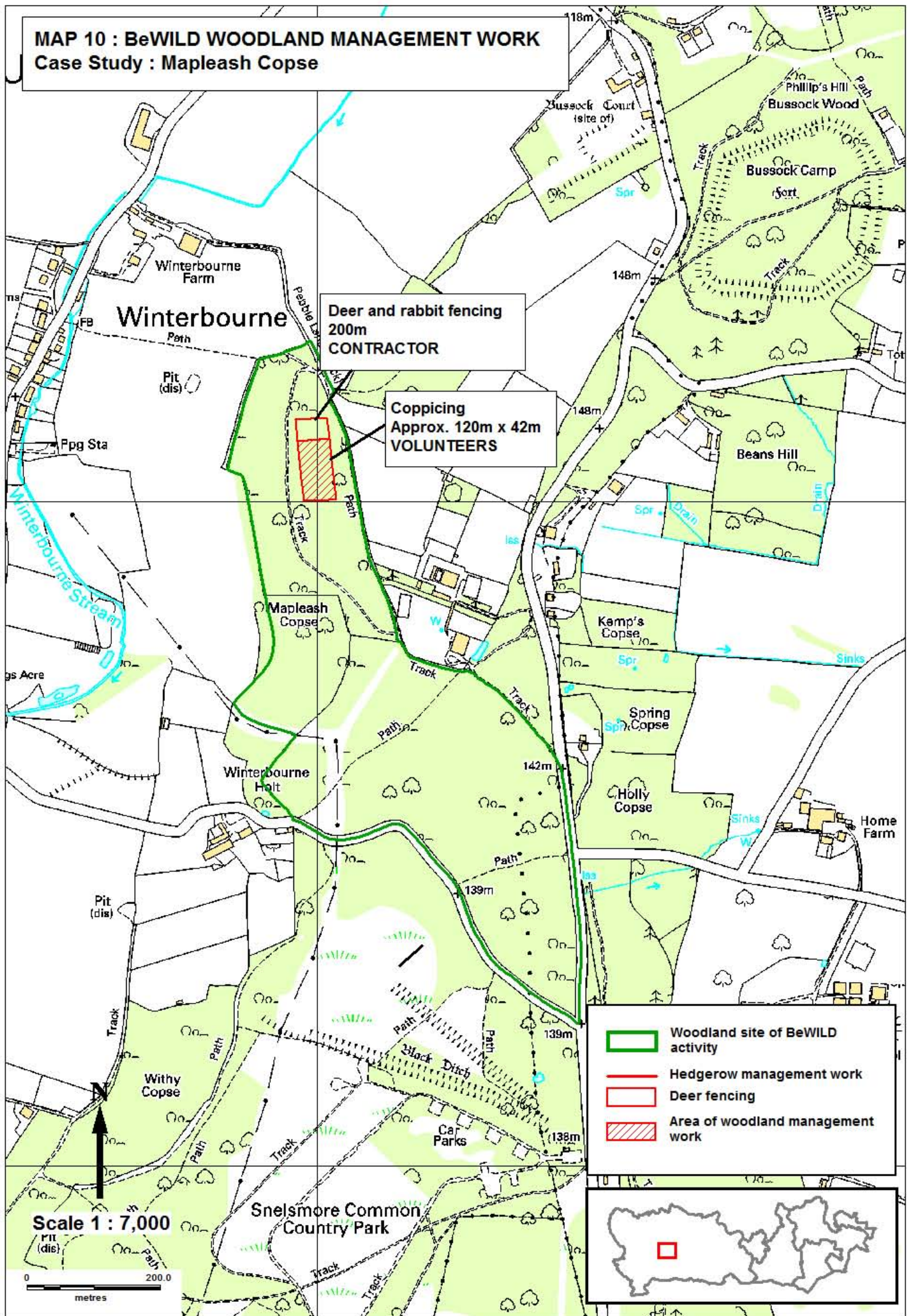
An earlier grant from the Forestry Commission funded the erection of a deer fence around the whole wood, and through a grant from the BeWILD Project with contributions from Charles, a second inner deer and rabbit-proof fence around the coppice coupes was installed.

Restoration coppicing volunteer tasks were organised by the Project to support Charles Flower in completing the coppicing of the designated coupe each year. In return, the stakes and binders cut were given to the Project for use in hedgelaying tasks and the hedgelaying competition.

Mapleash Copse provided a great venue for training workshops, in coppicing for stakes and binders and the layering of hazel, because attendees could see the different stages of a coppice rotation cycle. The relationship established between the BeWILD Project and Mapleash Copse had mutual benefits for both the woodland owner who had more coppicing done, and the Project through the woodland owner sharing his skills, experience and wood, and in providing a demonstration site for the restoration of a coppice rotation system. Charles Flower was very appreciative of the work achieved by volunteers in his wood, and gave much positive feedback to the Project.

# MAP 10 : BeWILD WOODLAND MANAGEMENT WORK

## Case Study : Mapleash Copse





### 6.3 Woodland management work by contractors

The BeWILD Project had allocated funds to deliver one capital works woodland management project each year of the project.

**Year 1 (2008/09):** Coppice restoration work was carried out in a species-rich wet woodland called Aldermoors Wood Local Wildlife Site (LWS) in Wokingham District. This was an area of over mature alder coppice, which was in need of being brought back into a coppice rotation cycle. A 0.5ha area of it was felled/coppiced in order to rejuvenate it, and by allowing the light in would encourage the growth and spread of the diverse ground flora. This work was organised by Wokingham Borough Council.

The BeWILD Project also contributed towards 200m of deer and rabbit-proof fencing around the 2.1ha area of coppice being brought back into rotation in Maplesh Copse as shown in Map 10. This was done because stray deer within the woodland perimeter fence and rabbits in particular browsed off all the coppice regrowth in the first year of coppice restoration.

**Year 2 (2009/10):** 0.4ha canopy thinning in an 80 year old planted oak compartment with hazel coppice understorey at the southern end of Long Copse, Rushall Manor Farm was carried out as shown in Map 8. This work, continuing into Year 3, was commissioned in order to kick start the coppice restoration process, by opening up the dense canopy, and thereby support the healthy regrowth of the hazel stools which had been coppiced by volunteers. A felling licence was obtained for this work from the Forestry Commission, and the 22m<sup>3</sup> of felled oak was used as firewood on the farm and by a local charcoal maker, Pang Valley Charcoal, whose operation was based on the farm.



Aftermath of canopy thinning and restoration coppicing of hazel stools.  
The felled oak has been chopped ready for charcoal-making. ©FWAG

**Year 3 (2010/11):** Deer fencing was erected around a 2.2ha hazel coppice coupe in the northern half of Long Copse, Rushall Manor Farm as shown in Map 8. In total 620m of 1.8m temporary steel mesh deer fence was erected, with the farm contributing towards the cost of 170m of it.

The erection of this deer fence has created an area where coppicing work can continue in Long Copse beyond the life of the BeWILD Project. It can be done either by volunteers or contractors and with the benefit that the coppice regrowth will be protected from deer

browsing, creating a legacy of the BeWILD Project. This fencing work was done with a view to supporting the ongoing management of the woodlands and the reinstatement of a woodland management plan.

#### **6.4 Woodland management work by volunteers**

The role of volunteers in the delivery of the BeWILD Project cannot be underestimated, with the Project having been supported by a total of 451 volunteer days over the course of the 2.5 year project, with a monetary value of over £28,600, when valued according to the Natural England rates for skilled and unskilled labour. Although the majority of this volunteer time was given through woodland management volunteer tasks, some of it was also given in supporting training workshops and events, and providing financial advice.

Natural England rates for all categories of volunteers

1. General unskilled labour - £6.25 per hour or £50 per day (basic 8 hr day)
2. Specialist, skilled, trained labour - £18.75 per hour or £150 per day (basic 8 hr day)
3. Specialist services - £31.25 per hour or £250 per day (basic 8 hr day)
4. Professional services - £50 per hour or £350 per day (basic 7 hour day)

#### **What volunteer work was carried out?**

A programme of conservation volunteer tasks and activities was organised by the BeWILD Project each quarter year throughout the Project to deliver ecological woodland management work in Berkshire's ancient woodlands. This work included: restoration coppicing, canopy thinning, ride and glade creation and restoration, veteran tree management, removal of invasive and non-native species, nest box erection and surveying, and hedgelaying.

The volunteers primarily carried out woodland management work in small less economically viable woodlands. Aside from the benefits to the woodland habitats and wildlife from the management work, the products produced by this volunteer work included:

- Firewood which was used locally, by the woodland owners and volunteers.
- Stakes and binders for hedgelaying tasks and hedgelaying competitions.
- Brash for creating coppice stool protection defences against browsing deer and rabbits.



Volunteers carrying out restoration coppicing, producing stakes and binders for hedgelaying, and Hedgelaying ©FWAG and ©Meg Chambers

### **Who carried out the conservation volunteer tasks?**

The BeWILD conservation volunteer tasks were delivered by several local nature conservation volunteer groups who the project partners, the Pang, Kennet and Lambourn Valleys Countryside Projects (FWAG) and TVERC, had developed relationships with over the years.

The Pang Valley Conservation Volunteers (PVCV), a local volunteer group closely associated with the Pang, Kennet and Lambourn Valleys Countryside Projects (FWAG) carried out many of the tasks, however other local volunteer groups were also involved and included: Conservation in Reading on Wednesdays (CROW), the local Reading branch of the British Trust for Conservation Volunteers (BTCV), now known as The Conservation Volunteers (TCV) and the newly-formed Berkshire Mammal Group. BTCV brought out a local team of volunteers for some tasks, but also organised national volunteer weekend breaks bringing volunteers from all over the country to work in BeWILD ancient woodland sites for three weekends during the Project. Some corporate volunteers from Vodafone carried out some hedgelaying and hedge planting work, but it was found that companies were generally less inclined to carry out work on private land or during the winter.

The Pang, Kennet and Lambourn Valleys Countryside Projects (FWAG) were incredibly well supported by local volunteers, and was well connected with the amateur surveyor community. The leaders of the local conservation groups with which the BeWILD Project organised tasks were extremely helpful and supportive in achieving the Project's objectives, and included Dick Greenaway, Chairman of the Friends of the Pang, Kennet and Lambourn Valleys Countryside Projects, Frank Hayward, Chairman of the Pang Valley Conservation Volunteers, John Lerpiniere, BeWILD's contact with Conservation in Reading on Wednesdays, and Oonagh Kelleher, Manager of the Reading branch of the British Trust for Conservation Volunteers.

## **Summary of BeWILD's conservation volunteer tasks 2008-2011**

- 22 Coppicing and coppice stool protection tasks
- 7 Hedgelaying tasks
- 1 Thinning task
- 4 Veteran tree management tasks: halo creation and maintenance
- 8 Removal of invasive and non-native species tasks: bracken, rhododendron and Himalayan balsam
- 5 Glade clearance tasks
- 1 Scrub clearance task on Bronze Age round barrow
- 3 Ride and glade creation tasks
- 1 Pond management task removing rhododendron
- 1 Nest box erection tasks
- 1 Dormouse nest box surveying tasks

558 people attended 54 conservation volunteer tasks organised over the 2.5 years

21 tasks were organised on average each year:

9 in last 6 months of 2008-09, 20 in 2009-10 and 25 in 2010-11

10 volunteers at each task on average:

the average number of volunteers increased from 8 to 11 per task over the life of the Project

4 of the tasks were carried out to protect and preserve Scheduled Ancient Monuments (SAM), on Grimsbury Castle Iron Age hill fort in Fence Wood and the Bronze Age round barrow burial mound in Park Wood.

In addition, a minimum of 7 nest box erection tasks and 2 dormouse nest box surveying tasks were organised by TVERC and the Berkshire Mammal Group. These tasks are not included in the above figures because the number of volunteers attending is not known, and some of these tasks took place just after the BeWILD Project had finished.

Full details of the volunteer tasks organised by the BeWILD Project can be found in Appendix D, BeWILD Conservation volunteer tasks 2008-2011.



## **MAP 11: BeWILD WOODLAND MANAGEMENT WORK** (see overleaf)

### **Case Study: Winterbourne Wood**

#### **The role of volunteers in carrying out woodland management work**

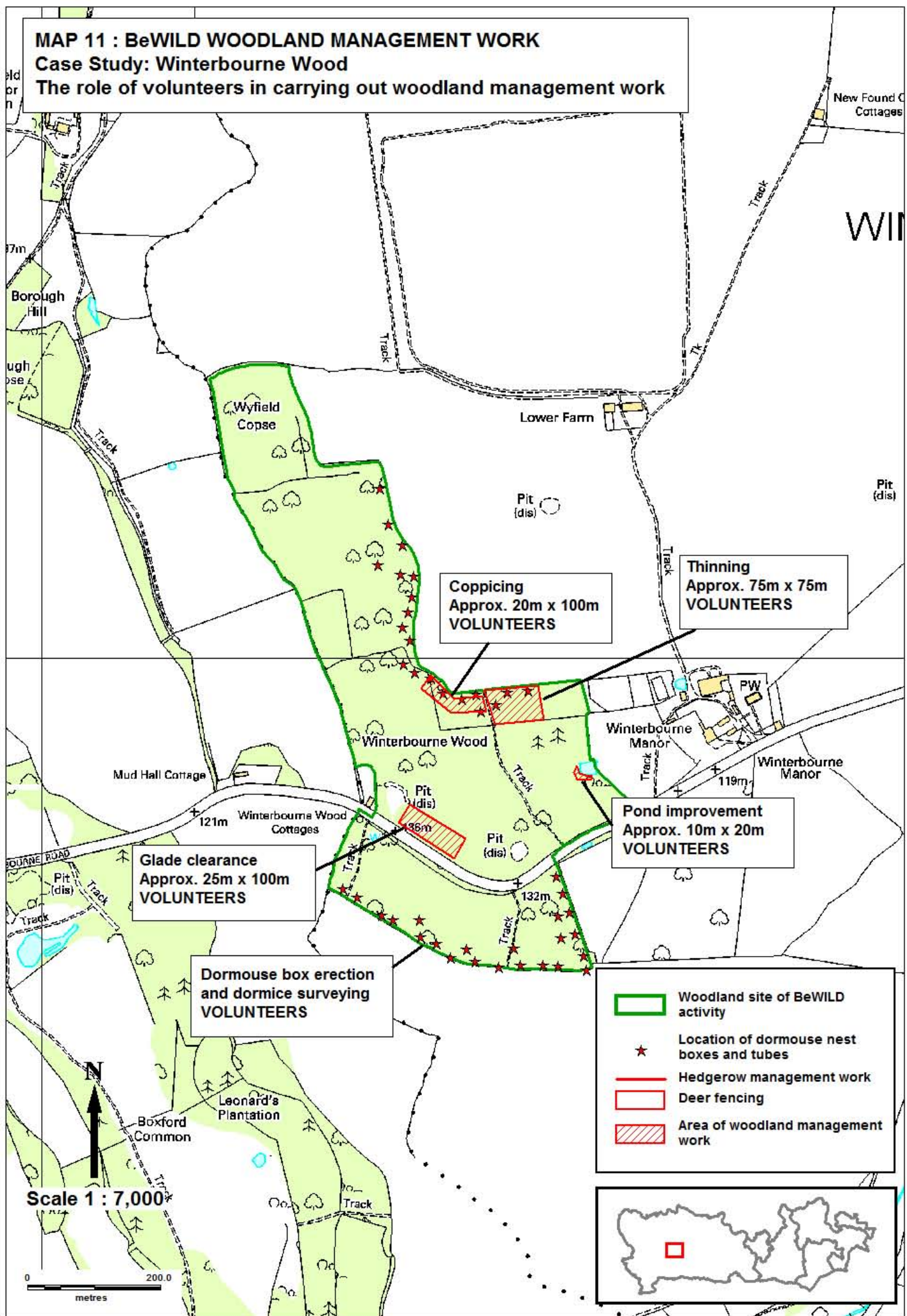
This map illustrates the variety of work carried out by volunteers within an under-managed ancient woodland as a result of the BeWILD Project. In Winterbourne Wood, as in many other woodlands, protected species work was carried out as well as woodland management work, with dormouse nest boxes and tubes erected and subsequently monitored by volunteers. Ecological work benefiting the woodland habitat was carried out by the Pang Valley Conservation Volunteers and included pond improvement through the removal of huge invasive rhododendron plants which shaded a pond, and restoration coppicing of an area of over-mature old hazel coppice stools.

As a result of two volunteers, Mark Brown and Frank Hayward visiting Winterbourne Wood as Pang Valley Conservation Volunteers in May 2009 to put up dormouse boxes, a long term partnership ultimately developed between them and the woodland owner. Having got to know the wood and the woodland owner, they took it upon themselves to arrange with the woodland owner to return under their own steam and carry out further woodland management work on the site, getting more directly involved in the management of the wood. Over time this became a more regular arrangement with the volunteers working in the wood on a regular weekly basis, and often several times a week in the winter. In essence they have taken on the management of Winterbourne Wood on behalf of and in agreement with the woodland owner.

Since they started working there independently in 2009, they have repeatedly cleared a large glade of invasive bracken over several summers, allowing the woodland flowers to bloom prolifically, thinned poorer quality standards in areas of high forest and begun to restore the coppice. Since the BeWILD Project finished, they have become actively involved in the production of a woodland management plan for the site, being regarded by the woodland owner as her management tool, respected friends and advisors. They are now considering undertaking some ride improvement work as from winter 2012.

This is an entirely money-free exchange with the volunteers continuing to work in the woods unpaid, but able to help themselves to firewood they produce in the course of the thinning work they have carried out. This is a great outcome for all concerned; the woodland owner, the woodland in much need of management, and the volunteers who love working in the woods, and it was facilitated by a BeWILD volunteer task, highlighting the value of introducing volunteers to a wood and its owner.

**MAP 11 : BeWILD WOODLAND MANAGEMENT WORK**  
**Case Study: Winterbourne Wood**  
**The role of volunteers in carrying out woodland management work**



## Summary of BeWILD's woodland management work 2008-2011

- Woodland management work carried out in 13 woods
- Hedgerow management work carried out on 9 hedges on 5 farms
- *Canopy thinning*  
0.9ha mature canopy trees thinned in 2 ancient woodlands;  
0.55ha in 1 wood by volunteers and 0.35ha in 1 wood by contractors
- *Coppice restoration and stool protection*  
3.5ha coppicing and stool protection in 9 ancient woodlands  
3ha in 8 woods by volunteers and 0.5ha in 1 wet alder woodland by contractors
- *Deer fencing*  
820m deer fencing erected in 2 ancient woodlands by contractors,  
creating deer-fenced coppice coupes of 2.2ha and 2.1ha
- *Glade and ride creation and maintenance*  
1.1ha glade and ride creation and maintenance in 3 ancient woodlands by volunteers
- *Veteran tree management*  
9 veteran tree halos created and maintained in 2 ancient woodlands by volunteers
- *Removal of invasive and non-native species*  
2.2ha invasive species removed in 4 ancient woodlands by volunteers  
Invasive species removed from 2 Scheduled Ancient Monuments (SAM) and 1 woodland pond  
SAMs were: Grimsbury Castle Iron Age hill fort in Fence Wood and the Bronze Age round barrow burial mound in Park Wood  
Species removed included: rhododendron, Himalayan balsam, bracken and bramble/scrub
- *Hedges laid*  
905m hedge laid on 9 hedges on 5 farms by volunteers,  
including 350m hedge laid during 2 hedgelaying competitions

## CHAPTER 6 SUMMARY SECTION

### SUCCESSSES & ACHIEVEMENTS: What worked well

- The BeWILD Project provided a means by which small woodland owners could engage with the woodland management process and the Forestry Commission's EWGS in an individually supported manner.
- Woodland owners were supported by the BeWILD Project, with woodland management and grants advice, and through volunteer woodland management tasks and the funding of capital items such as deer fencing, where the Forestry Commission is increasingly stretched to give site-specific advice.
- The Project used a range of delivery mechanisms in order to maximise the amount of woodland work achieved by the Project, and to match the appropriate scale of work required for each woodland management task.
- The BeWILD Project worked to encourage the uptake of EWGS grants, and sees EWGS as a means to ensure the long-term management of Berkshire's ancient woodlands beyond the life of the BeWILD Project by providing a structure and a framework of grant aid, forestry advice and support.
- Volunteers are a valuable and important resource/tool in the sensitive management of woodlands because they provide the means to carry out work which would otherwise be uneconomical, such as the restoration of neglected woodlands with the time-consuming, labour-intensive and careful work of coppice restoration. They are also able to work in woodlands with limited access or on small, sensitive or steep sites, where contractors with machinery could not. The capital investment required and the impact on a woodland when using volunteers is therefore minimal.
- Involving volunteers in woodland management provides social and health benefits, opportunities for learning new skills, and the potential to get more involved with woodland management.
- The BeWILD Project facilitated the development of partnerships between volunteers and woodland owners. In one case, the volunteers took on responsibility for the management of the woodland on a voluntary basis in exchange for firewood.
- Local volunteer groups continue to work in several ancient woods as a result of the relationships made with the woodland owners during the BeWILD Project, with mutual benefits for the owners, volunteers and wildlife.

### PROBLEMS & LIMITATIONS: What could have worked better

- It was harder than expected to engage woodland owners in taking up EWGS, even in having a woodland management plan produced, with woodland management often seeming to be of low priority relative to other farm work.
- Woodland management work carried out by volunteers largely using only hand tools means that for a huge number of man hours a relatively very small area is brought back into management. We're never going to bring Berkshire's ancient woodlands back into management just with volunteers. The answer lies in working at a range of scales appropriate to the specific tasks and situations.
- With a very limited budget, the BeWILD Project was only able to pay for or contribute towards a small amount of woodland management work carried out by contractors, highlighting the importance of a woodland project such as BeWILD to focus on



facilitating and supporting others to carry out management work, be they woodland owners, managers or volunteers, and to take up EWGS grants to enable management work to take place.

- The BeWILD Project did not attach any conditions to the woodland management work carried out and funded by the Project. This reduced associated paperwork and maximised output, but no mechanism was put in place to ensure that the work was continued, completed or maintained. For example, deer fences should be maintained to be deer proof, and coppice regrowth should not be allowed to fail but have on-going management. However, as FWAG no longer exists, it is unclear who would enforce such conditions had they been put in place.

## **FINDINGS & RECOMMENDATIONS: Lessons learned**

- **Increase understanding of woodland management** There is still much work to do to increase the awareness and understanding of woodland owners and managers with regards to: the need for and positive benefits of Berkshire's ancient woodlands being managed, the amount of work involved in the ongoing management of a wood and in the restoration of a neglected wood, raising the priority of woodland management, and disbanding misconceptions about the Forestry Commission's EWGS schemes and making known their benefits.
- **EWGS isn't the answer for all woodlands**, particularly those small neglected woodlands where the restoration phase is slow and generally uneconomic, even with the support of EWGS grants. Nor is it the answer for all woodland owners, some of whom don't want to be tied in to another government scheme and perceive lots of paperwork associated with EWGS.
- **The distribution of the work** undertaken by a project is so dependent on the funding or match funding available and its geographical restrictions, but also on the networks and contacts which have been established in an area; hence the reason it is always slow to start up a new project in an area with no historical presence. The BeWILD Project benefited enormously from the long-term working relationship of the Pang, Kennet and Lambourn Valleys Countryside Projects (FWAG) with farmers and landowners in West Berkshire, and also from TVERC's relationship with local authorities and woodland owners across Berkshire.
- **Need for a local Woodland Project** As a result of the contact the BeWILD Project has had with many small woodland owners, it is clear that there is a role for projects like BeWILD to work with small woodland owners, many of whom have previously received very little woodland management advice. Having a full-time woodland project officer on the ground to provide site-specific support and advice to woodland owners, to guide them through the woodland management plan process, and to be signposted to grant schemes such as EWGS and LEADER, appropriate consultants and contractors, available timber markets and woodfuel hubs is an enormously beneficial resource.
- **Working primarily with small woodland owners** is not the most efficient way for a woodland project to bring the largest area of ancient woodland back into management, but this is the nature of a large proportion of Berkshire's ancient woodlands. They are often small and fragmented, which inevitably means working with a large number of woodland owners. Woodland ownership in Berkshire seems to lie at the extremes, with many small woodlands individually owned and many large estates who often own 100+ hectares of woodland.

## TOP TIPS FOR WOODLAND PROJECTS

- Try and get a full-time project officer in post to develop and deliver the Project.
- Make good use of local contacts and networks of farmers, landowners and woodland managers in order to get a Woodland Project off the ground.
- Work with other woodland and forestry associations such as Forestry Commission, Woodland Trust and the Sylva Foundation, identify joint priorities and targets and make use of the support, grant aid and advice they can provide.
- Target those woodlands which best meet your Project aims; eg if the priority is biodiversity, then target ancient, LWS or SSSI woodlands. Be aware of the time and effort taken to get woodland owners interested in woodland management plans, and getting them produced, especially if the owner or woodland is not registered with the Rural Land Registry and Rural Payments Agency.
- Use a range of delivery mechanisms ie volunteers and contractors in order to maximise the amount and appropriate scale of woodland management work.
- Make good use of local groups of volunteers to work on small, sensitive or steep sites, in woodlands with limited access or in the uneconomic restoration phase doing time-consuming work such as restoration coppicing.
- Where to find your volunteers? If you don't have a historical association with a local volunteer group, then contact your Local Authority, Green Exchange or Rural Community Council to find out if there are any local volunteer groups in your area. Otherwise contact The Conservation Volunteers (BTCV as was) or investigate the possibility of working with local parish groups to manage a nearby woodland.
- Make sure volunteers know they are appreciated; look after them on site by giving them lots of encouragement, tea and biscuits, bonfires and baked potatoes wherever possible and appropriate, and plenty of heartfelt thanks.
- Work towards the sustainable management of the woodlands in the Project area after the Project has finished, by building in a legacy to ensure woodland management work will be ongoing, eg by getting woodland management plans in place and programmes of work underway.



## 7. ISSUES ASSOCIATED WITH WOODLAND MANAGEMENT

### 7.1 Different scales of woodland management work

The BeWILD Project primarily worked in small woodlands at the less economically viable and small-scale end of the management spectrum, with management undertaken primarily by volunteers or woodland owners and occasionally contractors. As a result, the Project worked through the logistical and economic issues of small neglected ancient woodlands.

However, in considering ways and means of bringing woodlands in general back into management, and in thinking about the requirements for the long-term sustainable management of Berkshire's woodlands, we need to address the needs and issues associated with managing both small and large woodlands. Although large-scale management doesn't preclude managing woodlands ecologically for wildlife, it does bring with it more issues which need to be considered. The issues discussed below are designed to help future woodland projects plan management work and understand the implications of different scales of operation.

Every management operation in every woodland should be bespoke, if working with a well qualified and experienced woodland advisor or forestry consultant, so that the work done is in line with the desired aims and outcomes. For some woodlands, the priority might be timber crop production, for others it might be game rearing and shooting, or conservation and biodiversity. These considerations plus various site factors such as location, slope, ground conditions and access all have a role to play in the size and scale of operation, the appropriate machinery and choosing the right contractor for the job. Not all woodland management contractors work at the same scale; some specialise in large-scale mechanised harvesting, while others will selectively fell with a chainsaw and winch out trees from a difficult wet or sloping site or from a sensitive area.

#### ***7.1.1 The fine line of ecological and economic woodland management***

Managing an ancient woodland sensitively to protect and conserve its biodiversity value, as a reservoir of ancient woodland species and habitats, and ensuring the management is self-financing in order to be sustainable in the long-term is a difficult balancing act. It requires specialist ecological and forestry expertise to maximise the value of the timber which is extracted in order to deliver the ecological benefits, and make full use of the grants available. It may be that some ecologically poorer areas of the wood are worked harder, ie thinned more regularly in order to be more productive, as a means to pay for the more sensitive management of ecologically valuable areas.

#### ***7.1.2 Keeping up with rotational woodland management***

Whatever the spatial and time scale you're working at, delivering the woodland management work at the desired rate in line with the rotational cycle is a long-term commitment. Whether a volunteer group or woodland owner aims to coppice a 1 acre (0.4ha) coupe each year in order to restore an 8 year coppice rotation, or a 100ha woodland is being worked on 100 year rotation, so that 1ha needs to be thinned or felled and restocked each year, or 5ha has to be done every 5 years. 100ha of coppice cut on an 8 year rotation means that 12.5ha must be cut every year. You soon realise that to work at a



sustainable rate and keep the woods actively managed you have got to do a lot of work. There are generally not enough skilled forest workers to do all the motor-manual work, and the more work you do the more timber you have to sell. The key is to work at the appropriate scale for the woodland, its situation and conditions and the market you are aiming the produce at.

Long-term however, it is difficult to ensure that a programme of woodland management work will continue when relying on the availability of local volunteer groups, particularly where they are dependent on local woodland and countryside projects for their existence, or for trained leadership or support. For example, the demise of FWAG could have put the work of the Pang Valley Conservation Volunteers in jeopardy, had they not been such a well-established, committed and experienced group of volunteers.

### ***7.1.3 Production of and markets for high-quality coppice products***

In order to produce high-quality coppice products, areas need to be managed specifically for coppice crops. These coupes need to be a reasonable size to minimise the edge effect of shading and browsing, ideally at least one acre (0.4ha) in size, and the number of standards needs to be limited to a few per acre in order to minimise shade which impedes coppice regrowth. It is in these near-monoculture stands with a high stool density where high-value hazel rods for hurdle-making and thatching spars worth £1,000/acre (£2,500/ha) are grown. It is only in these conditions that stools will produce large numbers of long straight rods, making it economically viable to harvest them, especially as there is strong competition from large-scale production in Eastern Europe.

There is a demand for high-quality locally produced British hazel rods from local craftsmen such as hurdle makers and master thatchers, but the demand is currently very limited. The number of craftsmen is low and the volume they require is small, as even a good coppice worker doing nothing else needs at most 4 acres of good coppice a year, so the coppice needs to be high quality to be worth restoring. All these factors have contributed to areas of poorer quality coppice having been left and become derelict. In order to ensure good coppice regrowth, a good ride infrastructure to allow easy access and extraction through the winter, and either good deer control or deer fencing need to be in place, which require investment. Little bits of coppice restoration will never find a decent market other than for firewood, so the management objectives in these instances need to be regarded as nature conservation, rather than growing a coppice crop, which probably requires funding.

It may be possible to re-establish productive areas of coppice in an ancient woodland, as Charles Flower is attempting to do at Maplesh Copse, and these areas could generate income which will help pay for the management of other areas of the woodland. It is however not desirable or realistic to try and convert every small area of old coppice into an intensive coppice production system, as there are currently not sufficient markets to take all the coppice timber these areas could potentially generate, and the economic return is low, with only the very best quality coppice able to generate a healthy income. Intensive coppice production does however have a role and a valuable place in an extensive woodland landscape.

#### ***7.1.4 The benefits of large-scale woodland management***

Large-scale woodland management benefits from the principles of the economies of scale and is therefore able to operate in a profitable manner. Large estates with several hundred hectares of woodland can employ foresters and a team of people or as is more often the case, a forestry consultant and contractors who are responsible for the management of the woodlands, as well as invest in machinery and deer fencing. Woodland management contractors and commercial forestry operations need access into a woodland from a road, and need a decent ride network within a woodland in order to carry out management work and extract timber, which in turn requires capital investment and outlay prior to any return.

With larger areas of woodland to manage, specialist contractors can be employed, and larger parcels of timber are more easily produced which can be divided up into single species stacks or specific length or diameter products and therefore sold for a higher price. Large-scale commercial woodland management can also afford to pay consultants with their specialist knowledge of timber value and markets.

Organising large-scale forestry work requires many different skills and therefore many different contractors, such as harvesting gangs, mid-range felling and extraction teams, skilled hardwood fellers, tree surgeons, planting contractors, felling contractors, plantation maintenance teams, fencing gangs, digger drivers and hauliers. It is important to have the right team doing the right job, and the appropriate contractors for the site, which is why it is important to use experienced forestry managers or consultants who have good contacts with all the relevant contractors.

#### ***7.1.5 Concerns associated with large-scale management ie machinery use in woodlands***

When using machinery as part of woodland management, even taking a small tractor into a wood to pick up a load of hand cut firewood, there is inevitably the potential for disturbance and damage. All woodland and forestry management should follow the guidelines set out in the UK Forestry Standard <http://www.forestry.gov.uk/theukforestrystandard> Some of the concerns for woodlands as wildlife habitats when managed on a large-scale are listed below:

##### **a) Damage to soils and watercourses**

Concerns with regards to the compaction, ripping up and erosion of woodland soils, and the rutting and widening of woodland tracks and rides during wet ground conditions. In order to avoid the bird nesting season ecologists prefer to see woodland management work carried out during the rest of the year, but this coincides with the wetter periods of autumn and winter, resulting in potentially greater and long term soil damage.

With rutting and tracking over wet soils comes the risk of silt-loaded runoff into woodland ditches and streams. Together with silt, there is the potential for pollution of woodland watercourses with diesel and oil from forestry machinery.

The impact on wet soils can be minimised by avoiding wet areas where possible, and by felling and winching trees out of wet areas. Where access is necessary, using brush mats will minimise the effects of compaction and rutting, erosion and runoff. The brush mat should be removed after the forestry operation however if the route is not to become a permanent ride, otherwise it will impede the regeneration of woodland flora.

**b) Damage to vegetation**

With the trafficking of machinery through woodlands and the dragging of trees, there is huge potential for the disturbance and destruction of woodland ground flora. The disturbance of soils will inevitably change established ground flora communities, favouring those species that like disturbed conditions, ie the pioneer species such as nettles and brambles. Ancient woodland ground flora communities are precious and valuable because they have developed over many centuries with limited disturbance. As much as possible forestry machinery should work from a network of woodland rides, with limited trafficking over woodland soils. Minimising compaction will improve the success rate for regeneration and re-planting of trees.

**c) Disturbance to wildlife**

Where there is large-scale management work, there is the potential for disturbance to wildlife, be it birds, invertebrates, bats and dormice. The Forestry Commission has produced best practice guidance on woodland management for wildlife<sup>8</sup>. However, in order to ensure that woodlands can be managed, in order to maintain them as good habitat for wildlife, a pragmatic approach needs to be taken. For example, any forest worker carrying out work during the bird nesting season needs to be aware and vigilant for any signs of bird breeding or bird nests, and leave a tree untouched if a bird nest is seen in it.

**d) Fragmentation of habitats within a woodland**

Highly mechanised operations with large machinery need to work at a large-scale, and often result in the clearance of large areas of woodland, which could mean several hectares at a time. However sensitively the management is carried out, the scale has huge impacts on wildlife, with small animals unwilling or unable to cross large open areas. In order to minimise this intra-wood habitat fragmentation, the felling or clearance areas should be minimised to try to ensure that there is always connectivity between areas of established woodland with good cover to enable small mammals and invertebrates to move between areas within a wood.

**e) Development of access infrastructure within a woodland**

Creating a decent network of woodland rides or forestry tracks, areas of hard standing for timber stacks and machinery, turning areas for lorries and lay-bys all requires construction work and often the importation of materials into a wood. The area of hard surfaces and the area of a woodland affected by the construction process should be kept to a minimum with the process carried out as carefully and sensitively as possible. It is however important to make sure forest tracks are wide enough and turning and stacking areas large enough in order to avoid the cost and disturbance of having to extend them in the long run.

The use of geo-textile membranes at the base of a ride prolongs their life by improving drainage, thereby extending the time frame of ride maintenance or re-construction. The materials used should be as local as possible and in keeping with the nature of the woodland, for example creating low key minimum width gravel tracks in a woodland where

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<sup>8</sup> Regulations affecting habitats and wildlife

<http://www.forestry.gov.uk/forestry/INFD-92QE5W>

and guidance on protected species

<http://www.forestry.gov.uk/england-protectedspecies>

gravel is the underlying geology and crushed limestone tracks in a limestone area. Machinery storage areas, drying sheds and other associated infrastructure should be kept out of the woodland wherever possible.

**f) Protection of woodland archaeology**

As many ancient woodlands contain historical and archaeological features such as earth boundary banks and ditches or park pales, saw pits, old tracks and green lanes, evidence of ancient field systems, hill forts, or even 20<sup>th</sup> century pill boxes and trenches, there is potential for damage to these features during management work, timber extraction and road building. All historical and archaeological features should be surveyed and mapped ideally before any management work is carried out. They and their location should then be taken into account during any subsequent management work, timber extraction or infrastructure work to avoid damage to them, as they represent a very important part of the historical nature of ancient woodland habitats, where there has been no cultivation to disturb the archaeology and earth features for several centuries. The Forestry Commission's guidelines on the protection of woodland archaeology is set out in the UK Forestry Standard <http://www.forestry.gov.uk/theukforestrystandard> The BeWILD Project always recommended woodland owners to contact English Heritage if they had features of interest in their woodland.



Deer park pale built about 1240 ©Greenaway Collections

***7.1.6 Is large-scale woodland management appropriate for managing ecologically-valuable woodland habitats, and can it deliver nature conservation benefits?***

A large woodland may be better able to absorb any of the above changes and impacts, whereas the effects would be far greater in a small woodland, with a larger percentage of the area of the woodland affected. These detrimental impacts of woodland management need to be kept to an absolute minimum to avoid long-term impacts on the woodland soils, vegetation, habitats and consequently the wildlife.

If these concerns and the detrimental impacts of large-scale management are mitigated or minimised as described above, and the ecological benefits maximised as described in Woodland management for wildlife techniques in Chapter 5.1, then it may well be possible to manage woodlands on a large-scale with positive nature conservation benefits, through careful planning and modification of management practices, but it requires sensitive



management, a sympathetic forestry consultant, forester or woodland manager, and ideally partnership working with ecological woodland managers.

Ultimately the key is to work at the appropriate scale for the wood, where large coupes in large woods may be fine, taking into consideration its situation, ground conditions, wildlife habitats, designations and the presence of protected species. These issues also highlight the value of a co-ordination role in bringing together the specialists that are required to manage a woodland holistically.

## **7.2 Sustainability of woodland management**

The sustainability of woodland management is directly related to the economic viability. Woodland management needs to be paid for and needs to be financially sustainable in order to ensure continuity of management. Every woodland needs to be managed commercially, so that the sale of timber or processed timber products meets the cost of management, unless the woodland management is subsidised by some other income stream; the management of woods for game and shooting is a good example of this. There is a general agreement that the only way to secure the long-term beneficial management of woodlands, as important habitats and for wildlife, is to make it economically viable and cost-effective, by making the most of the timber resource present on site, ie matching it to the highest value timber markets available.

### ***7.2.1 Partnership working: multi-disciplinary teams***

Historically, the nature conservation sector has often taken a precautionary view of habitat management, particularly woodland management, being reticent of large-scale change of a habitat for fear of it having detrimental consequences. Consequently, they have generally managed woodlands in a small-scale and delicate way, using the principles of light touch, and often without forestry expertise. There are certainly benefits to be had both for ecological woodland managers and commercial foresters to working more closely together, with ecologists benefiting from foresters' understanding of the market value of timber and current markets in order to make woodland management more economically viable and sustainable in the long-term, and with foresters gaining from ecologists' understanding of woodlands as ecological systems, so that they can modify their current management practices to maximise the benefits for wildlife.

William Hamer, Forestry consultant comments that woodland ecosystems are much more robust than many give them credit for and almost all have been interfered with by man over the centuries. He says, It is no good being too precious about the wildlife; if we didn't do the work, the woods they would soon become derelict and no good for wildlife. Dr Keith Kirby<sup>1</sup>, a nationally recognised woodland ecologist at Oxford University refers to our woodlands as a cultural landscape. The worst thing you can probably do is nothing because the woods were likely much more intensively managed in the past.

### ***7.2.2 Holistic approach to woodland management***

A more holistic approach to planning for and carrying out woodland management which makes the most of the skills possessed by all those who work in woodland management, allows for a sensitive and sustainable way forward for the management of our woodlands. This in turn ensures their continued ecological value as a reservoir of ancient woodland species and habitats, and that their long-term management is possible and secured because it is economically viable. Berkshire's Local Nature Partnership, local authorities and the

North Wessex Downs AONB need to support partnership working and the benefits which multi-disciplinary teams can bring to Berkshire's woodlands.

A co-ordinator such as a woodland project officer can facilitate bringing together the various stakeholders and specialists of the woodland industry and woodfuel supply chain, namely woodland owners, and conservation, forestry and business interests in order to achieve good sound sustainable woodland management which takes into consideration the needs of wildlife, ensuring the holistic management of our woodlands.

### **7.3 Timber markets**

Below is a summary of the current British markets for Berkshire's timber products, including both coppice and forestry products.

#### **7.3.1 Coppice products**

- coppice crafts: thatching spars, stakes and binders for hedgelaying, hazel rods for hurdle making, faggots as bio-engineering tool for river and canal restoration projects, bean poles, pea sticks and horse jumps.
- fence posts
- firewood
- woodchip
- charcoal
- wood for turning

Value can be added to coppice timber by making it into besom brooms, turned chair legs, furniture, yurt frames, clothes drying racks, stick pots and toys. These are niche market craft products, for which there is a low volume market for specialist high quality products.

#### **7.3.2 Forestry products**

- Firewood – softwood or hardwood, preferably seasoned, can be processed to add value
- Woodchip – produced from lowest quality timber, which can be small diameter, not straight, lop and top and branches
- Paper pulp – low grade softwood timber
- Saw mill timber – for planks, flooring and furniture
- Construction timber – green oak beams and timber roof trusses
- Niche markets such as boat masts, hurling sticks and oak and cedar shakes (wooden roof tiles)

#### **7.3.3 Timber markets**

- Firewood markets: There are many local firewood merchants operating in Berkshire and the North Wessex Downs AONB, including the Seasoned Timber Company in Hungerford.
- Woodchip markets: It may be possible to arrange to sell woodchip direct to a user or woodfuel boiler owner, however this would require it to be processed and it is generally easier to sell timber to a woodfuel merchant who will then process, air dry and store it prior to sale. There are several local woodfuel suppliers in the area, which include: Thames Valley Bioenergy, Hillfields Wood Fuel Services, Hampshire Woodfuel Co-operative and South East Woodfuels. Slough Combined Heat and Power (CHP) plant is a large local market which will take low quality woodchip including landscaping waste but at a relatively low price.

- Paper pulp mills: Trees from Chilton Estate were going to a paper pulp mill up in north Wales. Kronospan is the nearest such market, but pine or spruce is better sent to Bedmax.
- Sawmills: Various estates have their own small sawmills for processing timber for their own use, eg into fence posts and for feather boarding cladding. It might be possible for local woodlands to supply these sawmills.
- Honeystreet Sawmills near Woodborough in the Vale of Pewsey supplying firewood, fencing and garden materials and providing a timber cutting service.
- RF Giddings & Co Ltd at Ringwood Road Sawmills in Bartley, Southampton, a softwood sawmill supplying sawn timber to the construction, fencing and pallet trades.
- AJ Charlton & Sons Ltd, who run Charltons Gates, Fencing and Landscape Products in Buckland Down between Frome and Radstock in Somerset have a sawmill which is the largest hardwood sawmill in the UK.
- Pontrilas mill on the Welsh borders cut both hardwood and softwood but are on the limit for haulage. East Bros mill in Hampshire and Vastern mill in Wiltshire are both quite big mills, but not at the scale of Giddings. There are smaller mills around the New Forest such as Andover Down, but they only take small amounts of timber.
- Construction: Specialist oak frame construction companies
- Flooring specialists: Whittle Woods in Inkpen near Hungerford and Upton Flooring company near Didcot. The Mawthorpe Estate near Alford in Lincolnshire process, dry and manufacture oak and ash flooring from their own woodlands, as well as making ash chassis for Morgan cars.
- Furniture makers: Benchmark and George Medlin both based near Hungerford are bespoke furniture makers.
- Wood turners: There are no known commercial scale turnery markets any longer any and the hobby turning market is tiny.

#### **7.3.4 On-line timber markets**

On-line market places and woodland mapping tools such as WoodLots Directory <http://www.woodnet.org.uk/woodlots/> and myForest <http://www.sylva.org.uk/myforest/> have a role in supporting woodland owners, but cannot replace the extensive knowledge of an experienced forestry consultant.

#### **7.3.5 Valuing timber**

It is clear from the huge number of markets and different-sized operations that matching the available timber from a woodland to the most appropriate market requires someone familiar and experienced in assessing timber and who knows the markets such as a forestry manager or consultant. The bulk of the timber volume sold will go to the lower value bulk markets with higher value niche market products being a bonus. Even the majority of hardwood sold is likely to go for firewood. The market needs to be appropriate not only to the type of timber, but its quality and volume. Big mills don't want to deal with the odd load from occasional suppliers, and small markets don't want to waste their time receiving timber of the wrong quality. It is a lot of hard work developing and finding markets and woodland owners and managers may be better off using a specialist such as a timber merchant to market their wood for them, paying a fee for the service. Timber marketing is its own specialist field.

### **7.3.6 Markets for timber from derelict ancient woodlands**

The timber from these woodlands primarily consists of large diameter hazel and other coppice crops such as alder, ash, oak and willow, poor quality standards, and often small diameter naturally regenerated ash and sycamore.

Low quality and large diameter hazel coppice can be used for firewood, as hazel is a hardwood and makes good firewood. Stakes and binders for hedgelaying and bean poles can be selectively cut from the smaller diameter rods, hazel rods and brash can be used to make faggots for river and canal restoration projects, and the brash can be used for pea sticks, as well as for protecting the regrowth of coppice stools from deer and rabbit browsing.

Standards thinned from within coppice coupes, from ride side and pond management, and from glade creation and sky lighting can either be sold for firewood, or if a large enough single-species parcel of decent quality timber can be put together from a wood, then it could be sold to a sawmill for planking. Firewood also has a premium if it is in a single species parcel.

Markets specifically for timber being produced from derelict or unmanaged ancient woodlands need to be identified and sought. Woodfuel in the form of woodchip is not the primary answer for small woodlands, unless there's co-operation between woodland owners or with machinery rings or woodfuel cooperatives, with the competition from large scale operations in the UK and in Europe. Firewood however is a much better solution and market for small local woodlands, being a local and smaller scale market.

Encouraging the on-farm or local use of low grade timber to provide local and suitable scale heat demands as firewood or woodchip will play a role in making the management of small woodlands more cost-effective and therefore more viable, as the BeWILD Project helped promote with the installation of a woodfuel boiler in the Hampstead Norreys community shop and the woodfuel supply chain event. With time we may become much more dependent on a local fuel economy and therefore a local timber economy.

### **7.3.7 Markets for Non-Timber Forest Products (NTFPs)**

Make full use of all that your woodland has to offer. A woodland is more than just trees. NTFPs are more widely recognised as a valuable woodland byproduct and income stream in local economies in the developing world or in poorer countries where local people still supplement their diets and their income by gathering and hunting wild foods for their own consumption and to sell. They are also a significant resource here in the UK, which to a large extent is as-yet largely untapped.

British Non-Timber Forest Products include:

- *Plants* –
- *Berries*; blackberries, rowan, elder, haws and guelder rose berries for hedgerow jelly and cordials,
- *Flowers*; elderflowers for elderflower cordial. Note, the beverage company Bottlegreen for many years sourced all of their elderflowers for their elderflower cordial from the wild with local people employed to forage for them. In recent years they have planted an elder orchard when their demand increased significantly.
- *Nuts*; hazelnuts or cobb nuts, chestnuts and walnuts where planted.



- *Fungi* - wild mushrooms and truffles
- *Wild game meat* - venison, rabbit, squirrel, pigeon, crow, rook, pheasant and partridge. More use should be made of game meat locally and nationally; it's tasty, free-range and would benefit our woodland habitats which would flourish as a result of a reduced grazing and browsing pressure.

### **7.3.8 Other ways of earning an income from woodlands**

Apart from selling what the woodland can grow, be it timber or NTFPs, there are additional income streams which can be generated from a woodland.

*Leasing shooting or beating rights to commercial shoots.*

- *Stalking rights.* These often provide a guaranteed annual income for a farm or estate, but needs to be regulated in order to ensure deer populations are being controlled and sustainably managed. The Deer Initiative has template stalking agreements which will ensure this.  
[http://www.thedeerinitiative.co.uk/best\\_practice/deer\\_management.php](http://www.thedeerinitiative.co.uk/best_practice/deer_management.php)
- *Game rearing and shoots, syndicate or commercial.* The Game and Wildlife Conservation Trust have lots of advice on managing woodlands for gamebirds with benefits for wildlife.  
<http://www.woodlandtrust.org.uk/en/planting-woodland/Documents/woodland-trust-woodland-creation-management-for-pheasants.pdf>
- *Recreation.* Guided walks, walks leaflets, visitor permits which allow use of private woods for walking, horse riding, cycling - mountain biking and down hilling, as well as motocross and four wheel drive users, although there are significant environmental issues associated with motorised recreation.
- *Teaching.* There is a significant and growing niche market in woodland crafts and skills courses, which include green wood working, pole lathing, chair making, charcoal making, horse logging, and basket making. Many of these courses are however run on the basis of the positive experience of the course itself or for hobby-purposes, rather than as providing the skills for developing a viable alternative career.

## 8. WOODFUEL

### 8.1 Producing woodfuel

#### ***8.1.1 Woodfuel in south east England***

There are 1,097,000ha of woodland in England, 270,000ha of which are in the south east, representing 24.6% of England's woodlands. The south east is England's most wooded region (woodland cover 14.1%), and therefore has a significant role to play in supplying the country's timber needs and in providing woodfuel as an alternative source of energy to fossil fuels.

The total area of ancient woodland in the south east is 130,885ha, which includes just over 87,000ha of ASNW (ancient semi-natural woodland) and just under 44,000ha of PAWS (plantations on ancient woodland sites), so that nearly half of all woodland in the south east is ancient woodland.

The Forestry Commission's aim is to bring 75% of the woodland area in the south east into management. The Forestry Commission south east area has committed to delivering 25% of the England Woodfuel Strategy target of 2 million m<sup>3</sup> per year by 2020. This equates to 0.5 million m<sup>3</sup> which they estimate to be just over half of the growth potential of the non-Forestry Commission woodland area of 235,000ha. This is based on conservative estimates of growth potential or annual increment of 4m<sup>3</sup> per hectare per year, producing a total increment of nearly 1 million m<sup>3</sup> per year. Current timber production in the south east is estimated at approximately 310,000-360,000m<sup>3</sup> of timber per year, with many of the privately owned woodlands either not actively managed or not producing to their full potential, and hence the huge potential for an increase in production from privately owned woodlands in the south east.<sup>9</sup> It is inevitable that some of this timber production will come from ancient woodlands.

#### ***8.1.2 Demand for and supply of woodfuel***

The appended document, Woodfuel potential and progress in South East England<sup>9</sup> contains information on woodfuel markets in south east England, including prices current as of April 2012. Please refer to this very valuable document for this information, rather than it being duplicated here.

Woodfuel markets, their scale, extent and growing number highlight a growing demand for woodfuel in the south east of England, and require a consistent supply of timber in order to meet these demands. Woodfuel has the potential to be a very real economic driver for woodland management, providing a market for low grade timber, and also ensuring that all of the timber harvested has a market, is saleable and can contribute to the financial sustainability of woodland management. However the market hasn't grown quite as quickly as people thought because the infrastructure hasn't been, and in many cases still isn't, there to access and extract the timber and to sell it. The Forestry Commission's Woodfuel

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<sup>9</sup> Figures from a Forestry Commission report, Woodfuel potential and progress in South East England by Matthew Woodcock, May 2012. See Appendix E.

Woodland Improvement Grant (Woodfuel WIG)<sup>10</sup> was created to address this issue, helping with the capital costs of improving access to and within woodlands in order to manage woodlands for woodfuel, and will be available until the end of 2013. Woodfuel as an incentive to bring woodlands back into management is still under question for many who have not yet got to grips with the management of their woodlands.

### ***8.1.3 Berkshire as a source of woodfuel***

Berkshire has 6.8% of the south east's woodlands, with a total of 18,307ha of woodland, split between 17,863ha non-Forestry Commission woodlands and just 444ha Forestry Commission woodlands. The total potential harvest from the non-Forestry Commission or privately-owned woods alone is 58,835m<sup>3</sup> per year, of which an estimated 36,986m<sup>3</sup> per year is suitable for woodfuel, which could yield approximately 85,000MWh of energy<sup>11</sup>.

These figures demonstrate that Berkshire has a role to play in the production of timber for woodfuel and in delivering the England Woodfuel Strategy's targets for the south east. The proposed county target for Berkshire is 35,000m<sup>3</sup> per year, some of which will come from its' ancient woodlands.

### ***8.1.4 Neglected ancient woodland as a source of woodfuel***

Under-managed woodlands primarily produce large diameter hazel and other coppice crops such as alder, ash, oak and willow, poor quality standards, and often small diameter naturally regenerated ash and sycamore, as discussed in section 7.3.6.

### ***8.1.5 Coppice as a source of woodfuel***

Matthew Woodcock from the Forestry Commission comments that, traditionally many of the broadleaved woods in south east England would have been managed as coppice, or as coppice with standards, with the stems being felled every 7 (hazel) to 15 (sweet chestnut) years and then allowed to regrow from the cut stump. Having a well-established root stock supporting regrowth, the growth rates of coppiced woods are significantly higher in their early years than would be possible from newly planted trees. Our ancestors found that this was the most effective way to produce the fuel and building material they needed. Using an estimated average growth rate of 6m<sup>3</sup> per hectare per year for mixed coppice crops, balancing growth rates of hazel (2m<sup>3</sup>/ha/yr) and sweet chestnut (8m<sup>3</sup>/ha/yr), traditional coppice management appears to offer considerable opportunities for woodfuel production, just as our ancestors found!<sup>11</sup>

### ***8.1.6 Other sources of woodfuel***

#### **Short-rotation coppice**

Timber crops planted as a source of woodfuel include willow and miscanthus species, and are known as short-rotation coppice (SRC). These crops are generally planted on arable land enabling mechanised harvesting and providing a commercially viable crop.

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<sup>10</sup> The Forestry Commission's Woodfuel Woodland Improvement Grant (Woodfuel WIG)  
<http://www.forestry.gov.uk/forestry/infd-8nqegx>

<sup>11</sup> These figures have been taken from the document, South East England woodland increment estimates, Forestry Commission May 2012, an extract of which can be found in Appendix F.

There is an untapped fuel resource in unmanaged woodlands which could be used to fuel a new generation of woodfuel boilers, rather than planting new sources of woodfuel such as short-rotation coppice (SRC) or conifer plantations. If the demand for woodchip grows, but this doesn't turn out to be a stimulus for woodland management, it would seem to be a huge missed opportunity for the future of our woodlands.

### **Hedgerow woodfuel**

Many hedgerows in England are managed only by trimming but represent a significant source of woody material which could be harvested through rotational coppicing for woodfuel, as is done in France through the bocage system, where the woodfuel produced is used to heat whole village communities. It is likely however that it will not become economically viable to harvest this woody material until the demand for woodfuel outstrips the supply from existing woodlands and plantations, unless it proves to be more cost-effective for Local Authorities to manage their hedges and roadside plantings in this way.

The Organic Research Centre Elm Farm and Thames Valley Energy are carrying out a research project into the potential of hedgerow woodfuel, developing short-chain systems harvesting biomass from existing landscape elements eg hedgerows for local energy and heat production<sup>12</sup>.

## **8.2 Supplying and using woodfuel**

### **8.2.1 Supplying woodfuel**

Please see the succinct but very useful guidance note from the Forestry Commission's Woodheat Solutions project entitled, Are you considering supplying woodheat? in Appendix G.

### **MAP 12: DISTRIBUTION OF WOODFUEL BOILERS IN BERKSHIRE** (see overleaf)

This map shows all the known locations of woodfuel boilers throughout Berkshire, including both woodchip and wood pellet boilers, and ranging from small domestic boilers to those in schools and hospitals, and largest of all, the Slough combined heat and power (CHP) plant. These boilers represent the current demand for woodfuel in Berkshire, the supply of which should as much as possible be met by Berkshire's woodlands.

### **8.2.2 Installing a woodfuel system**

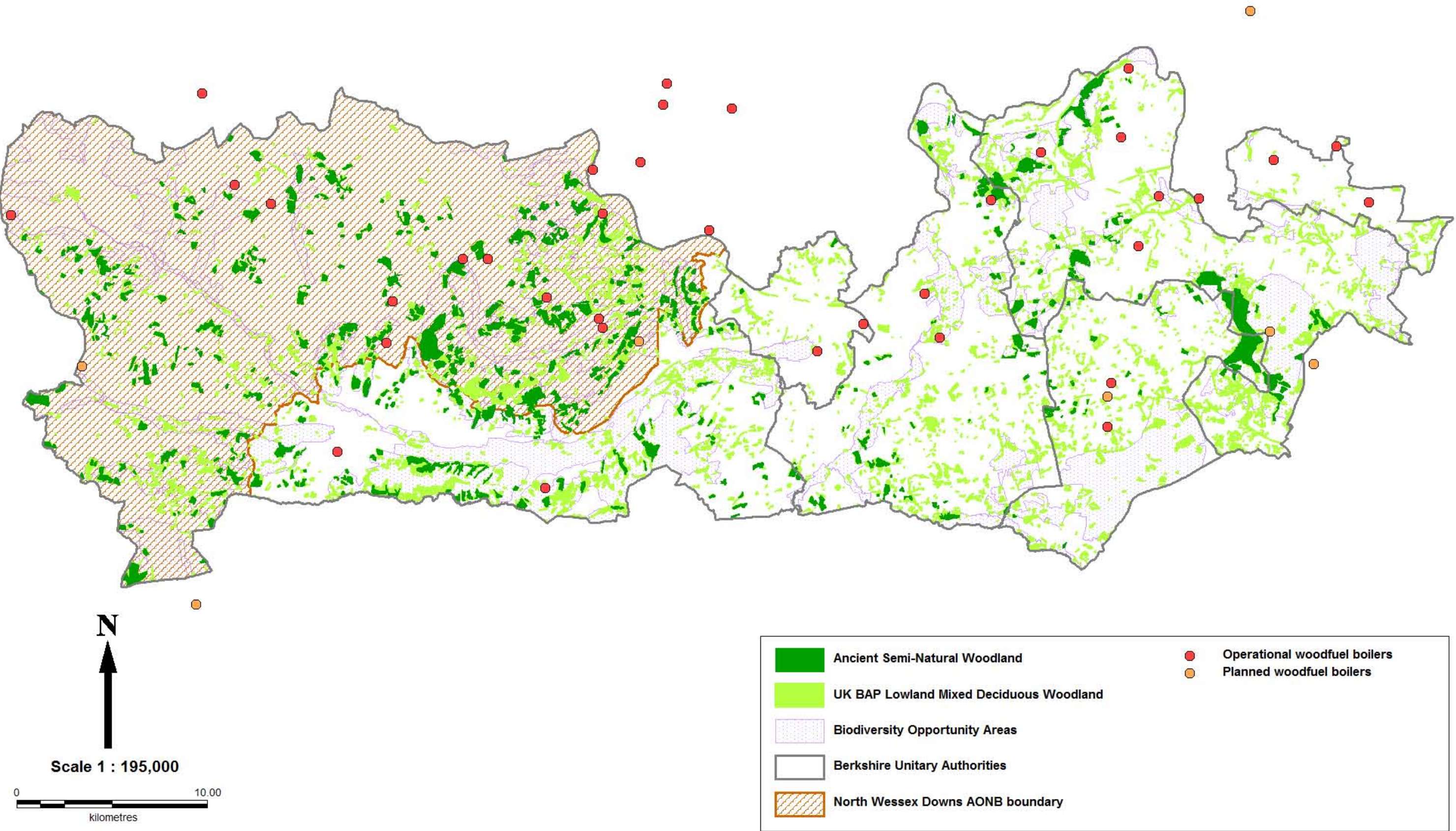
This report does not pertain to provide indepth information on the considerations, design and installation of woodfuel systems, but rather to signpost report-users to other useful and more specific sources of information from woodfuel experts. The document, Designing a woodheat system produced by the Forestry Commission's Woodheat Solutions project provides a very good overview of the whole process and all the required considerations, and can be found in Appendix H.

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<sup>12</sup> Contact Dr Jo Smith, The Organic Research Centre Elm Farm with regards to the Interreg European project TWECOM: Towards Eco-energetic Communities: Valorizing biomass from landscape elements for local energy or heat production  
<http://www.organicresearchcentre.com/>



MAP 12 : DISTRIBUTION OF WOODFUEL BOILERS IN BERKSHIRE





## **Case Study: BeWILD's woodfuel boiler story**

There was a strong steer from the Countdown 2010 Biodiversity Action Fund to try and put in place sustainable solutions to reversing the decline in biodiversity, and ensuring that there was a lasting legacy. As a result the BeWILD Project took an ambitious approach in wanting to create demand for local woodfuel, and therefore stimulate woodland management, through the installation of a woodfuel boiler. Several woodfuel boilers had been established in West Berkshire but some of these were wood pellet boilers rather than woodchip, and as a result were using pellets from outside of the region and even from other countries.

### **Funding a small-medium on-farm woodchip boiler**

The BeWILD Project wanted to facilitate the installation of a small to medium woodchip boiler which used locally produced woodchip. The boiler would be ideally located on a farm, perhaps heating a few cottages or workshops, with the woodchip supplied by on-farm and neighbouring woodlands. One of the most complex tasks of the Project was to find a suitable site and project partner for the woodchip boiler, who would work with the Project in supporting local sustainable woodfuel. With the relatively short time frame of the Project, the recipient site would need to have limited planning issues and be ready for a feasibility study. Installation of the boiler was scheduled for year three of the Project with all the required planning.

### **Finding a site for a woodchip boiler**

Once the Project was underway, the Project contacted Dr Gillian Alker who was working for Thames Valley Energy and was on part secondment to the Forestry Commission developing woodfuel projects. As part of a West Berkshire Council initiative to replace old oil-fired heating systems in schools with woodfuel boilers, Thames Valley Energy had carried out a survey of primary schools and had identified several potential schools whose heating systems would soon need replacing. Gillian was able to provide potential sites for the woodchip boiler, whose merits were considered, including:

- 1. Brightwalton School, Brightwalton.* After several meetings, it became clear that Brightwalton were interested in developing a larger village-scale heating scheme. As this meant a longer time frame for planning and consensus, it was not possible for the BeWILD Project to continue their involvement. BeWILD was however able to support an application to West Berkshire Council for a feasibility study.
- 2. John O'Gaunt School, Hungerford.* After contact with the school, it transpired they didn't want to take on the liability and responsibility of installing a woodfuel boiler and sourcing the woodfuel for it; they just wanted to pay for the heat produced and have a full supply and maintenance service provided. This can be provided by an ESCO (Energy Supply Company); for further details on this arrangement see the document *Are you considering supplying woodheat?* in Appendix G. Again the scale and timing were not compatible with the BeWILD Project.
- 3. Manor Farm, Hampstead Norreys.* The Betts family at Manor Farm had contacted the Forestry Commission regarding RDPE (Rural Development Programme for England) funding for a biomass project. They were in the process of funding a farm diversification project and had already received planning permission for conversion of a

yard of listed old farm buildings to holiday cottages, office space and a community shop. The installation of a woodfuel boiler was part of their redevelopment plan. Initial contact with the Betts revealed that they would be willing to consider a woodchip boiler and explore locally supplied woodchip.

### **Proceeding with Manor Farm, Hampstead Norreys**

After several meetings, it was decided to proceed with the Manor Farm site. The BeWILD Project paid for a feasibility study to be undertaken. Three quotes were obtained and Michael Beech from Thames Valley Energy was commissioned to do it, based on cost and the professional comprehensive approach. The study considered the following: heat load calculations, boiler size and specification, the layout of the heating system and district heating network and the lengths of underground pipework required to link the boiler to the required buildings, at a final cost of £2,650 plus VAT. The feasibility study provided all of the details required to progress the project and proved that woodchip was a practical woodfuel option.

Because the Manor Farm biomass district heat project was part of a larger diversification development, both SEEDA (South East England Development Agency) and the North Wessex Downs LEADER Programme had also funded different elements of the development, with LEADER part-funding the construction and fit out of the community shop, and SEEDA part-funding the conversion of the old farm buildings into self-catering holiday cottages and the installation of the woodfuel boiler. As SEEDA and LEADER funding is from European sources and Natural England's Countdown 2010 Biodiversity Action Fund was from government funds, there were no funding incompatibility issues, so that the BeWILD Project was able to part-fund the purchase of the specified woodfuel boiler.

### **The Hampstead Norreys Community Shop woodchip boiler**

The funding from the Countdown 2010 grant allowed the BeWILD Project to influence the type of boiler and the source of the woodchip. The boiler installed was a 60KW Austrian boiler called the Thermi-nator II and will use approximately 22 tonnes of woodchip per year. The woodchip boiler is sited close to the community shop, in its own purpose built building with a storage area for woodchip, and allowing easy access for lorries delivering woodchip. It provides hot water and space heating to the community shop and retail unit above, with future plans to extend the heating system to the neighbouring holiday cottages. The BeWILD Project contributed £12,500 plus VAT towards the woodchip boiler, which cost £39,000.



The 60kW woodchip boiler installed at Manor Farm, Hampstead Norreys is shown on the left, with the 3,000 litre buffer tank which stores the heated water on the right.  
©Meg Chambers

### **Local woodchip supply**

The potential for local woodchip supply was explored and found that neither of the local estates, Eling Estate or Yattendon Estate were currently producing woodchip themselves, although some of their timber was sold for woodchip. Other local woodchip suppliers were contacted, included Adrian Williams, a local tree surgeon who produces woodchip as a byproduct from his saw mill at Marlston and Rob Claridge at Hillfields Farm in Lower Basildon.

When the woodchip boiler was commissioned in December 2010, the woodchip was originally supplied by Cotswold Wood Fuels Ltd near Faringdon in Oxfordshire, but there were problems with woodchip quality, namely consistency and moisture content, so the Betts contacted William Hamer and the woodchip is now being supplied by the Hampshire Woodfuel Co-operative from the woodfuel hub at Micheldever in north Hampshire.

### **Promoting the Community Shop's woodchip boiler**

As part of this woodfuel element of the BeWILD Project, an interpretation panel was created for and installed on the front of the Community Shop to increase awareness and understanding of the woodfuel boiler being used to heat the shop and its part in the woodfuel supply chain; see Appendix I. Any visitors and shoppers will be able to learn about the benefits of the boiler to the local environment and to woodland management in particular.



Hampstead Norreys  
Community Shop, home of the  
BeWILD Project woodchip boiler  
©Meg Chambers



## CHAPTER 8 SUMMARY SECTION

### SUCSESSES & ACHIEVEMENTS: What worked well

- The partnership with Dr Gillian Alker from Thames Valley Energy proved invaluable in finding a suitable site and project partner.
- The BeWILD Project found a suitable site and project partner for the scale of woodchip boiler which it had hoped to fund and install, finding this site at Manor Farm, Hampstead Norreys.
- As the farmyard redevelopment project at Manor Farm was already underway, with planning permissions having been granted, the timescales for Manor Farm and the BeWILD Project married up enabling the Project to support the production of a feasibility study and the installation of a woodchip boiler to heat the new Community Shop.
- The Manor Farm woodchip boiler is supplied by a local woodchip supplier, Hampshire Woodfuel Co-operative, with the woodchip coming from Micheldever, north Hampshire, only 28 miles from the woodchip boiler.

### PROBLEMS & LIMITATIONS: What could have worked better

- Although several good contacts were made regarding a potential woodchip boiler site, there were various reasons why they didn't come to fruition, with the process of matching up the timescale and requirements of the BeWILD Project with those of the recipient site being quite particular and therefore slow.
- Sourcing woodchip from a local estate or from the immediate area of West Berkshire proved difficult, as even many of the large estates locally were not yet producing and selling woodchip.
- The woodchip supplier needed to be able to guarantee the volume, quality and consistency of the required woodchip, which small local woodchip suppliers were more likely to struggle to do.

### FINDINGS & RECOMMENDATIONS: Lessons learned

- There is a growing demand for woodfuel in the south east of England with the number and scale of installations on the increase, requiring a consistent supply of timber to meet these demands.
- Woodfuel has the potential to be an economic driver for woodland management, providing a bulk market for low grade timber which can contribute to the financial sustainability of woodland management.
- There is an untapped fuel resource in Berkshire's unmanaged woodlands which could be used to meet this demand, as long as it creates a stimulus for woodland management rather than the planting of short-rotation coppice or conifer plantations, which would be a huge missed opportunity for the future of our woodlands.
- Traditional coppice management appears to offer considerable opportunities for woodfuel production, with estimated average growth rates of 6m<sup>3</sup>/ha/yr for mixed coppice crops, and 2m<sup>3</sup>/ha/yr for hazel, based on limited figures. It is clear there is a

need for further research into the growth rates and production potential of hazel as a woodfuel crop, as it has traditionally been used for the hurdle and thatching market.

- The infrastructure needs to be in place to access and extract the potential timber supply, with the Forestry Commission's Woodfuel Woodland Improvement Grant (Woodfuel WIG)<sup>10</sup> designed to address this issue until the end of 2013.
- Woodfuel as an incentive to bring woodlands back into management is still under question for many who have not yet got to grips with the management of their woodlands.

## **TOP TIPS FOR WOODLAND PROJECTS**

### **Developing a woodfuel boiler project**

- Work in partnership with local woodfuel specialists such as Thames Valley Energy in order to identify a suitable site and project partner for a woodfuel boiler.
- Have a feasibility study produced by an independent wood heating specialist such as Thames Valley Energy, who will consider all the options and assess those most suitable for the site.
- Consider and plan for the logistics of woodchip delivery and on-site storage when designing the woodfuel heating system, in order to maximise the efficiency of the system by minimising transport costs and handling time, using an appropriate woodfuel consultant.
- Design the woodfuel heating system before planning permission is sought or subsidiary buildings built or converted.
- Choose a woodfuel boiler which will use locally available woodchip.
- Use a reputable and preferably local woodfuel boiler engineer to install the heating system, who will train up the person responsible for its day-to-day maintenance, and be available for servicing and trouble-shooting.
- Use local but well-established woodfuel suppliers such as the Hampshire Woodfuel Co-operative or South East Woodfuels in order to ensure the consistent quality and quantity of woodchip required.

## 9. CONCLUSIONS & RECOMMENDATIONS

### 9.1 Conclusions from the BeWILD Project

#### ***9.1.1 Delivery of the BeWILD Project***

The BeWILD Project delivered all it set out to, and in the end was greater than the sum of its parts. After 2.5 years, it had become a brand which Berkshire as a whole, in the form of the Berkshire Nature Conservation Forum, wanted to adopt and continue with through the establishment of another woodland project and was beginning to attract previously unknown woodland owners to our doors and established a new army of volunteers.

The Project benefited from being delivered by two organisations, Pang, Kennet and Lambourn Valleys Countryside Projects (FWAG) and the Thames Valley Environmental Records Centre (TVERC). Each organisation contributed their own areas of expertise, knowledge and contacts, ultimately enabling the Project to deliver more with the limited time and resources.

Co-ordination and collaboration is the key to ensuring that all conservation groups are promoting the same clear message so that the collective list of contacts and landowners receives the same information and reduces individual groups' efforts. Knowing the local conservation groups in the area can help achieve the mutually beneficial result of gaining new areas to survey or work on, whilst the landowner gets a free service of works or information about grants and funding streams.

#### ***9.1.2 Scope of the BeWILD Project***

In hindsight, it is felt that delivering the Project across the whole of Berkshire was too large an area, which stretched resources to the maximum and resulted in a broad and shallow approach. Working just in West Berkshire, where the Pang, Kennet and Lambourn Valleys Countryside Projects (FWAG) had good contacts with woodland owners, would have been a more realistically sized project area, allowing the Project to be more focussed and the work more targeted. However, this would not have fitted with the Countdown 2010 grant funding.

The scope of the BeWILD Project was also rather over-ambitious given the resources allocated to it, with aims to support woodland owners and managers at every stage of the woodfuel supply chain, from woodland management to woodchip supply, development of wood heat options and installation of woodfuel boilers.

The BeWILD Project did however address the whole spectrum of woodland-related issues and succeeded in raising awareness of the possibility and viability of managing woodlands for wildlife, promoting the opportunities for woodfuel, as well as generating extra woodchip demand with the installation of a woodchip boiler at Manor Farm, Hampstead Norreys.

### ***9.1.3 The role of the Forestry Commission's English Woodland Grant Scheme***

The Forestry Commission's English Woodland Grant Scheme (EWGS) isn't the answer for all woodlands, particularly those small neglected woodlands where the restoration phase is slow and generally uneconomic, even with the support of EWGS grants. Nor is it the answer for all woodland owners, some of whom don't want to be tied in to another government scheme and the associated paperwork.

### ***9.1.4 Weaknesses of the BeWILD Project***

- On occasion, the BeWILD Project funded work which could have been self-financing, for example the canopy thinning of a stand of 80-100 year old oak trees. As it was, BeWILD kick started the coppice restoration process and associated woodland management work and showed the woodland manager what could be done, how it would benefit the growth of the underlying hazel coppice and the value of the felled timber, which would contribute towards the cost of management.
- The BeWILD Project did not attach any conditions to the woodland management work carried out and funded by the Project, to ensure that the work was continued, completed or maintained, In light of the fact that FWAG no longer exists, it is unclear who would enforce such conditions had they been put in place however.
- The Forestry Commission have questioned the economic value of focussing on Berkshire's small isolated fragments of ancient woodland, which are less robust and ecologically resilient, suggesting that it may be better value for money to spend the limited resources available on extending, buffering and linking woodlands (including with new woodland planting), because of the diminishing returns of dealing with a larger number of smaller woodlands.
- Difficulties securing match funding were encountered during the BeWILD Project. Unfortunately the time taken to do this detracts from delivering the project's objectives, which is always a pitfall of partial funding.
- Feedback from participants of training workshops and events was not always collected. It is really important to collect relevant and useable feedback from all workshops and events organised, in order to ascertain whether they are meeting the needs and expectations of the target audience.
- It would have been useful to have used a GPS to record the locations and areas of woodland management work carried out by the BeWILD Project, and would have made the production of maps for this Report and the evaluation of the Project much easier and more definitive.



## **9.2 Recommendations: Securing the long-term management of Berkshire's ancient woodlands**

### ***9.2.1 How do we make sure our woodlands are managed?***

#### **a) Woodlands need to be appreciated**

Nature conservation and landscape organisations all promote the value of woodlands to woodland owners and the general public as a resource to be treasured and enjoyed.

#### **b) Woodlands need to be managed**

Dr Keith Kirby<sup>1</sup>, woodland ecologist at Oxford University refers to our woodlands as part of a cultural landscape, where all the land has been managed or changed in some way by man for thousands of years (Kirby 2012). Many species have consequently adapted to these managed habitats, and in order to preserve widespread and healthy populations of them, we need to continue to manage our woodlands as dynamic productive habitats. The training workshops and woodland events organised by the BeWILD Project promoted the ecological benefits of woodland management, and the need for and benefits of woodland management.

There is still much work to do to increase the awareness and understanding of woodland owners and managers with regards to: the need for and positive benefits of woodland management for Berkshire's ancient woodlands, the amount of work involved in the ongoing management of a wood and in the restoration of a neglected wood, raising the priority of woodland management, and disbanding misconceptions about the Forestry Commission's EWGS schemes and promoting their benefits.

#### **c) There needs to be a desire or economic driver to manage woodlands**

Whatever a woodland owner's motivation and whatever the management objectives for their woodland, be it as a capital asset, amenity resource, for its landscape value, for wildlife conservation, as a biodiversity reservoir, for shooting or for timber production, woodland management needs to be paid for and needs to be financially sustainable in order to ensure long term management, unless the woodland management is subsidised by some other income stream.

#### **d) Woodland owners need the knowledge and confidence to manage their woodlands**

The provision of training workshops and woodland events, such as those organised by the BeWILD Project, are important to provide the knowledge and support to woodland owners, to educate and enlighten them of the untapped potential that lies within their unmanaged woodland.

#### **e) Woodland management requires specialist advice**

The provision of specialist advice, either from a woodland project officer or a forestry consultant, can help ensure our woodlands are managed in a sustainable way which maximises the income from the timber produced, by selecting the best market for each product, as well as recognising the value of different woodland habitats. A specialist is also needed to assess the value and appropriate markets for timber crops, and recommend an appropriate contractor for the site and the job.

**In order for ongoing woodland management to take place, the following factors need to be in place:**

1. The interest, motivation and priority to manage woodlands
2. The knowledge and confidence to manage woodlands
3. The financial and labour resources to manage woodlands
4. Financial Support in the form of incentives and grant schemes
5. Access infrastructure to extract timber to roadside, stack and load it for market
6. Appropriate markets for the timber being produced

### ***9.2.2 Now is the time to manage our woodlands***

Now, at a time of heightened environmental awareness, a greater appreciation of the value of our diverse range of woodland types in the UK, increasing fuel prices and an increasing desire for fuel security, is a great time for the Comeback of Woodlands, as their value is once again recognised as reservoirs of fuel and construction materials, two of the mainstays of our society, for which woodlands were such important sources until the early-mid 20<sup>th</sup> century. With an increasing demand for fuel security and local energy generation, there is an increasing interest and demand for sustainable and renewable sources of energy including timber products such as firewood, woodchip or wood pellets used for power generation at CHP (combined heat and power) plants or for heating and hot water.

This coincides with good government support for the production of woodland management plans, woodland management itself, and for the generation of energy from renewable sources with the government's financial incentives, the Feed-in Tariff and of more direct relevance here the Renewable Heat Incentive<sup>13</sup>.

The challenge is to match the timber crops present in a woodland with the available markets in order that the management of a given woodland can pay for itself, releasing timber products and fuel onto the market and rejuvenating our derelict ancient woodlands, by bringing a diversity of age, structure, species and light conditions to our woodlands, breathing new life into them for the 21<sup>st</sup> century, and paving the way for their continued contribution to the UK environment and economy as a reservoir of valuable habitats and species, and a sustainable source of timber for its many purposes.

### ***9.2.3 How can we support woodland owners to bring their woodlands back into management, and to manage them for the long term?***

#### **a) Provide and signpost sources of support and advice for woodland management**

There are many national and local organisations that can provide advice on woodland management. However, having a local woodland project provides the benefit of acting as a one-stop shop for all woodland-related matters, signposting woodland owners and

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<sup>13</sup> UK government's Feed-in Tariffs

[http://www.decc.gov.uk/en/content/cms/meeting\\_energy/Renewable\\_ener/feedin\\_tariff/feedin\\_tariff.aspx](http://www.decc.gov.uk/en/content/cms/meeting_energy/Renewable_ener/feedin_tariff/feedin_tariff.aspx)

UK government's Renewable Heat Incentive

[http://www.decc.gov.uk/en/content/cms/meeting\\_energy/renewable\\_ener/incentive/incentive.aspx](http://www.decc.gov.uk/en/content/cms/meeting_energy/renewable_ener/incentive/incentive.aspx)

managers to other organisations for specialist advice, to local volunteer groups who may be able to help with uneconomic woodland management work, and supporting the woodland owner in collating that information to come up with a workable and appropriate plan for their woodland.

- National organisations such as the Forestry Commission, Royal Forestry Society, Woodland Trust, FWAG formerly, Natural England, RSPB and Butterfly Conservation.
- Local organisations such as the Pang, Kennet and Lambourn Valleys Countryside Projects (FWAG) (formerly), North Wessex Downs AONB, BBOWT.
- Local woodland projects such as the BeWILD Project (FWAG), the Oxfordshire Woodland Project, the Chiltern Woodlands Project, and the Sylva Foundation.
- Local ecologists, such as Jeremy Davy at West Berkshire Council, those who were formerly associated with the BeWILD Project, and Charles Flower, a wildflower specialist and consultant, who is expanding his business into the introduction of woodland wildflowers into new or degraded woodlands.
- Local historians and woodland archaeologists, such as Dick Greenaway.
- Local forestry consultants, such as William Hamer and others in woodland management companies or land agents.
- Woodland managers and contractors, such as Greg Vickers at Englefield Estate and David Hunt at Wessex Woodland Management.

A list of these useful woodland organisations, contacts and further woodland references can be found in Appendix J, Further woodland links.

#### **b) Signpost sources of financial support for woodland management**

- There are various sources of financial support for woodland planning, woodland management, the purchase of forestry and timber-processing equipment and financial incentives for the generation of renewable energy, but again a local woodland project provides the benefit of acting as a one-stop shop for signposting woodland owners and managers to these grant schemes.
- Forestry Commission grant schemes through the English Woodland Grant Scheme, including the Woodland Planning Grant, Woodland Improvement and Management Grants, and Woodfuel Woodland Improvement Grant. The Forestry Commission's current EWGS is due for review in 2014.
- The North Wessex Downs LEADER programme has funded quite a lot of forestry and timber-processing machinery and equipment, allowing woodland management companies to turn forestry waste ie brash and tops into woodchip, increasing the supply of woodfuel and in turn making woodland management more profitable/economically viable. Although this LEADER programme is coming to an end in 2013, it is hoped that a second generation of LEADER grants will become available in 2014.
- The UK government is very supportive of the generation of energy from renewable sources, having developed schemes such as the Feed-in Tariff and, of more direct relevance to woodland management, the Renewable Heat Incentive<sup>13</sup>.
- Financial support is crucial for the less economically viable small woodlands and for the uneconomic phase of woodland restoration.

### **c) Provide and signpost sources of advice for timber markets**

The key to making woodland management economically viable and sustainable is securing markets for the timber generated from a woodland. Without a sale, there is no income. It is a specialist field understanding and using the timber markets, and in a sector where the viability can be marginal, especially when considering small, ancient or neglected woodlands, it is crucial that the optimum and most appropriate markets are sought for the timber, in order to get the best price and the highest return as a means to pay for the woodland management itself. This often involves segregating the timber harvested into single species stacks or even separating and cutting up stems into different diameter products, in order to get the most value out of the timber generated.

Woodland owners and managers need help, support and advice in finding the right markets, with local woodland projects being in a position to direct people to specialist advice such as forestry or woodfuel consultants or timber merchants, as well as provide the opportunity to raise awareness of and promote appropriate markets, and possibly even look to develop local markets.

## **9.3 The way forward for Berkshire's ancient woodlands**

### ***9.3.1 Developing co-operation and collaboration***

#### **a) Producer groups and Woodfuel hubs**

There are benefits to be had in buying materials, organising woodland management contracts and selling parcelled up lots of timber in collaboration with other woodland owners and managers, particularly for small woodland owners. Bulk buying capital items such as deer fencing works out cheaper, and organising felling or thinning contracts for areas of several small neighbouring woodlands could make the process more cost-effective, minimising the transport costs of machinery, and making the amount of work worthwhile for a woodland contractor. The amount of timber generated by this means would also be larger, creating a decent parcel of timber to sell. This obviously requires co-ordination and the will for woodland owners to collaborate with their neighbours.

Woodfuel co-operatives such as Hampshire Woodfuel Co-operative<sup>14</sup> offers a local market place or woodfuel hub for low grade timber suitable for woodchip which meets the needs of both woodland owner/timber supplier and woodfuel user/woodchip boiler owner. With a small membership fee, it enables members to provide as much or little timber as the woodland owner has to sell and as often or infrequently as they want to supply it, with no penalties either way. The co-operative avoids the requirement for large amounts of start-up capital by each member effectively investing in the business with their timber, which they are paid for once it has been sold from the woodfuel hub. Having a central woodchip depot where the volume passing through is greater ensures security of supply and consistency of quality for users. There are many other woodfuel suppliers in the area which operate on a more conventional business model, including South East Woodfuels Ltd<sup>14</sup>.

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<sup>14</sup> Hampshire Woodfuel Co-operative  
<http://www.downfarmodiham.co.uk/biomass-woodchip>  
and South East Woodfuels Ltd <http://www.sewf.co.uk/>



#### **b) Machinery rings and Directories of contractors**

Developing machinery rings could be one way forward for woodland owners who don't own enough woodland to justify investing in the machinery needed to manage their woodland, such as a forestry tractor and trailer crane. This could equally apply to timber processing machinery for chipping or firewood. A more straight forward model however may be to have a directory of contractors who are happy to work on small contracts in small woodlands, where the machinery and operator is available for hire either on a day rate or for a specific job. Contact the Forestry Commission for a list of woodland contractors in your area.

### **9.3.2 Marketing timber products**

#### **a) Developing markets for timber products**

The Forestry Commission is committed to increasing timber production to 2 million m<sup>3</sup> per year in the south east of England by 2020, tapping into currently under-managed woodland resources and delivering 25% of the England Woodfuel Strategy target.

Work together with local forestry consultants and woodfuel groups to ascertain the situation with regards to current markets, and try and identify gaps in the market which could be developed and supplied by local woodland owners, for example locally-produced oak shakes or hazel fence posts for garden use.

Promoting markets for timber products requires research, promotion and awareness raising.

- Organise timber marketing workshops to raise awareness and understanding of the timber markets amongst local woodland owners and managers.
- Organise workshops on the production, quality and sale of woodfuel products, including both firewood and woodchip.
- Organise workshops on using myForest and WoodLots Directory in Berkshire and the North Wessex Downs AONB.

#### **b) Promote production of woodfuel**

There is a growing demand for woodfuel as the number of woodburning stoves and woodfuel boilers increases year on year, with many Local Authorities investigating the installation of woodfuel boilers. The demand for firewood has also grown hugely in the last few years.

There is a need to support woodland owners in developing the production of woodfuel products, making the most of the low-value or waste products of woodland management for which there was no market previously, ie the branches and brash, in supplying woodfuel to local firewood and woodchip merchants, and in getting satisfactory contracts in place either direct with the woodfuel user or with an intermediary agent such as a woodfuel aggregator.

There is the potential for local woodlands to supply local woodfuel boilers long term but it takes time to set these things up. We are moving into a period where there is more opportunity for wood products, but we still need to encourage woodland owners to take the plunge. One possible solution is for woodland owners to start to work in co-operation, following the model of the Hampshire Woodfuel Co-operative<sup>14</sup>.

We have existing woodlands of huge ecological value which need to be managed for their woodland habitats and species if for no other reason, let alone their vast untapped timber

resource. The Woodfuel WIG is now available to help with the capital costs of improving access to and within woodlands in order to manage woodlands and get the timber out and to market. Woodland management is never going to be a short term game with short term benefits; in line with the age and pedigree of these ancient habitats, the potential gains to be had are significant, long term and potentially sustainable.

There is a growing demand and market for woodfuel, both firewood and woodchip, allowing markets to be found for all the timber produced from a woodland whatever the grade, which minimises the unsaleable waste and maximises the economic viability of woodland management. One would hope that with time and the inevitable increase in the cost of fossil fuels, we will become much more dependent on a local fuel economy and therefore a local timber economy to secure the future of our woodlands as a productive and dynamic habitat.

### ***9.3.3 Set up a local Woodland Project***

The BeWILD Project has demonstrated a very real need for and the benefits of having a local woodland project in Berkshire, which can particularly support those owners and managers of small, ancient and neglected woodlands. It is these woodlands that are on the margins of economic viability, and therefore in the most need of support to bring them back into management and back to life, plus many have previously received very little woodland management advice. Having a full-time woodland project officer on the ground, working closely with woodland owners and the farming community to provide site-specific support and advice to woodland owners, to guide them through the woodland management plan process, and to be signposted to grant schemes such as EWGS and LEADER, appropriate consultants and contractors, available timber markets and woodfuel hubs is an enormously beneficial resource. A co-ordinator can also facilitate bringing together the various stakeholders of the woodland industry, namely woodland owners, conservation, forestry and business interests in order to achieve good sound sustainable woodland management which takes into consideration the needs of wildlife. It is only with a project officer in place that a landscape-scale approach to the restoration and management of ancient woodlands can be taken.

### ***9.3.4 Issues of bringing Berkshire's ancient woodlands back into management***

Many of Berkshire's ancient woodlands are small and fragmented, which inevitably means working with a large number of woodland owners. Woodland ownership in Berkshire seems to lie at the extremes, with many small woodlands being individually owned and many large estates who often own 100+ hectares of woodland.

The key to restoring woodlands and bringing them back to life through management is to introduce light into the woodland. This can be done in a number of ways: restore and open up a network of wide, light, warm and sunny rides, re-establish a coppice rotation system which creates temporary glades, create pocket glades off rides and larger glades within areas of the wood, open up the southern sides of woodland ponds and thin areas of dense dark standards.

The restoration phase of woodland management is pretty much uneconomical, and unless subsidised by another income stream needs support from grant schemes such as EWGS and/or a local woodland project.

Browsing pressure from deer especially, but also from rabbits and squirrels is a major issue for Berkshire's ancient woodlands with regards to their ecological value and timber production, and should be flagged up as a priority for any future woodland project. Deer browsing is a widespread problem across Berkshire, with the woodlands in some areas having little or no structure or vegetation under the high forest trees. The erection of deer fences is only a short term preventative measure. The solution, to manage deer populations to sustainable levels requires co-ordination of neighbouring landowners over a landscape-scale area.

### **BRINGING BERKSHIRE'S ANCIENT WOODLANDS BACK TO LIFE**

**By William Hamer, Forestry Consultant**

1. Assess what your woodland includes by way of timber crops, other sources of income and nature conservation interest.
2. Develop clear management objectives, seeking advice from specialists.
3. Direct the produce from your woodland to the best market.
4. Work at the most appropriate scale. Make the most of the economies of scale but work at a scale that suits the size of woodland and the markets your products are aimed at.
5. Co-operate with others to get the best result. Use the skills of established practitioners to fill gaps in one's own knowledge and capabilities. Working together helps achieve good scales of operation and access to markets.
6. Develop a woodland infrastructure which will allow suitable access to the woodland and allow woodland produce to be brought to the most appropriate market.
7. Make the best use of free money through grants, free advice where available and free labour from volunteers where they can make a meaningful contribution.

#### ***9.3.5 Recommendations for future Woodland Projects***

The distribution of the work undertaken by a project is dependent on the funding or match funding available and its geographical restrictions, but also on the networks and contacts which have been established in an area; hence the reason it is always slow to start up a new project in a new area with no historical presence.

It should be possible to manage woodlands on a large-scale with positive nature conservation benefits, but it requires sensitive management, a sympathetic forestry manager or consultant, and ideally partnership working with ecological woodland managers, with the mutual benefits of multi-disciplinary teams. Ultimately the key is to work at the appropriate scale for the particular wood.

Although small woodlands are considered less robust and ecologically resilient as island populations than larger woods, small ancient semi-natural woodlands (ASNW) are valuable because they represent ecological stepping stones in the landscape, reservoirs of ancient woodland indicator species (AWI) and ancient woodland key species such as dormouse. It is true that in isolation they have less value than larger ASNWs, but rather than prescribe non-intervention and let them fall dark and derelict, instead we need to buffer and link them

across ownership boundaries with hedges, scrub and buffer strips to other woodlands, areas of scrub, and other stable semi-natural habitats such as meadows and heathland, in order to create a complete network of wildlife corridors through the intensively-used landscape that is Berkshire.

There is the potential for a discrete Linking Woodlands Project in Berkshire, where existing wildlife corridors could be mapped, the gaps identified and bridged, and clusters of small woodlands, possibly in woodland Biodiversity Opportunity Areas (Biodiversity Opportunity Areas), could be targeted for linking and buffering, and tied in to the wildlife corridor network. This kind of project needs to operate at a landscape-scale in order to be effective.

### **TOP TIPS FOR WOODLAND PROJECTS**

- Try and make sure your woodland project ties in with the work and priorities of the local nature conservation forum or new Local Nature Partnership and has the support of the Local Authorities.
- Work closely together with the Forestry Commission and other woodland organisations and projects, identify joint priorities and targets and make use of the support, grant aid and advice they can provide. The support of the Forestry Commission is key to a successful woodland project.
- Promote partnership working between ecological woodland managers and forestry managers, contractors and consultants to make woodland management more economically viable and sustainable in the long-term, while maximising the benefits for wildlife.
- Work towards the sustainable management of the woodlands in your project area after the project has finished, by building in a legacy of getting woodland management plans in place and programmes of work underway.
- Promote and support the uptake of grant schemes such as the Forestry Commission's EWGS and Woodfuel WIG, as well as future LEADER grants for the purchase of capital items such as forestry machinery.
- Work at the appropriate scale for the wood, taking into consideration its situation, ground conditions, wildlife habitats, designations and the presence of protected species.
- Organise training workshops and woodland events to increase awareness and understanding of the ecological need for and benefits of managing woodlands, and how to manage them.
- Organise workshops on the production, quality and sale of woodfuel products, including both firewood and woodchip, and the role of online market places such as myForest and WoodLots Directory.



## 10. APPENDICES

## **APPENDIX A.**

### **WOODLAND TERMS**

## **APPENDIX A. WOODLAND TERMS**

### **Native woodland<sup>1</sup>**

Most of the native woodland in the UK is broadleaved, with trees that drop their leaves in winter, although in Scotland, there are also some native pinewoods.

Native woodland consists mainly of native trees, that is those that have grown here naturally since the last Ice Age and have not been introduced by humans.

At one time, this native broadleaved woodland would have covered much of the UK's landscape.

However, the UK is now one of the least wooded places in Europe. Only around 12 per cent of the UK is wooded compared with an average of 44 per cent in other European countries. And, only a small proportion of our woodland, around 40 per cent, is native.

### **Ancient woodland<sup>1</sup>**

Ancient woodland is defined as land that has been continually wooded since at least 1600AD. From 1600AD, planting of woodland became more common, so woodland that pre-dates this is more likely to have grown up naturally. Some ancient woods may even link back to the original wildwood that covered the UK around 10,000 years ago, after the last Ice Age.

Ancient woods are the jewel in our woodland crown. They are our richest sites for wildlife and are full of cultural heritage. Ancient woods are also some of our prettiest woodland - some have carpets of bluebells, wood anemones and celandines in spring.

But, not all ancient woods are the same. They vary from the native pinewoods in the Cairngorms of Scotland to the moist and lichen-rich oakwoods of the Atlantic seaboard and the flower rich coppice woodland in south-east England.

However, this is not the whole picture because there are actually two broad types of ancient woodland - Ancient Semi-Natural Ancient Woodland (ASNW) and Planted Ancient Woodland Sites (PAWS).

### **Ancient semi-natural woodland (ASNW)<sup>1</sup>**

Ancient semi-natural woodland (ASNW) has developed naturally on undisturbed soils. The long continuity of semi-natural ancient woods and their undisturbed soils makes it the most valuable natural habitat.

It supports a huge range of wildlife (including more threatened species than any other UK habitat) many of which require stable conditions (i.e. relatively unchanging compared to land outside the woods). Often, these species are unable to move easily so do not colonise new areas easily.

According to the UK's [Biodiversity Action Plan](#), in the last 100 years, 46 species of broadleaved woodland have become extinct in the UK.

Woods planted or growing up today will not become ancient woods in 400 years' time because the soils on which they have developed have been modified by modern agriculture or industry, and the fragmentation of natural habitats in today's landscape hampers species' natural movements and interactions.

Our remaining semi-natural ancient woodland is therefore irreplaceable. If we lose what little we have left then it is gone forever.

### **Plantations on ancient woodland sites (PAWS)<sup>1</sup>**

Plantations on ancient woodland site (PAWS) would have started life as ancient semi-natural woodland (ASNW) but the native broadleaved trees have been felled and non-native trees - usually conifers - planted in their place. Sometimes, conifers have been planted alongside the existing trees.

Many ancient woods were planted with non-native conifers in the period after the second World War, when timber stocks were low.

These non-native conifers were planted because they grew more quickly than our native species and so were ideal for timber.

However, because conifers have dense needles and keep them all year, and they are often planted so close together on these sites, they cast dense shade on everything below their canopy creating conditions quite unlike those usually found in an ancient semi-natural woodland (ASNW).

This dense shade has a dramatic impact on the woodland's wildlife.

Although some wildlife may survive in dense shade, much of our characteristic ancient woodland wildlife does not cope well. So, plantations on ancient woodland sites (PAWS) are generally poorer in wildlife terms.

### **UKBAP woodlands<sup>2</sup>**

The following categories of woodland are all considered to be broadleaved woodland (as defined by the current UK Biodiversity Action Plan).

They are:

- Ancient semi-natural woods (semi-natural stands on ancient sites)
- Other semi-natural woods (semi-natural stands on more recent woodland sites)
- Planted woods on ancient woodland sites where the composition is mainly site native species (over 50% of the canopy)
- Other planted woods of mainly native species (over 50% of the canopy is site-native species), where the agreed aim is to manage towards a more semi-natural structure and composition
- New native woodlands created to mimic the natural composition of the woodlands on the site



To qualify as a Habitat Action Plan (HAP) woodland, a site must have:

- 20% or more canopy cover, or the potential to achieve this in the case of newly planted stands.
- A canopy composed of 50% or more site-native species of trees or shrubs (or will be at canopy closure in the case of younger stands). Site native trees are those which are native to the locality and capable of growing naturally on the site, ie. they can successfully colonise and complete their life cycle.

There are several categories of native broadleaf woodland:

### **Lowland mixed deciduous woodland**

This is a large category that incorporates most of the semi-natural woodland in southern and eastern England, and in parts of lowland Wales and Scotland (as well as relevant planted native broadleaved woods). Despite great variety in the species composition of the canopy layer and the ground flora, some features are common to many stands:

- Occurs largely within enclosed landscapes, usually on sites with well-defined boundaries
- Many are ancient woods.
- Most sites are relatively small, less than 20ha.
- Most were traditionally coppiced, particularly those on moderately acid to base-rich soils; on very acid sands the type may be represented by former wood-pastures of oak and birch.
- Pedunculate oak (*Quercus robur*) is generally the commoner oak (although Sessile oak (*Quercus petraea*) may be abundant locally) and may occur with virtually all combinations of other locally native tree species.

### **Lowland beech and yew woodland**

Lowland beech and yew woodland spans a variety of distinctive vegetation types reflecting differences in soil and topographical conditions. Calcareous beech and yew forms perhaps 40% of the total amount of this priority habitat, beech woodland on neutral-slightly acidic soils comprised about 45%, and acidic beech the remaining 15%.

For Calcareous beech and yew woodland, Beech woodland on neutral-slightly acidic soils and Acidic beech woodland see the UK Biodiversity Action Plan.

### **Wet woodland**

Alder, birch and willows are usually the predominant tree species, but sometimes ash, oak, pine and beech occur on the drier riparian areas. Succession from open herbaceous wetlands results in a wide range of structures and compositions, determined by the composition of the original vegetation, the climate and the nutrient status. There is frequently a mixture of 'dry-land' species, for example around the base of large alders or willow.

## **Ancient Woodland Indicator list**

AWI species are those which are closely associated with old stable habitats, such as ancient woodlands. The greater the number of AWI species found in a woodland, the more likely it is to be ancient, but additional confirmation must be sought from old maps and documents.

The recommended list of ancient woodland indicator plants for Berkshire and the South is Keith Kirby's list from 2004. This Table of Ancient Woodland Indicator Plants (AWIs) collated by Keith Kirby, English Nature 2004 is published in *The Wild Flower Key: How to identify wild flowers, trees and shrubs in Britain and Northern Ireland* by Francis Rose, revised and updated by Clare O'Reilly Warne Publishers 2006 p558.

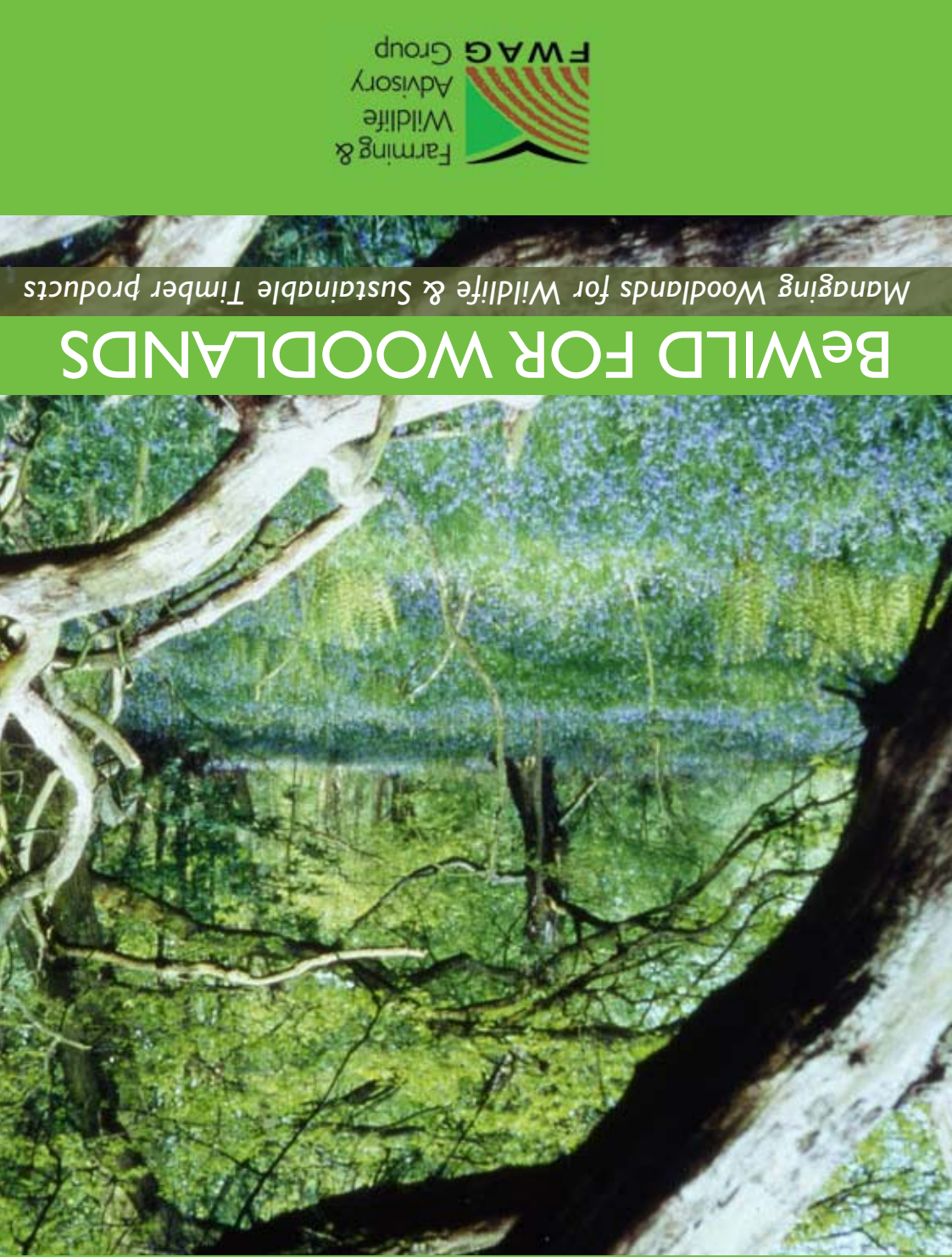
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2. South East Biodiversity Strategy, 2012  
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## **APPENDIX B.**

### **BeWILD PROJECT'S WOODLAND MANAGEMENT FOR WILDLIFE LEAFLET**





# BeWILD FOR WOODLANDS

BeWILD: Berkshire Woodland Improvements Linked to bioDiversity

## BeWILD: Berkshire Woodland Improvements Linked to BioDiversity

### Ancient woodlands are important

Berkshire's oldest woods are Ancient Semi-Natural Woodlands (ASNWs), which means they have been present as woodland since at least 1600AD. They are important because the land under them has not been ploughed for hundreds of years. Consequently, stable and very diverse communities of plants, animals and fungi have developed in these woodlands, and therefore most of them have been designated local Wildlife Sites.



Ramsons and bluebells in an ancient oak woodland © Greenaway Collections

### Why ancient woodlands need managing

Much of the woodland in Berkshire has been ploughed up, lost to development or replaced with coniferous plantation, with a 38% loss in the area of ancient woodland in the county in the past few decades. The remaining woodlands are therefore small scattered fragments, with only 3.2% of the county covered with ancient woodland in 1996. These small woods are less economical to manage and have largely fallen derelict over the last century. Lack of management results in them becoming very dark with little ground flora, thereby creating species-poor woodlands which are less valuable to wildlife.



Derelict coppice compartment

### BeWILD Project

This project was set up to address these issues and aims to promote and encourage the sustainable management of our ancient woodlands in Berkshire in order to:

1. increase and improve the area of suitable habitat for woodland wildlife, and
2. generate an income through the production of woodfuel and other woodland products, such as stakes and binders for hedgelaying and spars for thatching.

The aims are being delivered through:

- Site-specific management advice, including long-term management plans
- Funding for woodland management for woodland owners and managers, and 50% funding for the installation of a woodfuel boiler in the project area.
- Practical experience for volunteers in biological surveying of woodlands for bats, birds and flora, and the erection of bird and bat boxes and possibly dormouse boxes.
- Training opportunities in traditional

## Why ancient woodlands need managing

- woodland and hedgerow management skills such as coppicing and hedgelaying.
- Promotion of the income potential of woodland management for coppice products and woodfuel.
- Programme of walks and training seminars.
- Information leaflets and interpretation boards on the conservation management of woodlands and hedgerows.

### Management for wildlife

Management of derelict but valuable ancient semi-natural woodlands restores the traditional mosaic of habitats found in them, which range from open sunny woodland glades and rides to scrubby woodland edges and dark, damp stands of trees, as well as the ponds, ditches and plenty of dead wood which woods provide. By altering the age



Green woodpecker © Forestry Commission picture library

structure of a woodland, a greater diversity of plants and animals can be supported.



Coppicing hazel for stakes and binders © FWAG

### Management for sustainable timber production

Woodlands have the potential to generate additional income for farms and help cover the costs of their restoration through the production of logs or woodchip for woodfuel, and other timber products such as stakes and binders for hedgelaying and fencing materials.

There is always a demand for good quality from hedgelaying contractors.

For Wildlife Sites or woodland surveying, please contact Melanie Hardie, Thames Valley Environmental Record Centre on 01993 814147 or melanie.hardie@oxfordshire.gov.uk

c/o The Museum of Oxfordshire  
Fletcher's House, Park Street, Woodstock  
Oxfordshire, OX20 1SN  
www.tvrec.org.uk

For woodland management or funding information, please contact Karen Davies on 0118 930 5336 or karen.davies@fwag.org.uk

Country Side Project (FWAG)  
The Old Estate Office  
Englefield Road, Theale  
Berkshire RG7 5DZ  
www.pangandkennetvalleys.org.uk

We would like to hear from you if you own, manage or know of an ancient woodland which could be managed for the benefit of nature conservation and sustainable timber production. If you need a woodland management plan or management work carrying out, or if you are interested in installing a woodfuel boiler, please contact the Project/FWAG Office to discuss current opportunities.

## USEFUL ADDRESSES

Richard Pearce, Woodland Officer for Berkshire, South Oxfordshire and the Vale of White Horse at the Forestry Commission on 01296 696543

Sarah Wright, Natural England, Block A Government Buildings, Coley Avenue, Coley Park, Reading, RG1 6DT.  
Tel: 0118 958 1222

Jeremy Davy Ecologist, West Berkshire Council, Market Street, Newbury, West Berkshire RG14 5LD.  
Tel: 01635 519682

BeWILD is a Natural England Countdown 2010 Biodiversity Action Fund project


This project is being managed by the Pang, Kennet and Lambourn Valleys Countryside Project (FWAG) and delivered in partnership with the Thames Valley Environmental Records Centre (TVREC). Some match funding has been provided by the Friends of the Pang, Kennet and Lambourn Valleys.





# TRADITIONAL WOODLAND MANAGEMENT & WHO BENEFITS

3



Ten per cent of every woodland should be left permanently unmanaged creating damp, shady conditions which support specialist invertebrates and many beautiful and interesting species of mosses, lichen, liverworts and fungi, growing on trees, dead wood and the woodland floor.

Charterelle  
© Forestry Commission picture library


2



The typical structure of many traditionally managed ancient woodlands in Berkshire comprises widely spaced standard trees with a shrub layer of coppiced hazel stools and a field layer of flowering plants such as primroses and bluebells. Without management, the ground flora and shrub layer will be lost creating very dark dense stands of trees, which can only support a limited number of species, therefore creating woodlands less valuable to wildlife.

Photo: Typical structure of traditional ancient woodland  
© Forestry Commission picture library

3



The ancient or veteran trees present in Berkshire's ancient woodlands, many of which are pollards, greatly add to their value because of the habitat they provide for many other species of plants, animals and fungi and the presence of dead wood associated with them. Pollards are created using the same principle as coppicing, although they take the form of a single trunk with many fingers radiating from the crown. These ancient trees should be retained.

Photo: Veteran oak pollard © Greenaway Collections

1



For the first few years after coppicing, the sunlight pouring in results in a carpet of spring flowers such as primroses, ramsons (wild garlic) and wood anemones, to be followed by bluebells in April. Subsequently, the shrub layer regenerates providing young hazel regrowth for dormice and scrub habitat for nightingales and song thrush. A dense and shady structure of regenerating hazel and bramble will develop benefiting many birds. A regular coppicing programme maintains a diverse woodland structure and a range of valuable habitats

Primrose © Greenaway Collections

2



The dormouse is an European Schedule 1 protected species. If there is a chance that they are present, advice should be sought from us, The Forestry Commission or Natural England before carrying out any woodland management. Dormice love to eat the tender young shoots of coppice regrowth, as well as hazelnuts and fruits, and need veteran trees with hollows in which to make their nests. Providing nest boxes can help their success in your wood.

Photo: Dormouse © Forestry Commission picture library



3



Many of the invertebrate species of ancient woodland perform vital tasks such as recycling dead material, predating pest species such as aphids, and pollinating woodland flora. They are at the bottom of the food chain and are an essential source of food for some mammals and many birds, particularly for growing chicks.

Photo: Pair of stag beetles fighting © TVERC

In woods that have been traditionally managed, regular coppicing should be re-introduced on a rotation system, creating various stages of regrowth and therefore a diverse age structure from open glades to dense woodland.

This process mimics the stages of natural succession or regeneration in a woodland. The illustration above shows a cross section of vegetation, from the centre of a warm sunny ride or glade to cool dark woodland canopy.


The middle of the ride needs to be cut annually at the end of the summer to allow access, and the short grass provides another habitat for

plants such as barren strawberry. The taller grasses and herbs at the edge of sunny rides often include the larval food plants for many woodland butterflies, such as lady's smock and vetches. Cut on a three year cycle in late summer, after the flowers have set seed.

Sallow or goat willow grows in the shrub zone and is the food plant for the caterpillar of the purple emperor butterfly.

These shrubs should be cut or coppiced every 5-20 years. This illustration also represents the stages of regrowth in a coppice compartment.

3



Dead wood is an incredibly valuable habitat in woodland, as it provides food and shelter for invertebrates, lichen and fungi which are very important in recycling the nutrients in a woodland, by decomposing leaf litter and dead animals. Standing dead wood should be left where safe to do so, or otherwise piles of dead wood should be created.

Gnarled remains of old oak pollard  
© Forestry Commission picture library


1



Woodland edge habitat with a gradation from short herbs to tall grass, scrub and trees is the most ecologically rich part of a wood because of the range of habitats within a small area. Glades, rides and coppiced compartments also create these conditions and are therefore very important components in a wildlife-friendly woodland. These scrubby areas provide much-needed shelter and cover for small mammals and birds such as the long-tailed tit, and ideal habitat for woodcock.

Photo: Woodcock  
© Forestry Commission picture library


1



Many ancient woods contain archaeological features such as boundary banks and ditches or park pales, old tracks and green lanes or even hill forts. If you think you have one of these features in your wood or a Scheduled Ancient Monument, please contact English Heritage before any management work is carried out.

Deer park pale built about 1240  
© Greenaway Collections


1



Woodland rides and hedges, which link together woodlands and copses, form very important feeding corridors for bats such as the pipistrelle, noctule and brown long-eared because of the many moths and other invertebrates which live and shelter in them.

Brown long-eared bat  
© Forestry Commission picture library


1



Woodland ride and glade creation provide dappled light which benefits butterfly species such as the purple emperor, Duke of Burgundy and silver-washed fritillary, which have become scarce as a result of fragmentation and loss of managed woodland habitat.

Photo: Purple Emperor  
© Peter Eeles, Butterfly Conservation

1



The creation of wide woodland glades and rides where the sunlight can reach the woodland floor permanently, will encourage many flowering plants of ancient woodland, and provide sheltered sunny conditions perfect for butterflies and other invertebrates. These glades and rides should be mown in sections on a rotation system.

Photo: Wide sunny woodland ride  
© Butterfly Conservation



## **APPENDIX C.**

### **BeWILD TRAINING WORKSHOPS AND EVENTS 2008-2011**

## APPENDIX C. BeWILD TRAINING WORKSHOPS AND EVENTS 2008-2011

Event	Venue	Partner organisations	Date	No. people attended	No. attendees per year	No. events
<b>October 2008 - March 2009</b>						
Hedgelaying training Workshop	Poplar Farm, Cold Ash	Clive Leeke	13/01/2009	20		
Hedgelaying Training Workshop	Poplar Farm, Cold Ash	Clive Leeke	23/01/2009	8		
Woodfuel boiler Information day: 1 day seminar	Baydon Hole Farm, Baydon	Roger Forster, Bill Acworth, FC	03/03/2009	13		
European Protected Species Seminar	Knowl Hill Village Hall, Maidenhead	FC	31/03/2009	20		
Woodland management for butterflies & moths workshop	Tidmarsh Village Hall, Tidmarsh	Butterfly Conservation & BBOWT	25/03/2009	16		
Hedgelaying Training Workshop	Ball's Copse, West Woodhay	Clive Leeke	27/02/2009	11		
Hedgelaying Training Workshop	Ball's Copse, West Woodhay	Clive Leeke	27/02/2009	11		
Hedgelaying Competition	Pangfield Farm, Stanford Dingley	Pangfield Farm	07/03/2009	60		
Winter tree identification & bryophyte training day	Knowl Hill Village Hall, Maidenhead	Profs Crawley&Lucas,R Longton	31/03/2009	20		
<b>Summary details of events in 2008-09: 4 woodland skills &amp; 3 woodland ecology workshops, 1 hedgelaying competition, 1 woodfuel boiler event</b>					<b>179</b>	<b>9</b>
<b>April 2009 - March 2010</b>						
Ancient woodland indicator species training workshop	Cliveden Estate, Wokingham	National Trust, TVERC	26/05/2009	9		
Conserving the Drab Looper moth training workshop	Rushall Manor Farm, Bradfield	Butterfly Conservation	29/05/2009	5		
Moth identification & survey training workshop	The Malt House, West Woodhay	Butterfly Conservation	30/07/2009	8		
Restoration Coppicing Training Workshop	Holly Copse, West Woodhay	Clive Leeke	17/11/2009	13		
Coppicing for Stakes & Binders Training Workshop	Mapleash Copse, Snelsmore	Clive Leeke	01/12/2009	9		
Coppice Product Event: hazel quality & marketing	Rushall Manor Farm, Bradfield	FC, WM Hamer	14/01/2010	38		
Hedgelaying Training Workshop	Ball's Copse, West Woodhay	Clive Leeke	26/02/2010	10		
Hedgelaying Training Workshop	Ball's Copse, West Woodhay	Clive Leeke	27/02/2010	12		
Cold Ash Hedge Day	Poplar Farm, Cold Ash		02/03/2010	10		
Hedgelaying Competition	Pangfield Farm, Stanford Dingley	Pangfield Farm	06/03/2010	90		
<b>Summary details of events in 2009-10: 5 woodland skills &amp; 3 woodland ecology workshops, 1 hedgelaying competition, 1 coppice product event</b>					<b>204</b>	<b>10</b>
<b>April 2010 - March 2011</b>						
Ancient woodland indicator & woodland archaeology	Hampstead Norreys Village Hall	TVERC & Dick Greenaway	25/05/2010	22		
Are you adding value to your woodland? workshop	BBOWT, Woolley Firs, Maidenhead	BBOWT, Forestry Commission	12/06/2010	15		
Dormouse survey training day & nest box erection	Manor Farm, Crookham	TVERC	21/09/2010	21		
Winter Woodland Walks family event: veteran trees event	Ashampstead Common	D Greenaway&Woodland Trust	28/11/2010	11		
Hedgelaying Training workshop	New Barn Farm, Bucklebury	Clive Leeke	25/02/2011	11		
Hedgelaying Training workshop	New Barn Farm, Bucklebury	Clive Leeke	26/02/2011	12		
BeWILD Woodfuel Event: From Woodlands to Warmth	Manor Farm, Hampstead Norreys	FC, TVEnergy, Oxford Renewables	30/03/2011	69		
<b>Summary details of events in 2010-11: 2 woodland skills &amp; 4 woodland ecology workshops, 1 woodfuel supply chain event</b>					<b>161</b>	<b>7</b>

Note: These figures do not include the details of the Woodland Owner Days held in the woodland BOAs of East Berkshire

## **APPENDIX D.**

### **BeWILD CONSERVATION VOLUNTEER TASKS 2008-2011**

## APPENDIX D. BeWILD CONSERVATION VOLUNTEER TASKS 2008-2011

Conservation volunteer task	Task location	Date	Volunteer group	No. volunteers	No. vol days/yr	No. tasks/yr
<b>October 2008 - March 2009</b>						
Coppicing	Rushall Manor Farm, Bradfield	25/10/2008	PVCV	7		
Veteran tree management/Halo polishing	Ashampstead Common	18/11/2008	PVCV	11		
Coppicing	Holly Copse, West Woodhay	25/11/2008	PVCV	8		
Hedgelaying	Pangfield Farm, Stanford Dingley	29/11/2008	PVCV	6		
Coppicing	Mapleash Copse, Snelsmore Common	16/12/2008	PVCV	7		
Coppicing	Rushall Manor Farm, Bradfield	27/01/2009	PVCV	8		
Hedgelaying	Pangfield Farm, Stanford Dingley	17/02/2009	PVCV	8		
Veteran tree management/Halo polishing	Ashampstead Common	03/03/2009	PVCV	10		
Hedgelaying	Pangfield Farm, Stanford Dingley	10/03/2009	PVCV	7		
<b>Summary details of tasks in 2008-09</b>					<b>72</b>	<b>9</b>
<b>4 coppicing, 3 hedgelaying, 2 veteran tree management</b>						
<b>April - September 2009</b>						
Putting up dormouse boxes	Winterbourne Wood, Winterbourne	19/05/2009	PVCV	8		
Veteran tree management/Halo polishing	Leyfield Meadow	07/07/2009	PVCV	16		
Removal of non-native Himalayan balsam	Kings Copse, Bradfield Gate	14/07/2009	PVCV	11		
Glade clearance	Ashampstead Common	18/08/2009	PVCV	17		
Glade clearance	Ashampstead Common	25/08/2009	PVCV	15		
<b>October 2009 - March 2010</b>						
Ride and glade creation	Oaklands Copse, Rushall Manor Farm	04/11/2009	CROW	10		
Removal of non-native rhododendron	Hill fort SAM in Fence Wood, Hermitage	10/11/2009	PVCV	11		
Restoration coppicing	Braylands Copse, Enborne	21/11/2009	PVCV & BTCV	15		
Restoration coppicing	Braylands Copse, Enborne	22/11/2009	BTCV	12		
Ride and glade creation	Oaklands Copse, Rushall Manor Farm	24/11/2009	PVCV	15		
Hedgelaying	Pangfield Farm, Stanford Dingley	19/12/2009	PVCV	4		
Coppicing	Mapleash Copse, Snelsmore Common	12/01/2010	PVCV	2		
Coppicing	Winterbourne Wood, Winterbourne	19/01/2010	PVCV	7		
Scrub clearance	Barrow SAM in Park Wood, Hampstead Norreys	26/01/2010	PVCV	18		
Restoration coppicing	Holly Copse, West Woodhay	09/02/2010	PVCV	10		
Coppicing	Braylands Copse, Enborne	20/02/2010	PVCV	7		
Ride and glade creation	Oaklands Copse, Rushall Manor Farm	24/02/2010	CROW	10		
Cold Ash Hedge Day	Poplar Farm, Cold Ash	02/03/2010	PVCV	10		
Hedgelaying	Pangfield Farm, Stanford Dingley	09/03/2010	PVCV	6		
Coppicing	Rushall Manor Farm	17/03/2010	CROW	10		
<b>Summary details of tasks in 2009-10:</b>					<b>214</b>	<b>20</b>
<b>7 coppicing, 3 hedgelaying, 1 veteran tree mngmt, 3 removal of invasive spp, 2 glade clearance, 3 ride &amp; glade creation, 1 nest box erection</b>						



Conservation volunteer task	Task location	Date	Volunteer group	No. volunteers	No. vol days/yr	No. tasks/yr
<b>April - September 2010</b>						
Removal of non-native Himalayan balsam	Kings Copse, Bradfield Gate	29/06/2010	PVCV	14		
Glade clearance: bracken bashing	Winterbourne Wood, Winterbourne	01/07/2010	PVCV	2		
Glade clearance	Leyfield Meadow	06/07/2010	PVCV	13		
Bracken cutting	Kings Copse, Bradfield Gate	13/07/2010	PVCV	8		
Thinning	Winterbourne Wood, Winterbourne	01/08/2010	PVCV	2		
Removal of non-native Himalayan balsam	Kings Copse, Bradfield Gate	03/08/2010	PVCV	10		
Glade clearance	Ashampstead Common	10/08/2010	PVCV	13		
Surveying dormouse nest boxes & tubes	Winterbourne Wood, Winterbourne	20/08/2010	PVCV	3		
Glade clearance	Ashampstead Common	31/08/2010	PVCV	14		
Bracken cutting	Kings Copse, Bradfield Gate	14/09/2010	PVCV	14		
<b>October 2010 - March 2011</b>						
Removal of non-native rhododendron	Hill fort SAM in Fence Wood, Hermitage	05/10/2010	PVCV	8		
Pond clearance/ rhododendron removal	Winterbourne Wood, Winterbourne	12/10/2010	PVCV	14		
Removal of non-native rhododendron	Hill fort SAM in Fence Wood, Hermitage	19/10/2010	PVCV	16		
Restoration coppicing	Mapleash Copse, Snelsmore Common	09/11/2010	PVCV	20		
Restoration coppicing & hedgelaying	Braylands Copse, Enborne	13/11/2010	BTCV	11		
Restoration coppicing & hedgelaying	Braylands Copse, Enborne	14/11/2010	BTCV	8		
Veteran tree management/halo polishing	Ashampstead Common	23/11/2010	PVCV	11		
Coppicing	Manor Farm, Crookham	01/01/2011	PVCV	8		
Restoration coppicing	Winterbourne Wood, Winterbourne	07/12/2010	PVCV	10		
Coppicing	Kings Copse, Bradfield Gate	04/01/2011	PVCV	13		
Stool protection & coppicing	Braylands Copse, Enborne	25/01/2011	PVCV	10		
Coppicing & thinning sycamore regen	Curr Copse, Kintbury	05/02/2011	PVCV & BTCV	22		
Coppicing & thinning sycamore regen	Curr Copse, Kintbury	06/02/2011	BTCV	17		
Coppicing	Kings Copse, Bradfield Gate	08/02/2011	PVCV	9		
Coppicing	Mapleash Copse, Snelsmore Common	15/02/2011	PVCV	5		
Hedgelaying	Rushall Manor Farm	01/03/2011	PVCV	10		
<b>Summary details of tasks in 2010-11</b>					<b>285</b>	<b>25</b>
<b>12 coppicing, 1 hedgelaying, 1 veteran tree mngmt, 6 removal of invasive spp, 3 glade clearance, 1 pond mngmt, 1 dormouse surveying</b>						

**Note:** These figures do not include many of the nest box erection and dormouse survey tasks, which were carried out by TVERC and the Berkshire Mammal Group. A minimum of an additional 7 nest box erection tasks, 1 drab loop moth survey (with Butterfly Conservation) and 2 dormouse nest box survey tasks were carried out. These tasks are not included because volunteer numbers are not known, and some of these tasks took place just after the BeWILD Project finished.

## **APPENDIX E.**

### **WOODFUEL POTENTIAL AND PROGRESS IN SOUTH EAST ENGLAND APRIL 2012, FORESTRY COMMISSION**

## Woodfuel Potential and Progress in Southeast England April 2012

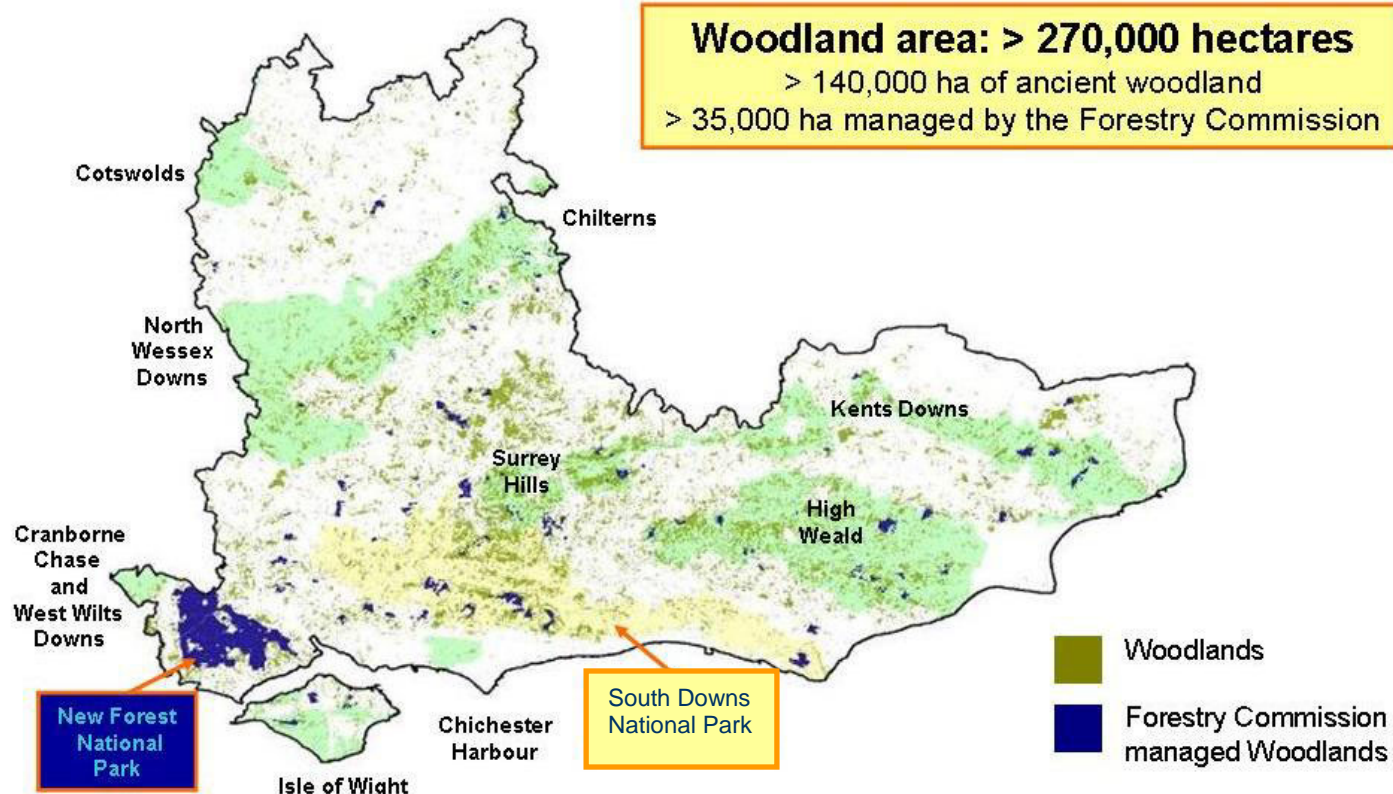
### THE CONTEXT:

#### National Context – Woodland Cover:

Area	Woodland Area	% Woodland Cover	% of England's total woodland
<b>South East</b>	<b>270,000</b>	<b>14.1</b>	<b>24.6</b>
South West	212,000	8.9	19.3
East England	139,000	7.3	12.7
North East	103,000	12.0	9.4
West Midlands	99,000	7.6	9.0
North West	96,000	6.8	8.8
Yorkshire & the Humber	92,000	6.0	8.4
East Midlands	80,000	5.1	7.3
London	6,000	3.9	0.5
<b>TOTAL</b>	<b>1,097,000</b>	<b>8.4</b>	<b>100</b>

#### Area Context – South East England:

Woodland cover characterises the protected landscapes (National Parks and Areas of Outstanding Natural Beauty)



## Key Facts:

Total land area:	1,909,600 ha	
Total woodland area:	> 270,000 ha	14% of SE land area
Total ancient woodland: (>48% of SE woodland and 36% of England's ancient woodland Includes > 87,000 ha of ASNW and < 44,000 ha of PAWS)	130,885 ha	
Forestry Commission managed woodland: (13% of SE woodland & 16% of FC managed woodland in England)	> 35,000 ha	

## Major Species:

	(Ha)	%		(Ha)	%
Oak	> 44,000	16	Scots Pine	> 23,000	8
Ash	> 26,000	10	Corsican Pine	> 6,000	2
Birch	> 25,000	9	Norway Spruce	> 5,000	1.8
Beech	> 23,000	8	Larch	> 4,500	1.7
Sycamore	> 5,900	2	Douglas fir	> 3,800	1.4
Sweet Chestnut	> 18,000	2			
Poplar	> 1,900	>1			
Total Broadleaf	> 219,000	81	Total Conifer	> 51,000	>19

**Note:** all figures drawn from NIWT (National Inventory of Woodland and Trees published in 2002. NIWT '2' will shortly be available to update these figures.

Sweet chestnut coppice figures drawn from FC Bulletin 64 (published 1987)

## Current Wood/Timber Production

Forestry Commission:

- Area = 35,000 ha (40% conifer/60% broadleaves)
- Average annual production = approx 160,000m<sup>3</sup> per year (approx 80% conifer)

Other woodlands:

- Area = 235,000 ha (15% conifer (39,000 ha) /85% broadleaves (196,000 ha)
- Estimated annual production = approx 150,000 – 200,000 m<sup>3</sup> per year.

Note: Felling licences or approved management plans are required before trees can be thinned/felled (over 5 m<sup>3</sup>). Less than a third of other woods (by area) are covered by an approved management plan or felling licence.

## Potential for Fuelwood

The FC southeast area has committed to delivering 25% of the England Woodfuel Strategy target of 2,000,000m<sup>3</sup> per year by 2020. This equates to 500,000 m<sup>3</sup> which we estimate to be just half the growth potential of the non FC woodland area of 235,000 ha.

If we conservatively estimate growth potential for these woods at 4 m<sup>3</sup> per ha per year, their annual potential increment = **1,000,000m<sup>3</sup>**. Harvesting half this increment for woodfuel = 500,000m<sup>3</sup> per year.

- Managed Scots pine will achieve YC8 (even allowing for open space in the wood)
- Managed Sweet chestnut or ash coppice will yield:
  - 15 year rotation > 100m<sup>3</sup> per ha = YC6
  - 20 – 25 year rotation < 12m<sup>3</sup> per ha per year

Most woods are currently underperforming and many are not actively managed.



### Suggested Woodfuel Strategy targets by County

County	Woodland Area (Hectares)	woodland cover (%)	FC holding (Hectares)	Woodland cover (%)	Non FC holding (hectares)	Woodfuel Strategy target by % non FC woodland area (m <sup>3</sup> /yr)	Woodfuel Strategy Suggested County Target (m <sup>3</sup> /yr)
Berkshire	18,308	14.5	444	2.4	17,864	38,103	35,000
Buckinghamshire	17,573	9.4	1,753	10.0	15,820	33,743	33,000
Oxfordshire	18,235	7	629	3.4	17,606	37,553	35,000
Surrey	37,564	22.4	1,588	4.2	35,976	76,735	70,000
Hampshire	66,939	17.7	20,136	30.1	46,803	99,828	105,000
Isle of Wight	4,549	12	1,146	25.2	3,403	7,258	7,000
West Sussex	37,507	18.9	3,789	10.1	33,718	71,919	70,000
East Sussex	29,924	16.7	2,643	8.8	27,281	58,189	55,000
Kent	39,487	10.6	3,540	9.0	35,947	76,673	90,000
	270,086	14.4	35,668		234,418	500,000	500,000

## **SOUTH EAST ENGLAND WOODFUEL MARKETS**

The woodfuel market is developing at three complementary levels:

### **1. Firewood:**

The growing market for conventional logs is resulting in good prices for good quality broadleaves (particularly straight stemmed species which can be converted easily using a firewood processor), around £20m<sup>3</sup> standing and £35+ at rideside – mainly going to local firewood producers. Some firewood producers are finding it difficult to locate suitable wood to meet demand and this is stimulating interest in restoring management to smaller woods which owners haven't been able to actively manage for many years. This market will continue to grow and there is potential to improve the overall understanding of woodfuel quality in both suppliers and customers (through adoption of the new CEN Standards) to allow the price to better reflect the energy value of the wood. The warm winter has affected some producers but overall the market is very positive.

### **2. Large Scale Markets:**

Key developments:

- **Slough Heat and Power:** have been using up to 350,000m<sup>3</sup> of wood per year from a multitude of sources including woodchips from sawmill slabwood, arboriculture, heathland re-creation, and some from existing woods but prices delivered have been in the low £20's per tonne. We understand that prices have increased slightly as they appreciate the benefits of higher quality fuel. UPM Tilhill have a major woodchip depot at South Warnborough which provides 'buffer' fuel storage for the plant.
- **Giddings sawmill:** take around 80,000m<sup>3</sup> of softwood from across southern England. Up to 50% of the volume (slabwood sand sawdust) is converted into woodchips and is currently being sold to Verdo Renewables woodpellet plant at Andover – see below.
- **Verdo Renewables:** last year commissioned a woodpellet production plant at Andover. They will produce 55,000 tonnes of top quality pellets and 15,000 tonnes of wood briquettes per year. This provides a reliable supply of high quality pellets providing security for those considering wood pellet heating systems. Their raw material is sourced about 50/50 from chipped sawmill slabwood and virgin conifer small roundwood (>1,000 tonnes per week).
- **Bedmax Ltd:** have three plants: one in Northumberland, one in Newark and the most recent near Andover in Hampshire built in 2008. The company has developed the market for wood shavings as high quality horse bedding and supplies bales of the shavings all over the country - and beyond. Each plant needs about 40,000m<sup>3</sup> of raw softwood per year predominantly Scots pine. Plant also uses the dust which is removed from the shavings to produce wood briquettes which they market as HOTMAX - [www.hotmax.co.uk](http://www.hotmax.co.uk)
- **British Airports Authority (Heathrow):** Will shortly commission their woodfuelled CHP (Combined Heat and Power) organic rankine cycle system for the refurbished Terminal 2. LC Energy (who have been supplying the woodfuelled system at Stansted Airport for several years) have won the 15 year contract to supply > 25,000m<sup>3</sup> of wood per year and more recently a smaller contract for woodpellets for a further woodfuelled heating system at Heathrow.



**LC Energy's Bedfont  
Timber Hub one  
mile SE of  
Heathrow**

- **Estover Energy:** Are looking for suitable site in Kent to site a medium scale (5MWe & 10MWth) CHP (Combined Heat and Power) conventional steam turbine plant requiring about 60,000m<sup>3</sup> of wood per year). They are seeking a site where they can utilise the heat

effectively, thereby providing a more robust financial investment and making optimal use of the woodfuel resource. They have also been building their fuel supply chain by approaching wooded estates across the south east and negotiating long term supply contracts. They recently announced that their first site will be on Speyside in Scotland supplying heat to the Macallan Distillery and we anticipate them announcing the location of their Kent plant shortly.

- **BSkyB:** are rumoured to be looking for around 16,000m<sup>3</sup> per year for their new HQ near Heathrow.
- **Waitrose:** have installed a CCHP (Combined Cooling, Heat & Power) plant at their new store at East Cowes on the Isle of Wight and are installing a similar system in Bracknell. The system is based on Stirling DK engines, will require about 2,600m<sup>3</sup> of wood per year and will deliver 140kWe and 560kWth and will provide all the heat, cooling and power requirements of each store.



Energy Centre serving Waitrose superstore at East Cowes, Isle of Wight (Output 140kW electrical and 560kW thermal)



Fuel reception by 3 'hook lift' bins (2,600 tonnes per year of unseasoned woodchips sourced from woods managed on the Isle of Wight)



Woodchips are fed to updraft gasifiers, gas is burnt and heat is used in 4 Stirling engines to create electricity



Heat is also used through an 'adsorption' chiller to deliver the cooling needs of the store in the summer but can be sold to neighbours in the winter.

We anticipate that these could be just the first of several similar installations. Each installation would be well suited to supply from local woods (each installation requiring the sustainable yield from about 500 hectares of local woodland).

- **Heckfield Place near Reading:** Has recently tendered for the supply of around 10,000m<sup>3</sup> per year.
- **Centre Parks at Woburn near Milton Keynes:** Has also recently tendered for a supplier of woodchips.

### 3. Local Woodheat Markets:

There are a growing number of estates (e.g. West Dean, Stansted Park, Torry Hill), schools (e.g. Beacon Community College – Crowborough, Bognor Regis Community College, Valley Park – Maidstone, Bexhill Community College), hospitals (Pembury), farms (e.g. Brockwood Park, Hillfields Farm, Manor Farm) and other establishments (e.g. Birtley House – retirement home, Surrey University Sports Centre – Guildford and Maidstone District Council offices) which are now heated with woodchips supplied from local woods. The current price for delivered quality woodchips is approximately £80 per tonne (equivalent to about 2.6 pence per kWhr). FC is currently tendering to install a woodpellet fuelled heating system for the SEE Area Office at Bucks Horn Oak, near Farnham.

The greatest opportunity for woodland owners and managers lies with local supply of quality woodfuel or woodheat (where as demonstrated in the Woodheat Solutions study tours to Austria and Finland individuals or groups of owners/managers install the woodfuelled boiler and infrastructure to sell heat – what is called an ESCo - Energy Services Company approach). While direct woodheat supply is not for everyone it can be particularly attractive in supplying a woodland owners own heat requirements. In several cases entrepreneurs have installed systems to supply their own heat needs, learnt the ropes and are now exploring opportunities to supply heat to nearby 'blue chip' customers such as schools.

While the full ESCo approach may only be attractive to the more entrepreneurial owners/managers local woodchip supply is less complex and offers the benefits of using farm machinery to deliver (rather than costly lorries). This approach may be v attractive to buyers like local authorities etc where security of supply is crucial.

## **FORESTRY COMMISSION SUPPORT FOR WOODFUEL DEVELOPMENT IN SOUTHEAST ENGLAND:**

### **1. General support:**

- a. Providing advice on potential woodfuel resources;
- b. Linking potential buyers to suppliers;
- c. Promoting good practice – for instance Stansted Park as an exemplar installation;
- d. Supporting and/or working in partnership with local initiatives including:
  - i. **Surrey Hills Woodfuel Group** – Surrey CC have adopted a policy under which all boiler replacements on Council properties will be woodfuelled (unless there is a good reason why not). They are currently seeking more detailed information about the available resource both from the total woodland resource and the Council's own estate. Sean Harrison ([sean.harrison@surreycc.gov.uk](mailto:sean.harrison@surreycc.gov.uk)) recently joined the AONB team and is helping promote woodfuel opportunities and supporting the County Council in implementing their policy.
  - ii. **West Sussex CC** – Andrew Tolfts ([Andrew.Tolfts@westsussex.gov.uk](mailto:Andrew.Tolfts@westsussex.gov.uk)) - Woodfuel Development Officer is available to help anyone considering woodfuel supply or use – this post is jointly funded by WSCC and FC;
  - iii. **Bordon/Whitehill ecotown** – FC is currently assessing the potential to harvest biomass from heathland sites within 10 miles of the eco-town. Technical development have identified a Biomass Baler <http://www.grpanderson.com/en/biomass/biobaler-wb55> which has the ability to harvest and bale a range of woody biomass up to 15cm diameter and hence can utilise, heather, gorse, rhododendron, scrub, SRC, orchard prunings, hedgerow cuttings etc ;
  - iv. **TIMBER Project** – helped develop the woodfuel industry in the Chilterns;
  - v. **Enterprise M3 Local Enterprise Partnership** – have just agreed a jointly funded project to (a) refine the stats on the amount of woodfuel available in Hampshire and Surrey, (b) provide 10-12 costed case studies of installations (if you know of anyone who would be prepared to advise on at least the indicative costs of their installation please could you let me know. FC's experience of installing the woodpellet heating at the Bucks Horn Oak office will be included), and (c) providing networking events to help identify the barriers to uptake of woodheat;
  - vi. **TOE2** (Tomorrows Oxfordshire Environment) – working with this Big Society group to promote uptake of woodfuel in Oxfordshire, in particular encouraging community woodfuel initiatives and restoring management to ancient woodland.
  - vii. **South Downs National Park Authority**: Working closely with the NPA to develop market led mechanisms to maintaining the woodlands of the South Downs.
  - viii. **Hedgerow Woodfuel** – a presentation from Jon Stokes of the Tree Council highlighted the opportunity to manage some hedgerows on a 15 year coppice cycle (as opposed to the 'traditional' hedgeclipping). This is already done in some parts of France where the woodfuel is used to heat whole village communities. Exploring whether this could be part of a MultiFor '2' Intereg project transferring experience from France to England.

### **2. Leading the Woodheat Solutions (WhS) Project:**



WhS was sponsored by Intelligent Energy Europe and involved working with Thames Valley Energy and a range of EU partners to transfer experience from Finland and Austria where woodfuel is well established as an industry to 'developing' Regions: South East England, Slovenia and Croatia.

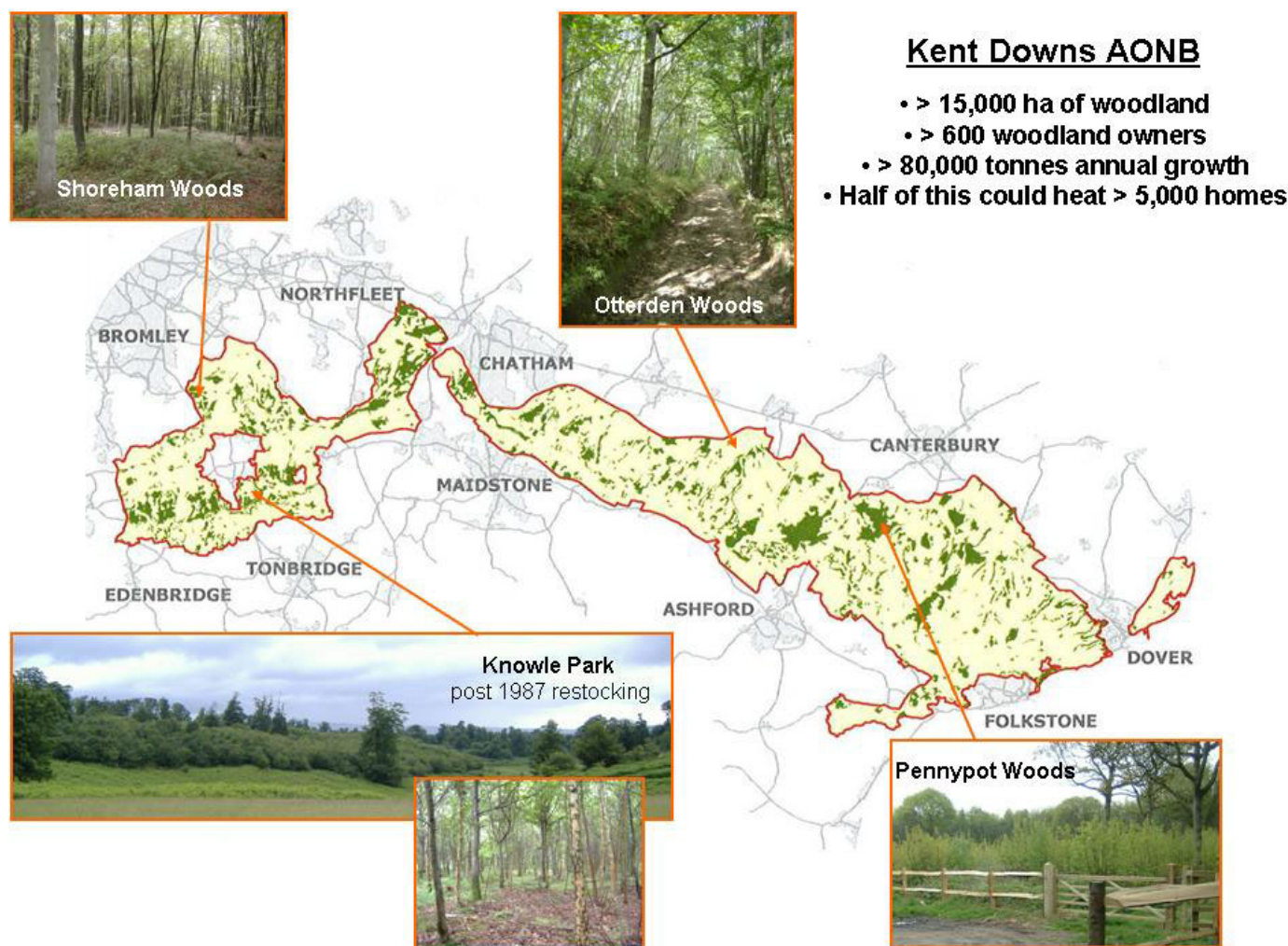
The project included study tours to Finland (30 English delegates) and Austria (40 English delegates), technical advice to sites in SEE from Austrian and Finnish specialists and a series of technical training seminars highlighting the lessons learnt. Full details including a full report of the project and lessons learnt PowerPoint are available on: <http://www.woodheatsolutions.eu/> The project has now closed BUT the material, which was developed, continues to be incredibly useful and the majority of those who attended the study tours are now taking woodheat forward.

### **3. Kent Downs Woodfuel Pathfinder:**

As part of the Forestry Commission's Woodland Carbon Task Force this national pathfinder is focusing significant FC and partner resources (including Intereg MultiFor <http://www.multifor.eu/en/>) to work with a range of stakeholders to identify and test a range of temporary support measures to establish the woodfuel industry in the Kent Downs AONB. Key



contact is the co-ordinator Matthew Morris ([Matthew.Morris@kentdowns.org.uk](mailto:Matthew.Morris@kentdowns.org.uk)) based with the AONB team.



Our objective is to establish:

- A robust woodland industry supported by local markets for woodland products
- Sensitive woodland management of our cherished biodiversity and landscapes
- Secure local jobs (including opportunities for farm diversification)
- An 'environment' requiring minimal state regulation and support

To help achieve this we have brought together a team with a diverse range of experience to help woodland owners and heat users consider and grasp the opportunities. The pathfinder builds on the experience gained through the Woodheat Solutions project and helps woodland owners take advantage of:

- The Renewable Heat Incentive DECC's (Department of Energy and Climate Change) Renewable Heat Incentive opened to businesses on 28<sup>th</sup> November 2011,
- the English Woodland Grant Scheme's Woodfuel WIG (Woodland Improvement Grant);
- the wider grants available for rural business development under the Rural Development Plan England including the Farming and Forestry Improvement Scheme launched on 16<sup>th</sup> November (Further details from Defra's local RDPE delivery teams and local LEADER groups – see <http://www.defra.gov.uk/rural/rdpe/> ;
- Additional FC support for apprenticeship woodland contractors, in association with SWA and Plumpton College.

The focus has recently shifted from building market pull to developing the supply chain, and contractor capacity to manage woods.

Matthew Woodcock  
26 April 2012  
[matthew.woodcock@forestr.gsi.gov.uk](mailto:matthew.woodcock@forestr.gsi.gov.uk)

## USEFUL FACTS AND FIGURES:

1m<sup>3</sup> of wood (standing or recently felled) *comprises about 50% water (by total weight)*  
 = approximately 1 tonne of unseasoned/fresh/wet wood  
 = approx. 0.72 tonnes of seasoned wood *comprising about 30% water (by total weight)*  
 = about 3m<sup>3</sup> of loose woodchips (by volume)  
 = about 2,500kWhrs of usable heat energy for broadleaf wood  
 or about 1,800kWhrs of usable heat energy for conifer wood  
 = about 1.4m<sup>3</sup> of stacked firewood logs or 2.5m<sup>3</sup> of loose logs (In reverse 1m<sup>3</sup> of stacked logs = about 0.7m<sup>3</sup> of solid wood and 1m<sup>3</sup> of loose logs = about 0.4m<sup>3</sup> of solid wood).

### Indicative costs of woodchip production:

1. Payment to woodland owner - £10+ per wet tonne/m<sup>3</sup>
2. Cost of felling and extraction - £20 per wet tonne/m<sup>3</sup>
3. Cost of drying - £5 per wet tonne/m<sup>3</sup>
4. Conversion from wet tonnes to dry (30% moisture) tonnes  
 - Divide by 0.7 (or multiply by 1.43) - £15 per seasoned tonne
5. Cost of chipping - £10 per seasoned tonne
6. Cost of delivery - £15 per seasoned tonne = about 3 m<sup>3</sup> of 'loose' woodchips
7. Overheads 25% - £19 per seasoned tonne

**TOTAL = £94 per seasoned tonne** (equivalent to 3 pence per kW hr)

Note: Every woodland is different and so costs of production will vary considerably. For those considering self supply (from their own woods) the net costs can be considerably lower.

### Net carbon costs of woodfuel:

All traditional fuel (i.e. excluding nuclear) releases carbon dioxide (CO<sub>2</sub>) when it is burnt. However, the net CO<sub>2</sub> released by burning sustainably produced wood is considerably less than the CO<sub>2</sub> released when fossil fuels are burnt:

<u>Net CO<sub>2</sub> emissions by fuel type</u>	
<b>Fuel type:</b>	<b>Life cycle CO<sub>2</sub> emission:</b>
Wood	7 kg/MWh
Natural Gas	270 kg/MWh
Oil	350 kg/MWh
Coal	480 kg/MWh
Electricity	530 kg/MWh

In essence you don't save any CO<sub>2</sub> by burning woodfuel - only be displacing fossil fuel, and the savings will depend on what fuel you are displacing.

<u>CO<sub>2</sub> savings when wood is substituted for fossil fuels</u>			
		Net CO <sub>2</sub> released	CO <sub>2</sub> Saved by substituting 1m <sup>3</sup> of wood for fossil fuel
1 m <sup>3</sup> of wood provides 2,500kWhrs of energy (when seasoned)		17.5kg	
Fossil fuels delivering the same amount of energy	Natural Gas	675kg	657kg
	Oil	875kg	857kg
	Coal	1,200kg	1,182kg
	Electric	1,325kg	1,307kg

To convert from CO<sub>2</sub> saved to carbon you divide by 44 (the molecular weight of CO<sub>2</sub>) then multiply by 12 (the atomic weight of carbon). So 1kg of CO<sub>2</sub> would equate to 0.27 kg of carbon.

All wood has about the same calorific value by weight (for the same moisture content)  
 BUT different species have different densities and growth rates in volume terms

### Comparison with fuel prices:

Using a domestic home requiring about 15,000kWhrs of heat per year.

Current energy prices for usable heat.

- Electricity = 12.7 p/kWh = £1,900/yr
- Oil = 5.9 p/kWh = £885/yr (based on 59pence per litre and 10kWhrs per litre)
- Coal = 6.0 p/kWh = £900/yr
- Mains gas = 4.0 p/kWh = £600/yr
- Woodpellets = 5.8 p/kWh = £870/yr (based on £281 per tonne (bagged) delivering 4,800 kWhs)
- Woodchips = 3.0 p/kWh = £450/yr (based on £100 per tonne delivering 3,500 kWhs)

### Energy value of seasoned wood by species

Species	Volume per tonne, green	Green density	Basic (oven dry) density	Moisture content (green, wet basis)	Weight at 30% moisture content	Energy value at 30% moisture content	ROUNDED Energy value	Estimated Yield based on maximum MAI (Mean Annual Increment)	Estimated Energy yield per ha per year
	m <sup>3</sup> /tonne	kg/m <sup>3</sup>	kg/m <sup>3</sup>	%	kg per m <sup>3</sup>	kWhs per m <sup>3</sup>	kWhs per m <sup>3</sup> at 30% mc	m <sup>3</sup> per ha per year	kWh per ha per year
Scots pine	0.980	1020	410	60%	586	2,050	2,000	8	16,400
Corsican pine	1.000	1000	400	60%	571	2,000	2,000	8	16,000
Lodgepole pine	1.050	950	390	60%	557	1,950	1,900	8	15,600
Sitka Spruce	1.080	920	350	62%	500	1,750	1,700	14	24,500
Norway Spruce	1.040	960	340	65%	486	1,700	1,700	10	17,000
European Larch	1.110	900	450	50%	643	2,250	2,200	8	18,000
Japanese or hybrid Larch	1.200	830	410	51%	586	2,050	2,000	8	16,400
Douglas Fir	1.150	870	430	51%	614	2,150	2,100	12	25,800
Western Hemlock	1.070	930	360	62%	514	1,800	1,800	10	18,000
W Red Cedar & Lawson Cyprus	1.120	890	320	65%	457	1,600	1,600	8	12,800
Grand Fir	1.170	850	300	65%	429	1,500	1,500	8	12,000
Noble Fir	1.070	930	310	67%	443	1,550	1,500	8	12,400
<b>Baseline for Softwood (excluding Grand Fir, Noble Fir)</b>	<b>1.080</b>	<b>927</b>	<b>386</b>	<b>59%</b>	<b>551</b>	<b>1,930</b>	<b>1,900</b>	<b>8</b>	<b>15,440</b>
Oak	0.940	1060	560	47%	800	2,800	2,800	4	11,200
Beech	0.970	1030	550	47%	786	2,750	2,700	4	11,000
Sycamore	1.200	830	490	41%	700	2,450	2,400	4	9,800
Birch	1.070	930	530	43%	757	2,650	2,600	4	10,600
Elm	0.970	1030	430	58%	614	2,150	2,100	4	8,600
Ash	1.280	780	530	33%	757	2,650	2,600	6	15,900
Hornbeam			570	42%	814	2,850	2,800	4	11,400
Sweet Chestnut			440	55%	629	2,200	2,200	12	26,400
Cherry (European)			500	44%	714	2,500	2,500	6	15,000
Lime (European)			440	34%	629	2,200	2,200	6	13,200
Alder (Common)			420	48%	600	2,100	2,100	6	12,600
Poplar	1.11	900	360	60%	514	1,800	1,800	18	32,400
Poplar (Black)			350	60%	500	1,750	1,700	12	21,000
Poplar (Grey)			390	50%	557	1,950	1,900	12	23,400
Willow (Crack)			350	50%	500	1,750	1,700	12	21,000
Willow (White)			360	53%	514	1,800	1,800	12	21,600
Willow (SRC)				est 60%		1,800	1,800	18	32,400
Eucalypts									
<b>Baseline for Hardwood (excluding Poplar and SRC Willow)</b>	<b>1.072</b>	<b>943</b>	<b>515</b>	<b>45%</b>	<b>736</b>	<b>2,575</b>	<b>2,500</b>	<b>4</b>	<b>10,300</b>
	From the <b>new</b> FC Forest Mensurati on Handbook	From the <b>old</b> FC Forest Mensuration Handbook	From BRE's 'The strength properties of timber' by Gwendoline M Lavers 1983					Yield Class is estimated and will vary from site to site	

## **APPENDIX F.**

### **AN EXTRACT FROM: SOUTH EAST ENGLAND WOODLAND INCREMENT ESTIMATES MAY 2012, FORESTRY COMMISSION**

The full spreadsheet includes figures for the North Wessex Downs AONB and all the other counties, AONBs and National Parks in the South East, and explains the assumptions made in producing these estimates. It can be obtained by contacting Matthew Woodcock, FC at [matthew.woodcock@forestry.gsi.gov.uk](mailto:matthew.woodcock@forestry.gsi.gov.uk)



## APPENDIX F. EXTRACT FROM: SOUTH EAST ENGLAND WOODLAND INCREMENT ESTIMATES, FC

### Potential wood increment per year - Berkshire

Estimate prepared by Matthew Woodcock 12 May 2012

Forest type	Woodland ownership (ha)	Est. potential average annual increment	Total est. annual increment by forest type	Potential harvest (if 75% non-FC woodland & 100% FC woods were managed)	Potential proportion of sawlogs	Potential proportion of woodfuel	Proportion of sawlogs which could be used as woodfuel	Energy value of woodfuel (Exc. sawmill 'coproduct')
(Area derived from NIWT 1995 survey data)		(m <sup>3</sup> per ha per year)	(m <sup>3</sup> per year)	(m <sup>3</sup> per year)	(m <sup>3</sup> per year)	(m <sup>3</sup> per year)	(m <sup>3</sup> per year)	000's kWh (i.e. MWh)
	<b>Non FC Woods</b> (*1)							
Conifer	2,912	8	23,296	17,472	10,483	6,989	5,242	12,580
Broadleaved	8,457	4	33,828	25,371	2,537	22,834	1,269	57,085
Mixed	3,213	6	19,278	14,459	8,675	5,783	4,338	12,723
Coppice	157	6	942	707	71	636	35	1,145
Coppice with standards	113	6	678	509	51	458	25	824
Windblow	0	4	0	0	0	0	0	0
Felled	106	4	424	318	32	286	16	515
Open space	2,905		0	0	0	0	0	0
<b>TOTAL</b>	<b>17,863</b>		<b>78,446</b>	<b>58,835</b>	<b>21,849</b>	<b>36,986</b>	<b>10,924</b>	<b>84,872</b>
	<b>FC Woods</b>							
Conifer	185	10	1,850	1,850	1,110	740	555	1,332
Broadleaved	139	4	556	556	56	500	28	1,251
Mixed	118	6	708	708	425	283	212	623
Coppice	0	6	0	0	0	0	0	0
Coppice with standards	0	6	0	0	0	0	0	0
Windblow	0	4	0	0	0	0	0	0
Felled	0	4	0	0	0	0	0	0
Open space	2		0	0	0	0	0	0
<b>TOTAL</b>	<b>444</b>		<b>3,114</b>	<b>3,114</b>	<b>1,590</b>	<b>1,524</b>	<b>795</b>	<b>3,206</b>

\*<sup>1</sup> includes all woods of < 2 ha

## **APPENDIX G.**

**ARE YOU CONSIDERING SUPPLYING WOODHEAT?  
WOODHEAT SOLUTIONS PROJECT, FORESTRY COMMISSION**

# Are you considering becoming a supplier of Woodheat?

With increased Government support, now is an excellent time to become involved in the woodfuel supply chain and promote wood as a low carbon source of fuel.

The supply chain for woodfuel covers every stage from harvesting the trees to heating a building. It includes drying, processing, storing, transporting and converting the wood into energy in a boiler or stove.





## Where are the markets?

Schools, colleges, care homes, prisons and business parks are switching to wood fuelled heating. The South East has recently invested in some 70 industrial or commercial boilers (chip or pellet) and thousands of domestic log-fired stoves.

## What returns can I expect?

- Local woodlands provide low value fuel for heating. Many South East country estates have installed large-scale systems to save costs by generating heat from their own woods.
- Clean wood by-products (e.g. from tree surgery or saw milling) can be readily sold into the woodfuel supply chain.
- Woodfuel systems have lower lifetime (typically 20 years) costs than fossil fuel plants. They are generally cheaper than heating oil, LPG and electricity and produce lower carbon emissions.

## How can woodfuel benefit wildlife and landscape conservation?

- Cutting wood opens up woodlands for flowers, insects, birds and small mammals, including rare butterflies and threatened species such as dormice and nightingales.
- Cherished woodlands are seldom 'natural' but have developed thanks to a long history of management. New woodfuel markets will secure the future of historic wooded landscapes such as the Weald and the Chilterns.

## Quality – what do you mean?

- Quality is critical. Clean wood with a low moisture content and consistent size is essential.
- Woodfuel is generally graded and boilers are rated to accept a particular standard of fuel. Sub standard chips or pellets will block the boiler feed and its operation.
- Suppliers must comply with boiler requirements and their specified production procedures.

## Contract options?

- Selling by the load/per m3, delivered to the end user.
- Selling standing in the wood or cut at roadside to an intermediary.
- Selling heat, an energy services contract (ESCo) where the supplier owns the boiler and the user only pays for the metered heat used.

## Equipment needs?

Logs	
Required	Advisable in certain circumstances
Firewood processor	Splitter Loader

Chip	
Required	Advisable in certain circumstances
Biomass chipper	Screen Splitter Chip blower Loaders Crane

Pellets	
Required	Advisable in certain circumstances
Pellet mill	Dryer Chipper Hammer mill Bagging system

## What grants are there?

Please refer: [www.biomassenergycentre.org.uk](http://www.biomassenergycentre.org.uk).

## Who do I go to next?

For an up to date list of contacts in your county please speak to:

Forestry Commission  
SE England Office  
Alice Holt  
Wrecclesham  
Farnham, Surrey GU10 4LF  
Telephone: 01420 23337  
email: [southeast.fce@forestry.gsi.gov.uk](mailto:southeast.fce@forestry.gsi.gov.uk)

[www.woodheatsolutions.eu](http://www.woodheatsolutions.eu)

## A Few Do's and Don'ts

### Do's

- Understand quality standards, grading, size and moisture content before you start to produce fuel
- Visit an existing installation
- Explore all sources of grant

### Don'ts

- Be put off by other's mistakes (learn by them)
- Use contaminated, dirty or wet woodfuel
- Sell or buy wood fuel without a clear agreement
- Take on a contract to supply unless you have emergency back up

## **APPENDIX H.**

### **DESIGNING A WOODHEAT SYSTEM**

### **WOODHEAT SOLUTIONS PROJECT, FORESTRY COMMISSION**

## Designing a woodheat system:

This short paper (an extract from the WhS final report) brings together all the lessons we have learnt from the project and is designed to guide those considering Woodheat and help them implement a quality 'wood to warmth' system.

Lots more information and examples on [www.woodheatsolutions.eu](http://www.woodheatsolutions.eu)

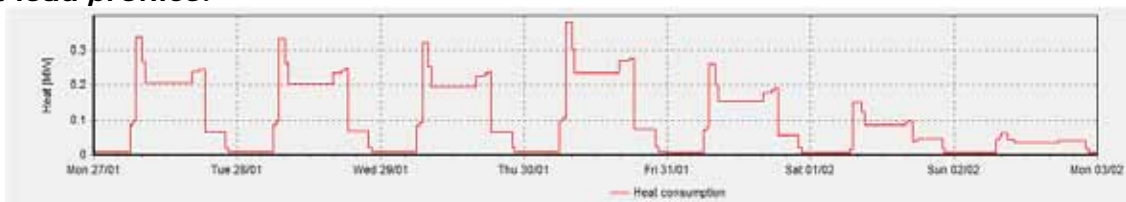
### Common problems of woodheat installations:

- **Oversized boiler:** runs inefficiently, often leads to condensation when boiler is not running which damages the internal components = higher cost of maintenance and fuel and higher emissions;
- **Poorly sized, located or designed woodchip bunkering:** increased costs of fuel delivery and inconvenience;
- **Jamming woodchip feed systems:** augers can be jammed by poor quality woodchips (containing 'slivers') = increased maintenance costs and inconvenience.

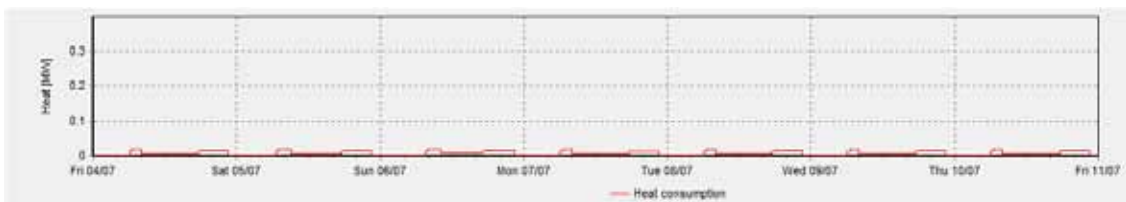
### 1. Identify the heat load and profile:

- Review opportunities to save energy by better insulation etc;
- Have a formal heat load assessment undertaken by a qualified assessor (s/he will be able to assess the actual heat losses from particular building types and sizes);
- As a starter look at what energy you're currently using (most utility bills will provide an indication of how many kWh's of energy [as gas, oil or electricity] you have used);
- Consider when you use heat most and least to determine a profile of usage

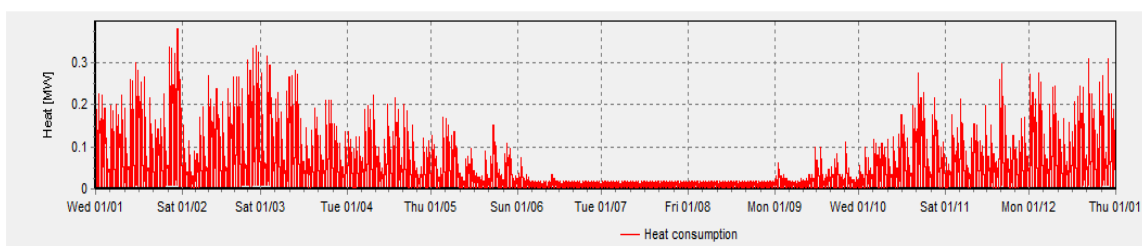
### Heat load profiles:



Typical winter heat profile



Typical summer heat profile

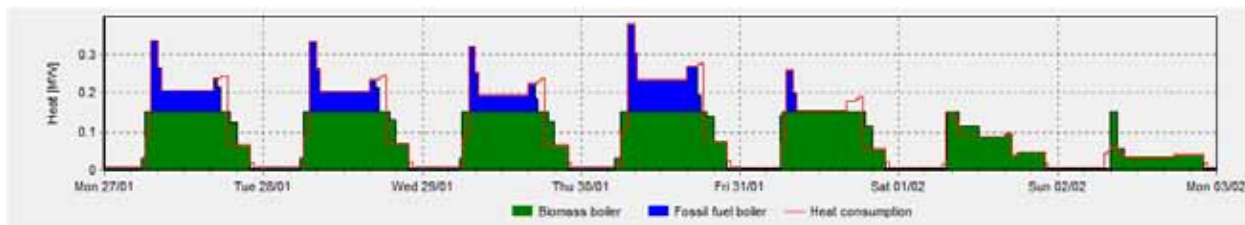


## 2. Consider how the daily heat demand can be 'smoothed out' using an accumulator, or 'buffer', tank

### Note:

- Woodfuelled boilers tend to work most efficiently when they are working at a high proportion of their maximum capacity; and
- An accumulator tank is purely a large, highly insulated, hot water tank which stores heat when you don't need it – very like a rechargeable battery.

**Figure 84: Biomass and conventional boilers – office/business use in winter**



Heat outputs. 150kW biomass boiler, 350kW oil boiler



Buffer tank activity. 5000litre, 20deg.C deltaT

- The accumulator can be used in two slightly different ways:
  - **To maintain a constant load on the boiler:** in this approach the boiler runs at a constant load supplying heat directly to the user and when this is not needed direct to the accumulator. Maximum required load is supplied by the boiler and accumulator in tandem.
  - **To 'buffer' the heat demand:** in this approach all heat demand from the user is supplied from the accumulator. The woodfuelled boiler runs intermittently to maintain heat stored in the accumulator. This approach works very well with log burning batch boilers where the system relies on only running the boiler for part of the day (i.e. on one 'batch' of logs). When used with pellet or woodchip boilers it is important to ensure that the boiler is not switching on and off regularly (one or two 'burns' per day is reasonable) otherwise energy will be wasted heating up the infrastructure of the boiler itself. In addition the boiler should be running for as long as possible so that it is running at maximum efficiency for the highest proportion of its 'burn'.





*Domestic accumulator drawing heat from a wood burning stove and solar thermal array, with electric emersion coils for frost protection when owner is away in winter*



*Accumulator (left rear) linked to a 100kW boiler (right centre) to provide heat for a community building*



*'Large' accumulator working with a 250kW boiler to heat a former stately home (or 'schloss')*

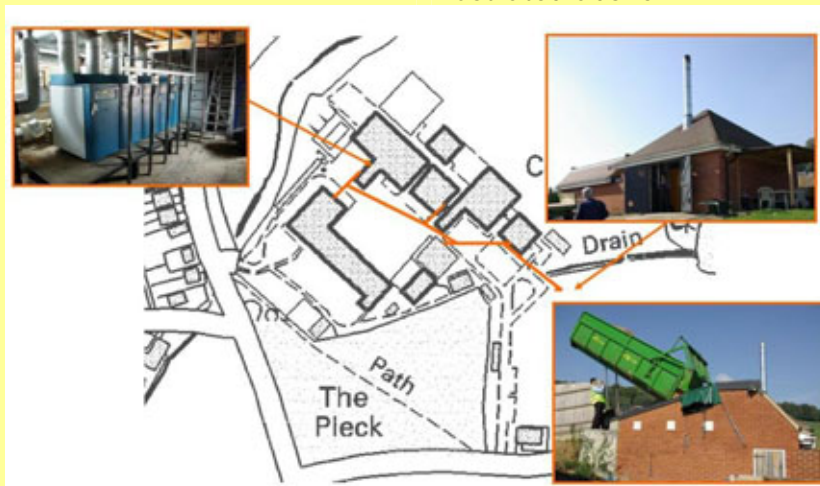
**3. Consider whether other heat sources can be included in the overall system to optimize efficiency of Woodheat:**

There may be existing fossil fuelled boilers on the site which could be used to provide heat during periods of low or high load, thus allowing your woodfuel boiler to be utilised at optimal efficiency. Hence determine whether:

- (a) There is a 'base load' of demand which is constant throughout the year which could be supplied by the woodfuel boiler?
- (b) There an constant load that could be supplied by the woodfuelled boiler through autumn, winter and spring? Peak load in winter and low summer load could be supplied by an existing oil or gas boiler running in parallel to the woodfuel boiler.



In this case a school sought advice from the project about replacement of two oil fired boilers with woodchip system. Site inspection revealed > 10 discrete gas and oil boilers heating different parts of the site, including the 5 gas boilers illustrated above.



The optimal way to use woodfuel on this site would be to:

- i. install a 'heat main' to link the heating of all the buildings on site into one network;
- ii. build a bespoke Woodheat boiler house and chip store in a location which is easy to access for delivery vehicles and which doesn't disturb the pupils during chip delivery; and
- iii. size the woodchip boiler to run at maximum load and maximum efficiency, by running alongside a suitably sized accumulator tank, and **use the existing gas boilers to provide 'top off' to address the peak winter load and low summer load.** (An alternative would be to use two differently sized woodchip boilers to accommodate the varied load in mid winter and summer).

**Note:** although this would involve significant capital outlay, this needs to be costed against the life time costs of the whole system. In particular servicing and replacement of the multiple fossil fuelled boilers on the site and 'life expectancy' of the heat main and new boiler room infrastructure.

#### **4. Consider the capacity of the woodfuelled boiler needed:**

- Depends on 1, 2 and 3 above but as a general 'rule of thumb' the capacity of the woodfuel boiler will be about 70% of the equivalent oil or gas system (oil and gas systems respond much better to lower loads than woodfuelled boilers)
- Some modern woodfuelled boilers can cope better with a varied load but generally operate more efficiently when running at high load.

#### **5. Consider which woodfuel type is best suited to your site and requirements:**

- Conventional logs work well in batch boilers but usually require manual loading;
- Woodchip systems are more suited to large heat requirements but require space and a well thought out supply chain; and
- Wood pellet systems require less space, offer great convenience but are difficult to fuel from your own woods.

## 6. Consider the size of the fuel 'bunker'

– especially when considering woodchips:

- (a) **Heat load:** Woodchips need lots of space as loose woodchips may contain as little as 500kWh's per loose cubic metre.
- (b) **Buffer required between deliveries:** for instance in winter how long do you need to 'run' between fuel deliveries.
- (c) **Method of delivery:** Delivery of a full load of woodchips will be cheaper than part loads and tipper lorry/trailers are cheaper than blower systems.
- (d) **Avoid 'just in time' constraints:** The bunker should be large enough to hold at least 1.5 times as much volume as the largest delivery vehicle.
- (e) **Usable capacity of a woodchip bunker:** Woodchips don't flow (like sand or wood pellets) so it's very difficult to fill the whole volume capacity of the chip bunker. For bunkers where the woodchips will be 'tipped' from a lorry, farm trailer or telehandler tipping into the centre of the pit will ensure much more of the overall volume of the pit is usable than tipping at one side.



*Access doors for 'tipping' woodchips into bunker are sited in the centre of the bunker.*



*Allows the delivery to drop into the centre of the bunker, keeping the unused space to the minimum*

**Note:** this requires a chip bunker roof which is strong enough to take the weight of the rear axle of the delivery vehicle. Add a 'stop' to be included so the delivery drivers vehicle stops at the right point, but ensure this is located to allow for the tipping of the trailer (you don't want to be sweeping up chips which missed the bunker!)

- (f) **Access to bunker:** Ensure that the delivery vehicles you are likely to use can access the bunker easily.



**Example: Surrey University Sports Centre:** Access is well designed and 'marked' to discourage inadvertent parking, thus allowing easy delivery of woodchips from a local estate using existing farm equipment



## 7. Consider the location of the fuel 'bunker':

This is often a compromise but requires careful assessment of the issues:

- (a) **Boiler location:** the bunker needs to be adjacent to the boiler BUT as it is easier to transport heat through a hot water pipe than woodchips the mode of supply may have a greater influence on the location of the boiler than the property being heated!
- (b) **Landform:** Fully sunken woodchip bunkers offer great flexibility but are expensive to construct and maintain (plus they may be vulnerable to flooding). Semi-sunken systems taking advantage of sloping ground, or even man made landform, can be far more cost effective. Hence if you have landform – use it!
- (c) **Delivery method:** The more flexible the system the greater the choice of woodfuel supplier, hence if a bunker can be accessed easily by a tipping articulated lorry then it can also be accessed by tractor trailer etc. However, the capacity of the store needs to be at least 1.5 times the capacity of the biggest delivery vehicle (as delivering part loads from tipping systems doesn't work well!

## 8. Consider the woodfuel supply chain:

- Woodchip quality depends on the boiler specification or visa versa AGAIN this is an area where a careful compromise needs to be struck between what might be optimal for a boiler and what quality of woodfuel is available:
  - Higher efficiency boilers often need a higher woodfuel specification, be careful that the added efficiency of the boiler is considered in relation to the higher production costs of the fuel. Consider the cost efficiency of the overall system!
  - If you have lots of small trees/stems which would produce woodchips with a high proportion of fines you may decide to use a more robust but less efficient boiler which can cope with this lower quality and lower cost fuel!
- Critical elements are:
  - (a) **Moisture content:**
    - Seasoning of the wood is critical and this depends on location and aspect: an open sunny and windy location without shade and a generally dry summer season is ideal, this should allow moisture to reduce from about 50% to 30%. A lower moisture content will require an extended period or forced drying.
  - (b) **Chip size distribution:**
    - Use a high quality woodchipper designed for producing woodchip fuel; or
    - Use mechanical screens to 'refine' lower quality woodchips – as might be produced from arboricultural operations; and
    - Use a set of calibrated sieves as recommended in the CEN Standards to check that you are producing these to the agreed specification.
- Self supply can allow simple supply chains – see case study of Stansted Park.

## 9. Who will maintain the system:

- Woodchip boilers generally require a small amount of maintenance, removal of dust from sensors and removal of blockages from the feed system. The person who will carry out this work must be identified and 'enthused' about what s/he needs to do.

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## **APPENDIX I.**

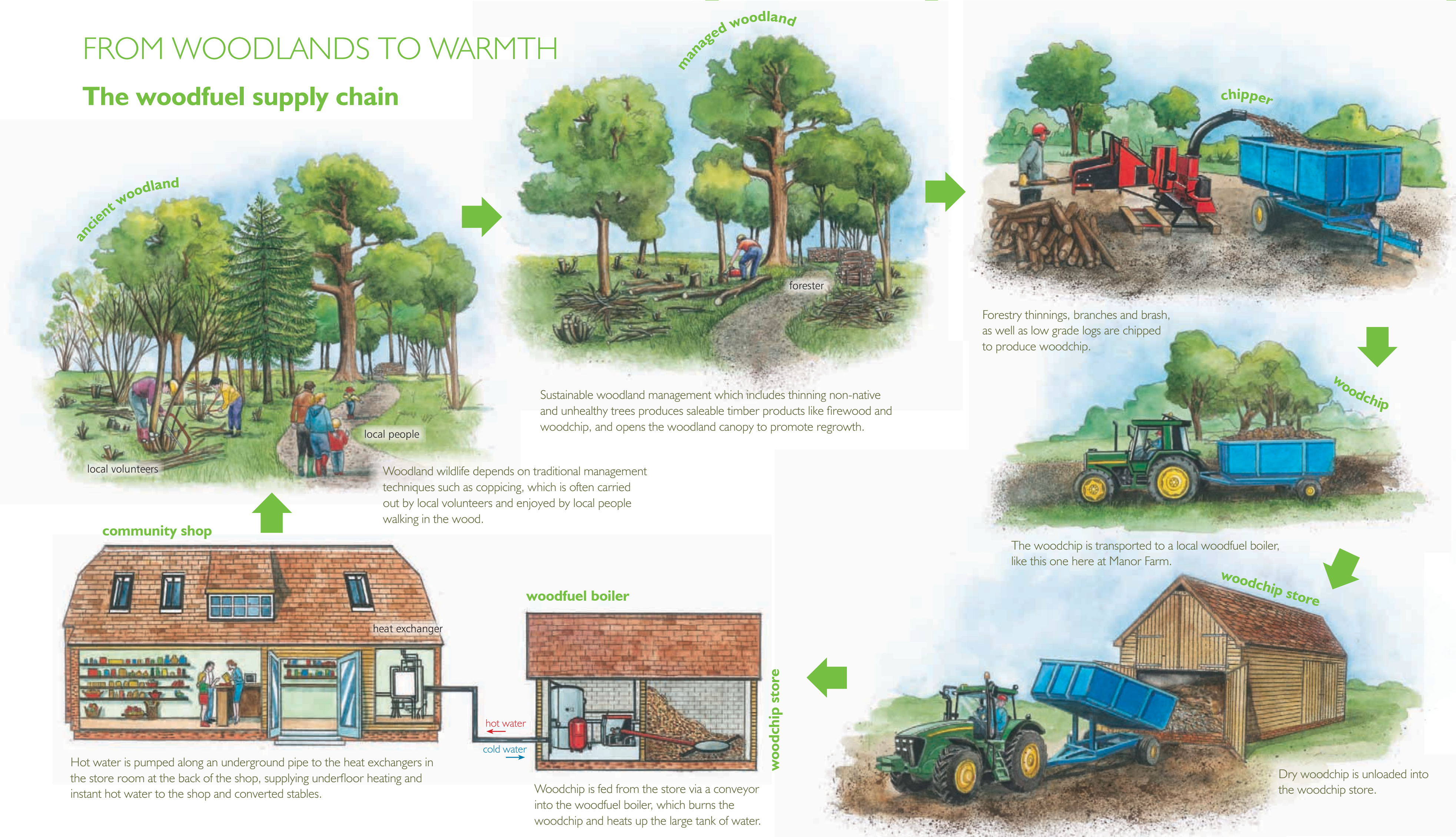
### **WOODFUEL BOILER AND WOODFUEL SUPPLY CHAIN INTERPRETATION PANEL**

**FOR HAMPSTEAD NORREYS COMMUNITY SHOP, BeWILD PROJECT**



# Your Community Shop is Heated by a Woodfuel Boiler

FROM WOODLANDS TO WARMTH  
The woodfuel supply chain



SUSTAINABLE HEAT FOR A SUSTAINABLE COMMUNITY

## Regeneration of old farm yard

As part of the regeneration of this old farm yard, the Betts family have taken the opportunity to heat the buildings sustainably, using locally sourced timber in the form of woodchip. Natural England provided funding towards the cost of a woodfuel boiler through the BeWILD Project.

## Woodfuel boiler

An Austrian 60kW woodfuel boiler called Thermi-nator II was installed by Oxford Renewables to heat and provide hot water for this purpose-built community shop and adjacent converted stables, using approximately 22 tonnes of woodchip each year.

The woodfuel boiler is automatically fed with woodchip from the woodchip store nextdoor. It fires up on demand to heat a 3,000 litre insulated tank of water known as a buffer store, which allows the heating system to meet changing demands for heat. The hot water is pumped from this buffer store to the shop along 100m of heavily insulated underground pipe using a low energy pump.

## Warm community shop

In the store room at the back of the shop are a pair of heat exchangers which transfer the heat from the boiler's water to the heating and hot water circuits. The shop building and stables are therefore supplied with instant hot water and underfloor heating.



**Ancient woodlands** are beautiful and special places for us and our native woodland wildlife, and can produce a whole range of valuable timber products. Woodland wildlife relies on our woodlands being managed in order to thrive.



**Hazel coppice.** Hazel has been managed as a sustainable source of timber for 1,000 years through the process of coppicing or regular cutting, producing hazel rods or stakes that are perfect for traditional crafts such as hedgelaying and hurdle-making. Derelict hazel coppice is a great source of logs for the growing firewood market.



**Woodfuel boiler and buffer store.** The new woodfuel boiler is on the left, and the 3,000 litre buffer store is on the right. The silver box coming through the wall on the left is from the woodchip store and houses the screw conveyor which automatically feeds the boiler with woodchip.

## Thank you to our funders

BeWILD is a Natural England Countdown 2010 Biodiversity Action Fund project. This project is being managed by the Pang, Kennet and Lambourn Valleys Countryside Projects (FWAG), and delivered in partnership with the Thames Valley Environmental Records Centre (TVERC). Match funding has been provided by the Friends of the Pang, Kennet and Lambourn Valleys and the HDH Wills 1965 Charitable Trust. The North Wessex Downs LEADER Fund and SEEDA also provided funding towards the community shop and woodfuel heating system.

## For more information

Contact the Pang, Kennet and Lambourn Valleys Countryside Projects (FWAG) office in Theale on 0118 930 5336, or check out the websites [www.pangandkennetvalleys.org.uk](http://www.pangandkennetvalleys.org.uk), [www.tverc.org](http://www.tverc.org), [www.forestry.gov.uk](http://www.forestry.gov.uk), [www.woodheatsolutions.eu](http://www.woodheatsolutions.eu)





## **APPENDIX J.**

### **FURTHER WOODLAND LINKS**

## APPENDIX J. FURTHER WOODLAND LINKS

### National woodland organisations

- Forestry Commission [www.forestry.gov.uk](http://www.forestry.gov.uk) Jonathan Rau, Woodland Officer for Berkshire and Hampshire, [jonathan.rau@forestry.gsi.gov.uk](mailto:jonathan.rau@forestry.gsi.gov.uk)
- Royal Forestry Society [www.rfs.org.uk](http://www.rfs.org.uk)
- Woodland Trust [www.woodlandtrust.org.uk](http://www.woodlandtrust.org.uk)
- Small Woods Association <http://smallwoods.org.uk/>
- Ancient Tree Forum <http://frontpage.woodland-trust.org.uk/ancient-tree-forum/>

### Local woodland organisations

- Working to revive Britain's wood culture <http://sylva.org.uk/>
- Oxfordshire Woodland Project service for private woodland owners <http://www.oxfordshire.gov.uk/cms/public-site/woodland-project>
- Chiltern Woodlands Project <http://www.chilternsaonb.org/woodlands-project.html>

### National nature conservation organisations

- Natural England [www.naturalengland.org.uk](http://www.naturalengland.org.uk)
- Biodiversity Action Plans [www.ukbap.org.uk](http://www.ukbap.org.uk)
- Joint Nature Conservation Committee [www.jncc.gov.uk](http://www.jncc.gov.uk) (reports at <http://www.jncc.gov.uk/page-2132> )
- Royal Society for the Protection of Birds (RSPB) <http://www.rspb.org.uk/>
- Butterfly Conservation <http://butterfly-conservation.org/>
- People's Trust for Endangered Species (PTES) <http://www.ptes.org/>
- Bat Conservation Trust <http://www.bats.org.uk/>
- Mammal Society <http://www.mammal.org.uk/>

### Local nature conservation and landscape organisations

- Thames Valley Environmental Records Centre (TVERC) <http://www.tverc.org/>
- Berkshire Nature Conservation Forum and Local Nature Partnership <http://www.berksbap.org/local-nature-partnership-development>
- North Wessex Downs AONB <http://www.northwessexdowns.org.uk/>
- West Berkshire Countryside Society <http://www.westberkscountryside.org.uk/>
- Berkshire Mammal Group <http://www.berksmammals.org.uk/>
- Bucks, Berks and Oxon Wildlife Trust (BBOWT) <http://www.bbowt.org.uk/>
- Oxford Nature Conservation Forum (ONCF) <http://www.oncf.org.uk/>

### Game and deer management organisations

- Game and Wildlife Conservation Trust <http://www.gwct.org.uk/>
- South East Deer Initiative, deer management and impacts [http://www.thedeerinitiative.co.uk/di\\_in\\_england/south\\_east\\_england.php](http://www.thedeerinitiative.co.uk/di_in_england/south_east_england.php)

### Woodland archaeology organisations

- English Heritage <http://www.english-heritage.org.uk/>
- South East Woodland Archaeology Forum <http://www.sewaf.org.uk/about/>

### **On-line market places and woodland planning tools**

- myForest, a free service for woodland owners, forestry businesses and wood users <http://www.sylva.org.uk/myforest/>
- WoodLots Directory <http://www.woodnet.org.uk/woodlots/>

### **Woodland management organisations**

- William Hamer FRICS, Forestry Consultant [william.hamer@btconnect.com](mailto:william.hamer@btconnect.com) 07768 491268
- David Hunt, Wessex Woodland Management Ltd <http://www.wessexwoodland.com/>
- Greg Vickers, Head Forester for Englefield Estate [greg.vickers@englefield.co.uk](mailto:greg.vickers@englefield.co.uk) <http://www.englefieldestate.co.uk/Woodlands.html> 07774 164205
- Clive Leeke, Hedgecraft <http://www.traditionalhedgelaying.co.uk/> [clive@traditionalhedgelaying.co.uk](mailto:clive@traditionalhedgelaying.co.uk) 01189 470298
- Mick Walters, MickSticks, Hurdle maker <http://www.micksticks.co.uk/> [micksticks@ymail.com](mailto:micksticks@ymail.com) 07788 678824
- Charles Flower, Charles Flower Wildflowers, Wildflower Consultant <http://www.charlesflower-wildflowers.co.uk/?q=consultancy> [charles@charlesflower.com](mailto:charles@charlesflower.com) 01635 248899

### **Woodfuel organisations**

- Woodheat Solutions, Forestry Commission <http://www.woodheatsolutions.eu/> Matthew Woodcock, [matthew.woodcock@forestry.gsi.gov.uk](mailto:matthew.woodcock@forestry.gsi.gov.uk)
- Thames Valley Energy, renewable energy agency <http://www.tvenergy.org/>
- Oxford Renewables, biomass and solar-thermal energy installers <http://www.oxfordrenewables.co.uk/>

### **Woodfuel suppliers**

- Hampshire Woodfuel Co-operative [william.hamer@hampshirewoodchip.co.uk](mailto:william.hamer@hampshirewoodchip.co.uk)
- Thames Valley Bioenergy <http://www.tvbioenergy.org/>
- Hillfields Wood Fuel Services <http://www.hillfieldsfarm.co.uk/wood.html>
- Wessex Biofuels Ltd <http://www.wessexbiofuels.com/>
- South East Wood Fuels Ltd <http://www.sewf.co.uk/>
- Seasoned Timber Company <http://www.seasonedtimbercompany.co.uk/>

### **Woodland reference material**

- UK Forestry Standard, FC <http://www.forestry.gov.uk/ukfs>
- Forest Research publications, FC <http://www.forestry.gov.uk/fr/INFD-5WCFJ7>
- Guidance on pollard and veteran tree management <http://publications.naturalengland.org.uk/publication/75035> and <http://tinyurl.com/Pollard-veteran-tree-m-gment>
- Life in the Deadwood: A guide to managing deadwood in FC forests, FC [http://www.forestry.gov.uk/pdf/lifeinthedeadwood.pdf/\\$file/lifeinthedeadwood.pdf](http://www.forestry.gov.uk/pdf/lifeinthedeadwood.pdf/$file/lifeinthedeadwood.pdf)
- Managing woodland open space for wildlife, FC [http://www.forestry.gov.uk/pdf/ewgs-on011-ride-mangt.pdf/\\$file/ewgs-on011-ride-mangt.pdf](http://www.forestry.gov.uk/pdf/ewgs-on011-ride-mangt.pdf/$file/ewgs-on011-ride-mangt.pdf)
- Guidance for protected species in woodlands, including bats, dormouse and great-crested newt, FC <http://www.forestry.gov.uk/england-protectedspecies>
- Guidance on badgers in woodlands, FC [http://www.forestry.gov.uk/pdf/fcpg9.pdf/\\$file/fcpg9.pdf](http://www.forestry.gov.uk/pdf/fcpg9.pdf/$file/fcpg9.pdf)

- Woodland management for birds: a guide to managing for declining woodland birds in England, RSPB 2005. ISBN 1-901930-56-4 £14.95
- Woodland management for butterflies and moths: a best practice guide, Butterfly Conservation 2011. ISBN 978-0-9562216-8-1 £15.00
- Woodland creation and management for pheasants: a best practice guide, Woodland Trust and Game and Wildlife Conservation Trust  
<http://www.woodlandtrust.org.uk/en/planting-woodland/Documents/woodland-trust-woodland-creation-management-for-pheasants.pdf>
- Game-rearing conservation guides, Game and Wildlife Conservation Trust  
[http://www.gwct.org.uk/education\\_advice/document\\_downloads/conservation\\_guides/default.asp](http://www.gwct.org.uk/education_advice/document_downloads/conservation_guides/default.asp)