Unit 15: Undertaking Woodland Habitat Management

Unit code: Y/600/9204

QCF Level 3: BTEC National

Credit value: 10

Guided learning hours: 60

Aim and purpose

This unit aims to introduce learners to woodland habitat management skills and knowledge and how these can be applied in practice. It is designed for learners in centre-based settings looking to progress into the sector or onto further/higher education. The aim of this unit is to provide learners with the ability to recognise the features of woodland habitats and the skills required for their management.

Unit introduction

Many countryside managers are responsible for an area of woodland. Well- managed woodlands, with a variety of structural features, contribute greatly to the biodiversity of the UK. Several key indicator species, such as the silver wash fritillary butterfly, dormouse and pied flycatcher, depend on properly managed woodlands for their survival. Woodlands are increasingly being valued as a source of sustainable energy to reduce our dependence on foreign fuel supplies and emissions of carbon dioxide. The general public also enjoy using woodlands as places for informal recreation. Managing woodlands correctly to meet these diverse demands has become an issue of renewed importance for countryside managers.

This unit focuses on the historical management of UK woodlands, as well as the more recent trends and issues that have affected their management. Elements of the woodland ecosystem will be investigated as well as the practical management of woodlands to ensure a diversity of habitats. Learners should experience a variety of woodland types and sizes.

By completing this unit, learners will be able to recognise and survey key features of woodland habitats and suggest woodland management techniques. They will also develop practical woodland habitat management skills. Learners will be encouraged to develop independent research skills utilising a variety of sources. This will enhance their ability to carry out research when they are given the responsibility of managing woodland habitats.

Learning outcomes

On completion of this unit a learner should:

1 Understand the historical development of woodland

2 Be able to survey the structures and features within a woodland ecosystem

3 Understand the management of woodland habitats

4 Be able to manage woodland habitats.

Unit content

1 Understand the historical development of woodland

Historical influences on woodland cover in Britain: development of wildwood (colonisation by tree species and woodland types); Vera Hypothesis; early human influences (Mesolithic, Neolithic, Bronze Age and Iron Age) and demise of woodland cover to the 20th century; development and influence of the Forestry Commission on present day woodland cover; definition and categories of ancient woodland; other changes, eg Dutch Elm Disease

Historical development of woodland types and management: development and importance of coppice, coppice with standards, wood pasture and pollarding; the establishment and management of Royal Forests and associated rights of common (pasturage, pannage, marl, estover and turbary); plantations and the influence of John Evelyn

Historic features: archaeological evidence eg earthworks, barrows, saw pits, charcoal platforms; biocultural heritage, eg ancient trees, wood banks, wood pasture, ancient woodland; other indicatorseg boundary types and shapes, wood names, plant species

Study of historic woodland: maps (ordnance survey, estate maps); tithe surveys; Domesday Book

2 Be able to survey the structures and features within a woodland ecosystem

Ecological survey: techniques eg quadrats, transects, sample plots; equipment eg measuring tapes, diameter tapes, quadrats, light meters, thermometers, pitfall traps; data recording eg tallies, use of record sheets; interpretation of results eg frequency, relative frequency, central measures (mean, median, mode) as appropriate; data presentation eg tables, charts, figures; health and safety; PPE; risk assessment

Vertical structure: identification of ground, herbaceous, shrub and tree layers and identification of species within each layer; classes of tree found in the canopy – dominant, sub-dominant, intermediate, suppressed, dying; survey of plants within the layers

Horizontal structure: glades, rides, woodland margins

Features: epiphytes, dead wood, boundaries (walls, banks and hedges), ponds, streams and ditches

3 Understand the management of woodland habitats

Management of coppice and coppice with standards: re-introduction of coppicing; consideration of coppice species and the age of coppice growth; planning coppice rotation including length of rotation, frequency of cutting, size, layout and distribution of coupes; conversion of neglected coppice to high forest; management of standards eg species, density, distribution, pruning (particularly of epicormics on oak)

Management of plantations on ancient woodland sites (PAWS): effects of planting conifers; importance of surviving broadleaves; treatment of conifers; current Forestry Commission policies

Management of grazed woodland: control of grazing; encouragement of natural regeneration; management of pollards

Creation and management of associated woodland habitats: glades and clearings; rides (including materials for new rides), width, shape and cutting of ride vegetation; management of wood banks and hedges; ponds (including vegetation around ponds); impact of pests on woodland habitats eg deer, squirrels, rabbits, goats, boar

Management plans: aims and objectives; site assessment; prescription of suitable management options; sources of grants; formulation of basic work programme; maps and plans; health and safety; risk assessment

4 Be able to manage woodland habitats

Health and safety: preparation and use of risk assessments; correct use and maintenance of tools and equipment (preparation, checks and adjustments, cleaning and storage); proper management of work area; protection of self and others; personal protective equipment (PPE)

Wildlife conservation: recognition of the positive effect of work on biodiversity and the control of possible harmful effects on sensitive features of woodland habitats, particularly management of waste to cause minimum damage to the environment

Management techniques: eg felling, coppicing, pruning, thinning, cutting or mowing; timing of management works; selection of plants and/or stems; correct cutting to give desired product as appropriate; regenerating stools protected from browsing animals where required

Assessment and grading criteria

In order to pass this unit, the evidence that the learner presents for assessment needs to demonstrate that they can meet all the learning outcomes for the unit. The criteria for a pass grade describe the level of achievement required to pass this unit.

Assessment and grading criteria		
To achieve a pass grade the evidence must show that the learner is able to:	**To achieve a merit grade the evidence must show that, in addition to the pass criteria, the learner is able to:**	**To achieve a distinction grade the evidence must show that, in addition to the pass and merit criteria, the learner is able to:**
P1 discuss the historical influences that have created the current level of woodland cover in the UK	**M1** determine the historical importance of a woodland using field information	**D1** write a management plan for a selected woodland taking account of historic and ecological information from different sources
P2 explain the development of woodland types and management systems		
P3 compare historic features within a woodland		
P4 carry out a survey of a woodland	**M2** determine the National Vegetation Classification of a woodland from survey information	
P5 report on the structures and features of a woodland ecosystem [IE]		
P6 evaluate the different types of woodland habitats and relevant management techniques	**M3** review the management of a selected woodland and recommend improvements	
P7 prepare equipment and resources for the practical management of woodland habitats [SM]	**M4** plan and supervise practical management work on a selected woodland habitat.	**D2** present evidence that the practical management of a woodland habitat is important for wildlife conservation.
P8 safely carry out practical management of woodland habitats [EP, TW]		
P9 recommend improvements to the management of woodland habitats.		

PLTS: This summary references where applicable in the pass criteria, in the square brackets, the elements of the personal, learning and thinking skills. It identifies opportunities for learners to demonstrate effective application of the referenced elements of the skills.

Key	IE – independent enquirers	RL – reflective learners	SM – self-managers
	CT – creative thinkers	TW – team workers	EP – effective participators

Essential guidance for tutors

Delivery

This unit focusing on the development of learners' practical skills to enable them to manage small woodlands with confidence, with an emphasis on skills developed in the field. These include the recognition of historic features, identification of vegetation layers and principal species, and the ability to recommend and carry out practical woodland habitat management. As a result, it is intended that much of the learning will take place in woodland situations supplemented with theory discussions in the classroom. External visits to view historical documents, such as an estate office of a large country estate or a local history centre, are strongly advised.

Health and safety issues must be stressed and reinforced regularly, and risk assessments must be undertaken before any practical activities. Adequate PPE must be provided and used following the production of suitable risk assessments.

Although the unit has four learning outcomes it is essentially divided into two parts reflecting the distinction criteria. The first part of the unit focuses on woodland features and how they can be managed to meet multiple objectives. As they progress through the unit, learners will develop an appreciation of the interrelationship between humans and trees over millennia and how our current woodland resource and associated wildlife have been shaped by human intervention. Delivery needs to enable learners to develop the skills needed to 'read' a woodland and sense some of its history.

Central to this understanding of woodlands should be the development of learners' identification skills which will provide them with the confidence to discern different woodland types and become familiar with the National Vegetation Classification system as it applies to woodlands.

A central tenet of countryside management, particularly considering the long-term nature of woodlands, is the importance of management plans in ensuring a continuity and progression of practices designed to meet a variety of objectives. Learners should be introduced to several different woodland habitats and the techniques used in their management. Using knowledge gained in the field, plus the results of their independent research, learners will need the opportunity to create a management plan for a woodland. It is anticipated that the woodland would be familiar to learners, perhaps as the subject of previous work on the recognition of historic features and the identification of principal species. If the woodland is not owned by the centre, or by a local charity ie the Woodland Trust, then the tutor will need to secure written permission from the owner in terms of access and study. An ideal woodland would be one where a management plan has not already been written to avoid learners duplicating work.

The second part of the unit is based around practical habitat management work within woodlands. Much of this will be using hand tools, but power tools can be used if learners have received the required training and certificates, and are equipped with the necessary personal protective equipment. Learners should be encouraged to carry out the planning (including risk assessment) and supervision of tasks themselves to develop their confidence in leading voluntary work parties. A safety briefing should be carried out for every task including the identification of site hazards, the safe use of tools; the correct procedures for finishing the task; and leaving the site in a safe condition. In addition, learners should develop their understanding of the importance of their work for nature conservation.

Outline learning plan

The outline learning plan has been included in this unit as guidance and can be used in conjunction with the programme of suggested assignments.

The outline learning plan gives **an indication of the volume of learning it would take the average learner** to achieve the learning outcomes. It is **indicative and is one way of achieving the credit value**.

Learning time should address all learning (including assessment) relevant to the learning outcomes, regardless of where, when and how the learning has taken place.

Topic and suggested assignments/activities and/assessment
Introduction and overview of the unit.
Assignment 1: Historical Development of Woodlands (P1, P2, P3, M1) Tutor introduces the assignment.
Theory session: changes to woodland cover in the UK; description of 'wildwood'; human influences and use of woodlands during different periods, historical features and their significance.
The development of different types of traditional woodlands; rights of common and uses.
Field studies of selected woodland for historical evidence.
External visit or guest speaker: sources of historic information; types, where they can be found, reliability.
Gathering written records of history for a selected woodland.
Assignment 2: Woodland Surveys (P4, P5, M2) Tutor introduces the assignment.
National Vegetation Classification – concept and application.
Field studies of ecological features.
Assignment 3: Management Techniques for Woodland Habitats (P6, M3, D1) Tutor introduces the assignment.
Theory session: types of woodland habitats.
Discussion of management techniques for woodland habitats.
Features of a management plan.
Assignment 4: Practical Management of Woodland Habitats (P7, P8, P9, M4, D2) Tutor introduces the assignment.
Practical session: practical habitat management – principles.
Planning and preparation for task; risk assessment.
Participation in practical tasks.
Preparation and presentation of evidence.
Unit review.

Assessment

For P1 and P2, learners will need to bring together information from classroom sessions and their own research to describe the historical development of woodlands. Evidence could be in the form of an illustrated report or an annotated poster.

For P3, learners need to recognise historical features in a woodland. Local ancient woodlands can be identified from published inventories at county level. Many have access via public rights of way or by being owned by a local wildlife trust or woodland charity. Evidence for P3 could be a completed record sheet or annotated map.

For P4 and P5, learners are required to complete an ecological survey of a woodland and report on the structures and features of a woodland ecosystem Suitable evidence could be completed survey sheets. Only one survey (which could be the same woodland as for P3) needs to be presented as evidence, but several (two or more) woodlands should be surveyed to introduce learners to a variety of woodland types and to give them more than one opportunity to meet the criteria. This could be useful if a learner misses a session due to illness or other reasons.

For P6 learners are expected to evaluate different woodland habitats and management techniques. A minimum of three habitats and techniques should be included. This could be in the form of an illustrated report or an oral presentation using suitable software, accompanied by notes.

For P7 and P8, learners are required to prepare for and participate in practical management tasks. Evidence will be required for at least two tasks, which may use two different techniques, or one technique in two different woodland habitats. Examples of tasks include coppicing in a small woodland; laying a woodland hedge; pond clearance; ride edge management; pruning epicormics. Assessment of P7 and P8 must reflect the learner's consideration of safe working practices, risk assessment and use of personal protection equipment. Evidence could include a practical observation record, supported by a completed risk assessment form and tools' list.

For P9 learners need to make at least two recommendations for the management of woodland habitats. Evidence may be in the form of a verbal or written report.

For M1, learners are expected to build on the knowledge gained for P1 and P2, and the information gathered during P3, to determine the historical importance of a woodland. Evidence could be a short illustrated report or an annotated poster using images and information obtained during a field visit to a woodland.

For M2, learners need to analyse field survey information (from the woodland studied for P4 and P5), combined with information from classroom sessions and their own research, to determine the National Vegetation Classification of a woodland. Evidence could be a short scientific report.

For M3, learners are expected to use information obtained from a woodland visit (which could be the same woodland as for P4 and P5) and make management recommendations, based on information obtained during classroom sessions and their own research. Evidence could be in the form of a short report or an annotated poster.

For M4, learners are expected to plan and supervise one of the practical habitat management tasks carried out for P7 and P8. Learners should identify the objectives for the task, and carry out a briefing as part of their supervision. A practical observation record would provide suitable evidence.

For D1, learners are expected to write a management plan for a selected woodland that utilises information gained during field visits. The woodland could be the same as that studied for M1, M2 and M3. Learners need to demonstrate clearly that they have taken historical and ecological factors into account when creating their plan. Evidence could be a written report.

For D2, learners are expected to present evidence that the practical habitat management (which could be the same as that carried out for M4) is important for wildlife conservation. Suitable evidence could be an annotated poster or an oral presentation.

Programme of suggested assignments

The following table shows a programme of suggested assignments that cover the pass, merit and distinction criteria in the grading grid. This is for guidance and it is recommended that centres either write their own assignments or adapt any Edexcel assignments to meet local needs and resources.

Criteria covered	Assignment title	Scenario	Assessment method
P1, P2, P3, M1	Historical Development of Woodlands	As a countryside warden, you have been asked to create an interpretation panel on the edge of an old coppice to show the history of the woodland. The panel will describe the history of woodlands in Britain with a special focus on the features and historical importance of the coppice.	Annotated poster.
P4, P5, M2	Woodland Surveys	You are a countryside warden and have been asked by a local community group for assistance in managing their woodland. Before any work can be carried out a survey of the woodland needs to be completed, including the NVC of the woodland.	Written report showing survey results.
P6, P7, M3, D1	Management Techniques for Woodland Habitats	You are a countryside officer for a woodland charity and have been asked to write a management plan for a selected woodland. Include a review of management techniques for different woodland habitats, and recommendations to improve the woodland.	Oral presentation with accompanying notes. Illustrated report.
P8, P9, P10, M4, D2	Practical Management of Woodland Habitats	You are the volunteer manager for a local wildlife trust and are leading a task to improve a woodland habitat. Plan the tools and equipment that will be required and the health and safety issues that will need to be considered.	Practical observation record/written evidence.

Links to National Occupational Standards, other BTEC units, other BTEC qualifications and other relevant units and qualifications

This unit forms part of the BTEC land-based sector suite. This unit has particular links with:

Level 2	Level 3
Conservation and Improvement of British Habitats	Understanding Woodland Management
	Element EC24.1 Assess site resources Element EC24.2 Produce site management plans

Essential resources

Learners will need access to written sources of information on woodland habitats and the National Vegetation Classification system. Learners should also have exposure to a variety of woodland types and habitats. A store of equipment for surveying woodlands should be available to learners, as well as tools and equipment for practical habitat management tasks.

Employer engagement and vocational contexts

Centres are encouraged to make links with local farms or country estates, woodland charities, or local authority countryside management teams. Another valuable link would be with a local history museum or a county records centre.

Indicative reading for learners

Textbooks

Broad K – *Caring for small woods: a practical manual for woodland owners, woodland managers, woodland craftsmen, foresters, land agents, project officers, conservationists, teachers and students* (Earthscan, 1998) ISBN 1853834548

BTCV and Agate E – *Woodlands: a practical handbook* (BTCV Enterprises, 2002) ISBN 0946752338

Buckley G P – *Ecology and management of coppice woodlands* (Chapman & Hall, 1992) ISBN 0412431106

Fuller R J – *Coppiced Woodlands: Their management for wildlife* (Joint Nature Conservation Committee, 1993) ISBN 1873701322

Hall JE and Kirby KJ – *National vegetation classification field guide to woodland* (Joint Nature Conservation Committee, 2001) ISBN1861075235

Harmer R and Howe J – *The silviculture and management of coppice woodlands* (Forestry Commission, 2003) ISBN 085538591X

JNCC – *Field guide to woodland* (Joint Nature Conservation Committee, 2004) ISBN 1861075235

Peterken G F – *Woodland conservation and management* (Chapman & Hall, 1993) ISBN 0412557304

Rackham O – *Ancient Woodland; its history, vegetation and uses in England* (Nottingham University Press, 2003) ISBN 1897604270

Journals

British Wildlife

Quarterly Journal of Forestry

Small Woods

Websites

www.btcv.org.uk	British Trust for Conservation Volunteers
www.forestry.gov.uk	Forestry Commission
www.rfs.org.uk	Royal Forestry Association
www.smallwoods.org.uk	Small Woods Association
www.woodlandtrust.org.uk	Woodland Trust

Delivery of personal, learning and thinking skills (PLTS)

The following table identifies the PLTS opportunities that have been included within the assessment criteria of this unit:

Skill	When learners are ...
Independent enquirers	carrying out a woodland survey and analysing the results
Team workers	working together on practical habitat management tasks
Self-managers	planning and preparing for practical habitat management tasks
Effective participators	explaining to others the benefits of carrying out practical tasks describing the best methods for carrying out practical tasks.

Although PLTS opportunities are identified within this unit as an inherent part of the assessment criteria, there are further opportunities to develop a range of PLTS through various approaches to teaching and learning.

Skill	When learners are ...
Creative thinkers	carrying out practical tasks and coping with changing conditions, such as the weather
Reflective learners	assessing the progress of practical tasks and making suggestions for improvements.

Functional Skills – Level 2

Skill	When learners are ...
ICT – Use ICT systems	
Select, interact with and use ICT systems independently for a complex task to meet a variety of needs	interpreting and analysing data from field surveys
ICT – Find and select information	
Select and use a variety of sources of information independently for a complex task	carrying out research on the history of woodlands
ICT – Develop, present and communicate information	
Enter, develop and format information independently to suit its meaning and purpose including: • text and tables • images • numbers • records	preparing written reports such as the management plan presenting an oral report on a woodland creating an annotated poster
Bring together information to suit content and purpose	putting together the management plan from several sources and types of information
Present information in ways that are fit for purpose and audience	creating an oral presentation or annotated poster writing a professional style management plan
Mathematics	
Identify the situation or problem and the mathematical methods needed to tackle it	analysing information from woodland surveys
Draw conclusions and provide mathematical justifications	providing management recommendations based on numerical data
English	
Speaking and listening – make a range of contributions to discussions and make effective presentations in a wide range of contexts	discussing the logistics and complexities of carrying out practical habitat management tasks
Reading – compare, select, read and understand texts and use them to gather information, ideas, arguments and opinions	reading information on the National Vegetation Classification and using it to come to a conclusion on the category of the woodland studied
Writing – write documents, including extended writing pieces, communicating information, ideas and opinions, effectively and persuasively	producing clear and concise posters that communicate key points and concepts effectively using a minimum of words providing a persuasive discussion of the benefits of managing woodland habitats for nature conservation.