Unit 32: Undertaking Farm Habitat Management

Unit code: F/600/9620

QCF Level 3: BTEC National

Credit value: 10

Guided learning hours: 60

Aim and purpose

This unit aims to introduce learners to farm 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.

Introduction

Since the introduction of the Enclosures Acts many changes carried out to farm landscapes. This is a direct result of the loss of habitats and the decline in the species which are associated with them.

Over the previous years new agri-environmental policies have been introduced to reverse the loss of habitats and the decline in the species which are associated with them. This unit is aimed at those working directly with habitats such as land management advisers, farmers, gamekeepers and wildlife managers with the intent of improving their knowledge.

Knowledge will be gained, and practical skills developed, in the areas of maintaining habitats and the species related to them in the UK. It places these activities in a historical context and investigates the impact of change in this landscape on farmland biodiversity. Included within this unit are the methods used to enhance, create and restore habitats and the skills needed to survey and establish their condition and value.

Learning outcomes

On completion of this unit a learner should:

1 Understand the development of the agricultural landscape

2 Understand the ecology of farm habitats and wildlife species

3 Be able to carry out farm habitat and species surveys

4 Be able to carry out practical farm habitat management.

Unit content

1 Understand the development of the agricultural landscape

Agricultural landscape types: primeval landscapes, medieval landscape, pre-enclosure landscape, enclosure landscape, Industrial Revolution and the landscape, post 1940's landscape, modern day agricultural landscape; current relevant legislation and policies (that have shaped the farm landscape) eg Enclosures Acts, Corn Laws, Agriculture Act 1947, Common Agriculture Policy (CAP); ecological impacts (species, habitat)

Global and national events: effect of global and national events on farm habitats eg Industrial Revolution, First and Second World Wars, UK joining the EU; ecological impacts where relevant eg species, habitat

Changes in farm practice: effect of mechanisation on the farm landscape eg hedgerow removal, block cropping, wetland drainage, improved cropping, cultivation techniques, agro-chemical and fertilisers, irrigation, monocultures, organic production, fieldscale vegetables, integrated cropping, diversification, the greening of the farmed landscape; ecological impacts on species and habitat

2 Understand the ecology of farm habitats and wildlife species

Characteristic farmland habitats: locally occurring, relevant examples eg hedges, stone walls, ponds and lakes, rivers and streams, woods, trees, field margins, conservation headlands, beetle banks, stone curlew and sky lark plots, grasslands

Characteristic farmland fauna: birds eg grey partridge, barn owl, sky lark, corn bunting, stone curlew, yellow hammer, linnet, turtle dove; mammals eg brown hare, harvest mouse, bat species, badgers, deer species; reptiles and amphibians eg grass snake, great crested newt, slowworm; invertebrates, insects eg beetles, hoverflies, bumblebees, butterflies; species farmland habitat requirements

Farm biodiversity action plans: Habitat Action Plans (HAPs) eg Ancient and/or Species-Rich Hedgerows Action Plan, Cereal Field Margins Action Plan, Grassland Action Plans, Species Action Plans (SAPs) eg grey partridge, brown hare; ecological importance of habitat diversity in the farmed landscape; process of species and habitat action planning

3 Be able to carry out farm habitat and species surveys

Survey methods: habitat and species survey methods eg whole farm assessments, LEAF audit, farm environmental record, Farm Environmental Plans (FEPs under the Environmental Stewardship Scheme), Phase 1 habitat survey, hedgerow survey, farmland bird surveys, arable plants survey; species commonly found on farms (birds, mammals, grasses, shrubs, trees, wildflowers), identification; evaluation of ecological features on farms; assessing nature conservation value; habitat condition assessment; recognising the potential for improvements in biodiversity on farms

4 Be able to carry out practical farm habitat management

Practical farm habitat management: methods used to create and establish farm habitats eg farm woodland planting, hedge planting, wetland and pond creation and restoration, grassland creation and restoration, including grass margins, arable reversion options and methods, disturbed arable margins creation, game cover crop margins creation, maintenance and management; special schemes eg Environmental Stewardship Scheme, Beetle Bank, stone curlew plot, creation and management

Practical task allied skills: health and safety considerations on farmland; personal protective equipment (PPE); risk assessment; use of volunteers on farms; tools and equipment (safe use, servicing, maintenance); grants and incentives for improving farmland biodiversity eg Environmental Stewardship Scheme, Entry Level and Higher Level Schemes; current legislation and codes of practice relevant to practical habitat management on farms eg Defra Codes of Good Agricultural Practice, Air Code, Soil Code and Water Code, Countryside and Rights of Way Act 2000, Natural England and Rural Communities Act 2006, Wildlife and Countryside Act 1981

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 assessment 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 explain the development of the agricultural landscape in the UK [IE, SM, EP]	**M1** discuss the ecological impacts of specified changes in farm practice	**D1** discuss, in depth, opportunities for conserving biodiversity in the modern agricultural landscape
P2 explain effects of legislation or policy on the development of the farmed landscape [IE, SM, EP]		
P3 explain the ecological importance of habitat diversity in a selected farmed landscape [IE, SM, EP]	**M2** explain the effectiveness of selected biodiversity planning on a given farm landscape	
P4 evaluate the effectiveness of a given biodiversity action plan [IE, SM, EP, CT]		
P5 carry out ecological surveying of a given farm habitat [IE, SM, EP]	**M3** explain ecological characteristics surveyed	**D2** evaluate the nature conservation interest and habitat improvements to a selected farm habitat recommending relevant improvements.
P6 report results of farm habitat and species surveying [IE, SM, EP]		
P7 prepare equipment and resources for practical management of farm habitats [IE, SM, EP]	**M4** justify selected methods used to restore, improve or create a farm habitat to meet given objectives.	
P8 carry out practical management techniques safely [IE, SM, EP]		
P9 recommend improvements to the management of farm habitats. [IE, SM, EP]		

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

Tutors delivering this unit have opportunities to use as wide a range of techniques as possible. Lectures, discussions, seminar presentations, site visits, supervised farm habitat practicals, internet and/or library-based research and the use of personal and/or industrial experience would all be suitable. Delivery should stimulate, motivate, educate and enthuse learners.

Work placements should be monitored regularly in order to ensure the quality of the learning experience. It would be beneficial if learners and supervisors were made aware of the requirements of this unit before any work-related activities so that naturally occurring evidence can be collected at the time. For example, learners may have the opportunity to use farm habitat management methods, and they should be encouraged to ask for observation records and/or witness statements to be provided as evidence of this. Guidance on the use of observation records and witness statements is provided on the Edexcel website (www.edexcel.com).

Visiting expert speakers could add to the relevance of the subject for learners. For example, a farmer who has carried out conservation projects on the farm, a farm conservation adviser from the Farming and Wildlife Advisory Group (FWAG), or a local biodiversity officer could talk about their work, the situations they face and the methods they use.

Whichever delivery methods are used, it is essential that tutors stress the importance of sound environmental management and the need to manage the resource using legal methods.

Health and safety issues relating to working in and around farms must be stressed and reinforced regularly, and risk assessments must be undertaken before practical activities or visit any sites. Adequate personal protective equipment (PPE) must be provided and used following the production of suitable risk assessments.

Tutors should consider integrating the delivery, private study and assessment for this unit with other relevant units and assessment instruments learners are taking as part of their programme of study.

Learning outcome 1 focuses on learner understanding of the development of the agricultural landscape. Different landscapes will be studied along with changes to farming practices, and how this has affected agriculture.

Within learning outcome 2, learners will look at the ecology of farm habitats and wildlife species. A number of different habitats will be looked at, as well as the fauna that lives within them. Biodiversity action plans will also be looked at to see how farm habitats can be managed successfully.

Learning outcome 3, focuses on learners carrying out farm habitat and species surveys including a number of surveying methods.

For learning outcome 4, learners will carry out farm management techniques. This covers the allied skills which go alongside the techniques.

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: The Development of the Agricultural Landscape (P1, P2, M1, D1) Tutor introduces the assignment.
Theory lesson – introduce the learners to the different types of landscapes found on farms. Cover the legislation relating to these.
Theory lesson – look into the national and global events which have had an impact on farming.
Theory session – Discuss the impact of the changes to farm practice.
Assignment 2: The Ecology of Farm Habitats and Wildlife Species (P3, P4, M2) Tutor introduces the assignment.
Theory session – outline and discuss the characteristics of farmland habitats.
Theory session – outline and discuss the characteristics of farmland fauna.
Theory session – look into farm biodiversity action plans, their functions and their importance.
Assignment 3 (Practical): Carry Out Farm Habitat and Species Surveys (P5, P6, M3, D2) Tutor introduces the assignment
Theory session – introduce the methods available for surveying, outlining each one.
Practical session – learners to carry out a number of the surveying methods covered in their theory sessions.
Practical session – learners to carry out their practical assessments.
Assignment 4: Carry Out Practical Farm Habitat Management (P7, P8, P9, M4) Tutor introduces the assignment.
Theory session – outline the key aspects of practical farm management and the allied skills.
Practical session – session to demonstrate practically, how to manage farm habitat and the associated skills.
Practical session – learners to carry out their practical assessment.
Unit review.

Assessment

For P1, learners should explain how agricultural landscapes have developed within the UK. Learners will need to consider the landscapes from primeval to modern day. Evidence can be in the form of a presentation or written report. Images must be used to support the text.

P2 requires learners to explain the effects of legislation and policy on the development of the farmed landscapes. A range of relevant legislation must be covered. Where possible, to ensure fairness of assessment the size and complexity of the tasks should be the same for all learners.

For P3, learners must explain the ecological importance of habitat diversity on a selected farm landscape. The farm landscape being studied can be chosen by the tutor. This can be presented in a written or oral format.

For P4, learners must evaluate the effectiveness of a given biodiversity plan. The chosen plan should be given to learners, by the tutor. This should be assessed through the production of a written report.

P5 requires learners to carry out an ecological survey on a given farm habitat. Learners should be given the habitat by the tutor, but they must chose the method of surveying. This must be assessed practically.

For P6, learners must produce a report on the survey they carried out for P5. Photographic evidence should be placed within the report.

For P7, learners need to prepare the equipment and resources required for the practical management of farm

habitats. This can be assessed practically with the addition of oral questioning.

For P8, learners are required to carry out farm habitat management techniques practically. Again, oral questioning could be used.

P9 looks at recommending improvements for the management of farm habitats. This can be presented in a format chosen by the tutor.

For M1, learners are required to discuss the ecological impacts of specified agricultural landscape changes. Tutors could focus on a particular change or negotiate it in advance with learners. Ecological impacts should include those on species and habitats in general. Evidence for M1 could take the form of a pictorial presentation with notes (possibly using appropriate software), an annotated poster or a project, and could be linked to P1 and D1.

For M2, learners must explain the effectiveness of a selected biodiversity plan on a given farm landscape. Tutors should identify the plan and landscape, or agree them through discussion with learners. Where possible, to ensure fairness of assessment the size and complexity of the tasks should be the same for all learners. Assessment could be in the form of a presentation or project that links to P2 and/or D2.

M3 requires learners to explain the ecological characteristics of a selected surveyed habitat. Tutors should identify the habitat, and this could be based on the survey conducted for P4. Where possible, to ensure fairness of assessment the size and complexity of the tasks should be the same for all learners. Descriptions should include a description of the sites surveyed and list of the species present. Evidence could be in the form of a written report. It should be linked to P3 and D3, and could also be linked with P2, M2 and D2.

M4 requires learners to select and justify the methods used to restore, improve or create a farm habitat to meet given objectives. Evidence could be a project or a pictorial presentation with notes (possibly using appropriate software). This could be linked to P4.

For D1, learners must discuss the opportunities for conserving specified farm wildlife species in the modern agricultural landscape. It is likely that the species would be a mammal or bird (for example grey partridge, brown hare or other well-researched species), but learners may have specific interests that they wish to follow. The emphasis here is the recognition that the range of agri-environment schemes available offer great opportunities for re-establishing wildlife on farms. Evidence for this could take the same format as for M1 and could be linked to P1, M1 and D2.

D2 requires learners to evaluate the nature conservation interest of a selected surveyed habitat. This could be the habitat used for P3. Evidence should include information on the assessment of the condition of the habitat, and could be linked with P3 and M3.

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, M1, D1	The Development of the Agricultural Landscape	A portfolio needs to be produced on the development of agricultural landscapes as well as the legislation which goes alongside it.	Portfolio of activities.
P3, P4, M2	The Ecology of Farm Habitats and Wildlife Species	You have been asked to produce a presentation for a local community on the ecology of a given landscape. The importance of a given biodiversity plan needs to be covered along with how effective it is.	Written assignment or oral questioning.

Criteria covered	Assignment title	Scenario	Assessment method
P5, P6, M3, D2	Carry out Farm Habitat and Species Surveys	You work for an agricultural company and have been asked to carry out a survey on land which has been chosen for development. You need to produce a report on whether or not the land can be used for development or is unsuitable due to the animals living on it.	Practical and written report.
P7, P8, P9, M4	Carry out Practical Farm Habitat Management	You have been asked to demonstrate farm habitat management techniques for a landscape of your tutor's choice to students on a related course. The equipment needs to be prepared and with carrying out the required techniques carried out. You will also need to discuss with the tutor how these management techniques can be improved.	Practical/theory.

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
Participate in Providing Estate Maintenance	Element CU88.1 Identify the need for, and plan, habitat management work Element CU88.3 Monitor and evaluate the effectiveness of habitat management work
Conservation and Improvement of British Habitats	Undertake Estate Skills

Essential resources

Learners will need access to sites where surveys and practical habitat management or creation can take place. The appropriate tools and equipment required to carry out these practicals will also need to be available.

Tutors delivering this unit should be competent and experienced in farm habitat management. Ideally, they should have recent industrial experience within the industry or show evidence of regular contact with the industry and/or technical updating.

Employer engagement and vocational contexts

Where work experience placements are used the employer can assess the learner's abilities. This needs to be discussed with the tutor and evidence must be provided.

Indicative reading for learners

Textbooks

Andrews J and Rebane M – *Farming and Wildlife: A Practical Management Handbook* (A&C Black, 1994) ISBN 0903138670

Hoskins W – *Making of the English Landscape* (Hodder and Stoughton, 2005) ISBN 0340770201

Institute of Terrestrial Ecology – *Managing Set-aside Land for Wildlife* (The Stationery Office Books, 1994) ISBN 0117015687

MacLean M – *Hedges, 2nd Edition* (The Crowood Press, 2003) ISBN 085236542X

Newby H – *Green and Pleasant Land?: Social Change in Rural England, 2nd Edition* (Avebury, 1985) ISBN 0704505053

Pain D and Pienkowski M – *Farming and Birds in Europe: Common Agricultural Policy and Its Implications for Bird Conservation* (Poyser, 2002) ISBN 0125442807

Potts G – *The Partridge: Pesticides, Predation and Conservation* (Blackwell Science, 1987) ISBN 0003832988

Rackham O – *The Illustrated History of the Countryside* (Orion Publishing Co, 2003) ISBN 0297843354

Journal

British Wildlife

Other useful publications

Defra Codes of Good Agricultural Practice (1998) Water, Soil and Air

FWAG Regional Magazines

Websites

www.adas.co.uk	ADAS Insight and Solutions
www.defra.gov.uk	Department for Environment, Food and Rural Affairs
www.environmentsensitivefarming.co.uk	Environment Sensitive Farming
www.farmwildlife.info	Wildlife Information for the Farming Community
www.fwag.org.uk	Farming and Wildlife Advisory Group
www.gct.org.uk	The Game Conservancy Trust
www.lantra.co.uk	The Sector Skills Council for the Environmental and Land-based Sector
www.rspb.org.uk	Royal Society for the Protection of Birds
www.ukagriculture.com	UK Agriculture

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	evaluating the equipment required for farm maintenance
Creative thinkers	producing, with tutor support, reports and presentations
Reflective learners	evaluating equipment for farm maintenance evaluating alternative methods of surveying equipment
Team workers	practising surveying and farm management techniques
Self-managers	producing, with tutor support, reports and presentations
Effective participators	participating in practical sessions and applying the skills developed.

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	researching the internet for information on farm habitat management researching the internet on how to use relevant pieces of equipment
Use ICT to effectively plan work and evaluate the effectiveness of the ICT system they have used	
Manage information storage to enable efficient retrieval	
Follow and understand the need for safety and security practices	
Troubleshoot	
ICT – Find and select information	
Select and use a variety of sources of information independently for a complex task	using the internet, textbooks and class notes to complete the unit assignments
Access, search for, select and use ICT-based information and evaluate its fitness for purpose	
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	producing a report which is generated on the computer
Bring together information to suit content and purpose	producing a report producing a presentation
Present information in ways that are fit for purpose and audience	
Evaluate the selection and use of ICT tools and facilities used to present information	
Select and use ICT to communicate and exchange information safely, responsibly and effectively including storage of messages and contact lists	

Skill	When learners are ...
Mathematics	
Understand routine and non-routine problems in a wide range of familiar and unfamiliar contexts and situations	
Identify the situation or problem and the mathematical methods needed to tackle it	
Select and apply a range of skills to find solutions	
Use appropriate checking procedures and evaluate their effectiveness at each stage	ensuring that the equipment is the correct size
Interpret and communicate solutions to practical problems in familiar and unfamiliar routine contexts and situations	
Draw conclusions and provide mathematical justifications	
English	
Speaking and listening – make a range of contributions to discussions and make effective presentations in a wide range of contexts	participating in presentations and class discussions on the topic of farm habitat management.
Reading – compare, select, read and understand texts and use them to gather information, ideas, arguments and opinions	
Writing – write documents, including extended writing pieces, communicating information, ideas and opinions, effectively and persuasively	