Unit 45: Livestock Use in Conservation Management

Unit code: A/600/9826

QCF Level 3: BTEC National

Credit value: 10

Guided learning hours: 60

Aim and purpose

This unit aims to introduce learners to an understanding of livestock use in conservation and how this 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.

Unit introduction

Recent decades have seen a considerable increase in the use of large herbivores as conservation management tools in a range of habitats. The Grazing Animals Project (GAP), and related organisations are addressing an increasing number of land management issues in conservation that are associated with the correct application, or restoration, of extensive grazing systems.

Learning outcome 1 considers the recent development of conservation grazing in the conservation movement, and examines the effect of grazing animals on habitats and the usefulness of the grazing animals most commonly used. The merits of a range of breeds will be discussed. Learners will also develop practical abilities to ensure the maintenance of these animals through monitoring and health checks. This will enable learners to handle and manage livestock and carry out basic assessments of the condition of grazing stock.

Learning outcome 2 investigates the interaction between flora and fauna and looks at how conservation grazing increases biodiversity and promotes sustainable management for a variety of habitats.

In learning outcome 3 learners should be able to analyse the reasons for conservation grazing, evaluate potential sites and make recommendations as to the most suitable breeds that could be used.

Learning outcomes

On completion of this unit a learner should:

1 Know the principles of conservation grazing

2 Understand how conservation grazing increases biodiversity and promotes sustainable management for a variety of habitats

3 Understand strengths and weaknesses for a range of conservation grazing strategies for a range of businesses.

Unit content

1 Know the principles of conservation grazing

Historical background: grazing as a management tool; changing perspectives in habitat management; the importance of large grazers; influence of agricultural change on livestock numbers in the countryside eg economic pressure, reduction in labour

Use: selection of species (eg ponies, cattle, pigs, sheep, goats); relative merits of traditional/native/primitive breeds for conservation grazing (quality of graze, manageability, level of maintenance required)

Influencing factors: animal health monitoring eg condition scoring for all relevant species, recognition of common and notifiable diseases; when to seek veterinary advice; health and safety, personal protective equipment (PPE); grazing health plan (health checks, maintenance checks, procedures, condition assessment)

2 Understand how conservation grazing increases biodiversity and promotes sustainable management for a variety of habitats

Sustainable management: sustainable management of habitats; interaction between flora and fauna; case histories of large herbivores on conservation sites; effects of grazing on habitats (vegetation structure, succession)

3 Understand strengths and weaknesses for a range of conservation grazing strategies for a range of businesses

Conservation strategies: conservation grazing as a habitat management tool; habitat management plans

Effective grazing regimes: species; breed or mix of species; stocking density; frequency and seasonality of grazing; costs and infrastructure required to meet practical and legislative needs of livestock; long-term monitoring of grazing effect; potential problems eg dogs, vandalism, footpaths crossing sites

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.

Unit 45 Livestock Use in Conservation Management		
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 describe the principles of conservation grazing [CT, IE, SM, RL]	**M1** explain the merits of selected breeds of a given species of grazing animal	**D1** evaluate the effects of selected grazing animals upon given habitats
P2 identify suitable animal species and breeds for use in conservation grazing projects for a range of habitats [CT, IE, SM, RL]		
P3 state factors that may influence the success of conservation grazing projects [CT, IE, SM]		
P4 recognise factors to maintain the health and welfare of conservation grazing species [CT, SM, TW]		
P5 discuss the interaction between flora and fauna that occurs in conservation grazing [IE, RL]		
P6 describe how the interaction between flora and fauna promotes sustainable management of a variety of habitats [IE, RL]		

Unit 45 Livestock Use in Conservation Management		
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:**
P7 evaluate a range of commonly employed conservation strategies [IE]	**M2** discuss the rationale for a given grazing regime.	**D2** evaluate a potential site in terms of its suitability for use by grazing animals and recommend the most suitable species and breed.
P8 identify the reasons for using conservation grazing as a component of a habitat management plan [CT, SM]		
P9 appraise the use of conservation grazing as a habitat management tool for a range of businesses. [IE]		

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

Delivery of this unit will involve practical assessments, written assessment, visits to suitable collections and will have links to industrial experience placements. Tutors delivering this unit have opportunities to use as wide a range of techniques as possible. Lectures, discussions, seminar presentations, site visits, supervised livestock monitoring practicals and/or library based research and the use of individual supervised paid/voluntary work are all suitable.

Work experience 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 prior to any work-related activities so that naturally occurring evidence can be collected at the time. For example, learners may have the opportunity to evaluate a potential site undergoing conservation grazing, and they should be encouraged to ask for observation records and/or witness statements.

Visiting expert speakers could add to the relevance of the subject. For example a shepherd or stockperson responsible for tending livestock as part of a habitat management plan, a manager of a conservation area or a breeder of rare breeds and livestock could talk about their work, the problems they face and the suitability and monitoring of livestock breeds.

Learners are expected to observe safe working practices and environmental good practice in all practical activities.

Health and safety and biosecurity issues relating to working with animals must be stressed and regularly reinforced. Risk assessments must be undertaken prior to any practical activities. Learners must be made aware of the enzootic disease that can be contracted from livestock.

Learning outcome 1 explores the recent background to the development of 'conservation' grazing. Delivery techniques should be varied and include formal lectures, discussion and supervised visits. Learning outcome 1 also involves the development of practical skills. Livestock health and welfare monitoring will require both theoretical learning and practical tasks, involving live animals where it is possible to do so. For example, carrying out a routine condition assessment for livestock, enables tutors to cover the potential application of animal health knowledge and manual handling techniques necessary to carry out health checks.

Learning outcome 2 investigates how conservation grazing increases biodiversity and promotes sustainable development for a variety of habitats. This is likely to be delivered by formal lectures, visiting speakers, site visits and independent learner research.

Learning outcome 3 is linked to the other learning outcomes and should develop learners' ability to apply their theoretical and practical knowledge in assessing an effective grazing regime. This learning outcome could be explored by a mixture of practical evaluation of actual or potential grazing sites and further development of in classroom workshop or seminar sessions.

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 the 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 to the unit, structure and programme of assignments.
Assignment 1: The Principles of Conservation Grazing (P1, P2, P3) Tutor introduces the assignment brief.
Formal input – historical background, grazing as a management tool, changing perspectives in habitat management.
Visit a selected site where livestock are used for conservation grazing.
Worksheet completion – identify different breeds of livestock used in conservation grazing.
Research and prepare materials for presentation.
Deliver presentations.
Assignment 2: Breeds Used in Conservation Grazing (M2, D2) Tutor introduces the assignment brief.
Formal input – selection of species, merits of use for conservation grazing.
Research for a group discussion on merits of selected breeds and effects of selected animals on given habitats.
Take part in group discussion.
Assignment 3: Practical Assessment (P4) Tutor introduces assignment brief.
Formal input – animal health and welfare monitoring, condition scoring, disease recognition, health checks, maintenance checks, PPE.
Practical activities.
Assignment 4: Biodiversity and Sustainable Management (P5, P6) Tutor introduces assignment brief.
Formal input – sustainable management of habitats, interaction between fauna and flora; effects of grazing on habitats.
Research case histories of large herbivores on conservation management.
Prepare and present materials for article.
Assignment 5: Case History (P7, P9) Tutor introduces assignment brief.
Formal input – use of conservation strategies and use of a habitat management plan.
Visiting speaker (eg shepherd taking part in a conservation grazing plan).
Research a case history and prepare materials for assessment.
Present evidence for assessment.

Topic and suggested assignments/activities and/assessment
Assignment 6: Conservation Grazing Plan (P8, M2, D2) Tutor introduces assignment brief.
Formal input – habitat management plan, grazing regimes, species, stocking density, frequency and seasonality of grazing, legislation, long-term monitoring, potential problems.
Group research information for display.
Prepare and present evidence for display.
Unit review.

Assessment

For P1 learners must describe the principles of conservation grazing. Learners must discuss the development of the use of conservation grazing animals as a conservation tool. For P2 learners must identify suitable grazing animal species. For P3 learners must state the factors that may influence the success of conservation grazing projects. These criteria could be linked in one assessment, for example, a presentation with handouts. As a minimum, learners should provide evidence covering 3 conservation grazing species. Tutors should identify the species and breeds, or agree them through discussion with the learners. Where possible the size and complexity of the tasks should be the same for all learners.

M1 and D1 could be assessed by means of a group discussion. For M1, learners should include differences in the quality of graze required, manageability and levels of maintenance required for each. For D1, learners must evaluate the effects of selected grazing animals upon given habitats. Learners should consider the effects of vegetation structure and succession.

P4 should be assessed by means of practical activities. Learners must recognise the factors required to maintain the health and welfare of conservation grazing species. Learners must be able to monitor the health of selected grazing species and be able to describe their welfare requirements. As a minimum, learners should provide evidence covering 3 conservation grazing species. Tutors should identify the species and breeds, or agree them though discussion with the learners. Where possible the size and complexity of the tasks should be the same for all learners. Evidence could include observation sheets, witness statements, a work log and authenticated photographic and/or video evidence.

For P5 learners must discuss the interaction between flora and fauna that occurs in conservation grazing and for P6, describe how the interaction between them promotes sustainable management of a variety of habitats. This could be assessed by means of a written article for a journal.

For P7 and P9, learners could investigate and analyse a case history. For P7 learners must evaluate a range of commonly employed conservation strategies and for P9 appraise the use of conservation grazing as a habitat management plan for a range of businesses.

P8, M2 and D2 could be assessed together. Learners could select a potential site and develop a conservation grazing plan. For P8 learners must identify the reasons for using conservation grazing as a component of a habitat management plan. For M2 learners must discuss the rationale for a given grazing regime and for D2 evaluate a potential site in terms of its suitability for use by grazing animals and recommend the most suitable species and breed. Learners could select a potential site and develop a conservation grazing plan.

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	The Principles of Conservation Grazing	You work on a large farm, tending livestock that are taking part in a conservation grazing project. You have been asked to speak at a conference on conservation grazing. You must produce a computer generated presentation in which you describe the principles of conservation grazing, identify suitable animal species and breeds that can be used and state the factors that may influence the success of conservation grazing projects.	Presentation.
P4	Practical Assessment	You will be observed undertaking practical activities in relation to the monitoring of livestock health and welfare. Produce your evidence in the form of a portfolio. Evidence could include observation sheets, witness statements and a work log. Authenticated photographic/video evidence may also be appropriate.	Observation sheets, Witness statements, Work log Authenticated photographic/video evidence.
P5, P6	Biodiversity and Sustainable Management	Write an article (about 500 words) for inclusion in an agricultural journal about the interaction between flora and flauna that occurs in conservation grazing. You must also describe how the interaction between fauna and flora promotes sustainable management of a variety of habitats.	Written evidence.
P7, P9	Case History	You will be given a case history to evaluate. You must evaluate a range of commonly employed conservation strategies and appraise the use of conservation grazing as a habitat management tool.	Written evidence.
P8, M2, D2	Conservation Grazing Plan	You will research and produce a conservation grazing plan. You must select a potential site and identify the reasons for using conservation grazing as a component of a habitat management plan. Include a rationale for a given grazing regime. You must evaluate the site In terms of its suitability for use by grazing animals and recommend the most suitable species and breed.	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
Introduction to Agriculture and Conservation	Undertaking Upland Habitat Management
Conservation and Improvement of British Habitats	Undertake Grassland Habitat Management
Introduction to Animal and Plant Husbandry	Undertake Estate Skills

Essential resources

Learners will need access to a range of sites undergoing conservation grazing by a variety of different species. For any visits, learners will need appropriate PPE, transport and appropriate first aid kit. They will also need access to livestock handling equipment, and access to at least one species of livestock for practical skills development.

Staff delivering this unit should be competent and experienced in countryside management, livestock husbandry and welfare issues. Ideally, they should possess recent industrial experience in countryside management and/or husbandry, and/or undertake regular technical updating regarding the use of grazing livestock in the countryside sector.

Employer engagement and vocational contexts

Visits to large estates, and visiting speakers from local experts eg, a land manager, a stockperson responsible for tending livestock as part of a habitat management plan or a breeder of rare breeds and relevant work experience placements will enhance the delivery of this unit.

Indicative reading for learners

Textbooks

Ausden M – *Habitat Management for Conservation: A Handbook of Techniques* (Techniques in Ecology & Conservation) (OUP Oxford, 2007) ISBN: 978 – 0198568735

Putnam R – *Grazing in Temperate Ecosystems: Large Herbivores and the Ecology of the New Forest* (Timber Pr, 1986) ISBN: 978 – 008199207l0

Vera F – *Grazing Ecology and Forest History* (CABI Publishing, 2000) ISBN: 0851994423

Wallis DeVries MF, Bakker JP, Sipke E Van Wieren – *Grazing & Conservation Management* (Conservation Biology) (Springer 1998) ISBN: 978 -0412475207

Journals

British Wildlife Magazine

Farmers Weekly

The Ark

Websites

www.britishwildlife.co.uk	British Wildlife Publishing
www.grazinganimalsproject.info	Grazing Advice Partnership
www.rbst.org.uk	Rare Breeds Survival Trust
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	reporting on the principles of conservation grazing identifying suitable animal breeds for use in conservation grazing
Creative thinkers	preparing a presentation on the principles of conservation grazing preparing a conservation grazing plan
Reflective learners	delivering a presentation producing a written article
Team workers	taking part in practical activities
Self-managers	reporting on the principles of conservation grazing identifying suitable animal breeds for use in conservation grazing taking part in practical activities.

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 ...
Independent enquirers	carrying out research for presentations and discussions
Creative thinkers	analysing and evaluating the merits of selected breeds used in conservation grazing plans
Reflective learners	analysing and evaluating the merits of selected breeds used in conservation grazing plans evaluating own performance
Team workers	receiving and giving peer help and support during tasks
Self-managers	completing tasks within time constraints
Effective participators	investigating problems that occur when carrying out practical activities taking part in a group discussion.

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	using ICT systems in order to research information for the assignments
Use ICT to effectively plan work and evaluate the effectiveness of the ICT system they have used	action planning and monitor work that needs to be completed
Manage information storage to enable efficient retrieval	saving information into files and folders
Follow and understand the need for safety and security practices	safely using ICT systems – sitting correctly at the computer, keeping food and drink away from computer equipment
Troubleshoot	
ICT – Find and select information	
Select and use a variety of sources of information independently for a complex task	carrying out research for 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 presentation on conservation grazing designing a written article
Bring together information to suit content and purpose	creating documents from research for assessment activities
Present information in ways that are fit for purpose and audience	creating documents from research for assessment activities
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	
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	presenting information on conservation grazing taking part in a group discussion
Reading – compare, select, read and understand texts and use them to gather information, ideas, arguments and opinions	researching for information about conservation grazing plans and suitability of species and breed
Writing – write documents, including extended writing pieces, communicating information, ideas and opinions, effectively and persuasively	reporting on conservation grazing plans and suitability of species and breed writing an article about biodiversity and sustainable management