

# Unit 27: Understand Deer Management

<b>Unit code:</b>	<b>R/600/9430</b>
<b>QCF Level 3:</b>	<b>BTEC National</b>
<b>Credit value:</b>	<b>10</b>
<b>Guided learning hours:</b>	<b>60</b>

## ● Aim and purpose

This unit aims to introduce learners to the skills and knowledge used in deer management 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.

## ● Unit introduction

Deer are the largest wild, land mammals in the UK. The UK's native deer species are an important part of the natural heritage and many people who visit the countryside enjoy observing deer. The growth in deer numbers means that it is more important than ever to understand deer, their behaviour and how they affect the habitats they live in.

People employed in managing habitats that include deer must have knowledge and skills relating to identifying deer, their ecology and how they live. They must understand the positive and negative influences of deer and the potential conflicts between deer management and other land uses.

Learners will consider the identification of deer with respect to species, sex, age and behaviour and become familiar with the identifying characteristics of the six common wild species.

Learners will gain essential background knowledge of deer ecology and associated behaviour, how deer use and impact on habitats and the signs to look for to establish deer presence.

The unit will enable learners to investigate how deer and deer management fit into land usage in general, where responsibilities lie and the logistics of culling deer. Legislation relevant to deer management will be studied together with codes of practice, so that learners are able to operate within the legal framework.

## ● Learning outcomes

**On completion of this unit a learner should:**

- 1 Be able to identify wild UK deer
- 2 Understand the ecology and associated behaviour of UK deer
- 3 Understand the management of wild deer.

# Unit content

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## 1 Be able to identify wild UK deer

*Species:* red; fallow; sika; roe; Chinese water deer; muntjac

*General morphology:* cloven hooved; elongated limbs; antlers and antler casting cycle; extensive scent glands; cryptic camouflage and biennial coat change

*Age:* young; yearling; adult; old

*External features:* size (height, weight); facial characteristics; body (shape, posture); coat (colouration, texture, spots); antlers; seasonal changes in appearance; condition; behavioural characteristics

## 2 Understand the ecology and associated behaviour of UK deer

*Ecology and annual life cycle:* breeding ecology; teeth and tooth eruption pattern; juvenile requirements; territories; home ranges; migration patterns; mating behaviour; feed requirements; habitat preferences; hybridisation of red and sika deer

*Behaviour:* distinguishing behaviour between species; correct terminology; relevance to species management; pre- and post-breeding (herding, wallowing, barking); rutting; social structure

*Impact on habitats:* damage to agricultural crops; damage within woodlands; susceptibility of tree and crop types to damage; tracks and trails; browsing and browse line; fraying; thrashing, bole scoring; scrapes; wallows; couches; dung; natural regeneration of vegetation; effect on other species; economic consequences of damage; methods of habitat protection (fencing, tree guards, chemical repellents, use of alternative/supplementary feeding)

*Habitat preferences:* preferences for each of the six species; habitat types eg open forest, woodland (coniferous, broadleaved or mixed), moorland, undergrowth, swamps and reed beds; feed preferences and feeding behaviour

*Signs of deer:* sightings; tracks and trails; slots and racks; browsing and browse line, height for different species; fraying; thrashing, bole scoring; scrapes; wallows; couches; dung

## 3 Understand the management of wild deer

*Relevant current legislation and codes of practice:* eg current legislation, eg Deer Act 1991, Wildlife and Countryside Act 1981, Wild Mammals (Protection) Act 1995, Wild Game Meat (Hygiene and Inspection) Regulation 1995, Deer (Scotland) Act 1996, Firearms Act 1968 (and amendments); statutory Close seasons; best practice guides

*Management plan:* location; site description, habitat type; designated areas; history of management; species present; future management objectives and strategies; responsibilities; population (dynamics, annual turnover) and estimation; stalking; cull planning; carcass (retrieval, handling); landowner objectives; health and safety

## 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:
<b>P1</b> identify the six deer species found in the UK	<b>M1</b> explain the importance of accurately identifying deer species and their sex and age	<b>D1</b> discuss in depth how deer management of selected species relates to their ecology and life cycle
<b>P2</b> describe features of deer used to identify their sex		
<b>P3</b> describe features of deer used to identify age		
<b>P4</b> review the annual life cycle of the six deer species found in the UK	<b>M2</b> explain habitat requirements of the six deer species in relation to their life cycle	
<b>P5</b> explain the breeding ecology of the six deer species found in the UK		
<b>P6</b> compare the habitat preferences of the six deer species		
<b>P7</b> evaluate signs of deer presence in an area [RL]		
<b>P8</b> outline the legal requirements that control the management of deer [IE]	<b>M3</b> suggest a deer management plan to meet given objectives.	<b>D2</b> evaluate a deer management plan and recommend improvements.
<b>P9</b> describe how given common and statutory laws apply to the management of UK wild deer [EP]		
<b>P10</b> specify the legal requirements that control the management of deer		
<b>P11</b> outline current deer management codes of practice		
<b>P12</b> summarise the requirements of a deer management plan.		

**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.

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

# Essential guidance for tutors

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## Delivery

Delivery of this unit will involve practical assessments, written assessment, visits to suitable collections and habitats where deer are present and may link to work 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 deer-related practicals, internet and/or library-based research and the use of personal and/or industrial experience would all be suitable.

Where used to support delivery of this unit, 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 are undertaken so that naturally occurring evidence can be collected at the time. For example, learners may have the opportunity to survey deer habitats or populations and they should 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.

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

Health and safety issues relating to working in an outdoor environment 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.

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 deals with the identification of wild UK deer. Delivery is likely to be through classroom-based activities, discussions, site visits to deer parks and farms, practical sessions and independent learner research. Learners will become aware of the methods and associated activities commonly used to identify deer. Every opportunity should be used to encourage learners to make connections between the learning outcomes to gain a better understanding of the subject area as a whole. Site visits to deer habitats would be beneficial, but good quality audio-visual materials could be used to supplement site visits and cover all six common wild UK species. Health and safety issues must be addressed before learners visit any outdoor sites or handle animal material.

Learning outcome 2 covers deer ecology and signs of deer. The ecology and annual life cycle for each of the six common wild UK deer species should be covered. Learners must understand how deer impact on the habitats they live in, together with the signs and tracks that they create. Delivery is likely to be through classroom-based activities, discussions, site visits, practical sessions and independent learner research. Visiting expert speakers could add to the relevance of the subject. For example, a deer manager or deer initiative/deer commission officer could talk about their work, the situations they face and the methods they use.

Learning outcome 3 deals with deer legislation and management plans, including population estimation. Again, delivery is likely to be through classroom-based activities, discussions, site visits, practical sessions and independent learner research. The legislative framework in which deer managers must work should be referred to where appropriate. Health and safety issues must be addressed before learners visit any outdoor sites.

## 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 to the unit, structure and programme of assignments.
<b>Assignment 1: Deer Species</b> (P1, P2, P3, M1)
Tutor introduces the assignment brief.
Classroom activity: reasons for identifying deer species, sex and age.
Visit to see one or more deer species.
Classroom activity: features to identify deer, and their sex and age.
Learner practice: species identification.
In class assessment: deer identification.
<b>Assignment 2: Deer Life Cycle</b> (P4, P5, P6, P7, M2, D1)
Tutor introduces the assignment brief.
Learner research and classroom presentations: life cycle and habitat preferences of the six deer species.
Classroom activity: breeding ecology of six deer species.
Classroom discussion: signs of deer presence.
Visit to see and evaluate evidence of deer presence.
Guest speaker: to discuss deer habitat requirements throughout life cycle.
Case study: relating management to ecology, behaviour and life cycle.
Learner research and assessment completion.
<b>Assignment 3: Deer Management Plans</b> (P8, P9, P10, P11, P12, M3, D2)
Tutor introduces the assignment brief.
Learner research and classroom exercise: legislation affecting deer management.
Guest speaker: operating within legislation and codes of practice to manage deer.
Classroom activity: codes of practice and their purpose.
Classroom activity: components of a deer management plan, use of case study material.
Classroom activity: how to evaluate management plans, use of objectives.
Learner research and assessment completion.
Unit review.

## Assessment

For P1, learners must identify the six common wild UK deer species, using correct terminology. As all six species are rarely available at any one site, the use of pictorial and/or high quality audio-visual materials will be necessary for assessment. It is important that learners show that they can identify deer 'cold', ie when presented with just a live animal or image and no other information.

P2 and P3 require learners to describe features of deer used to identify their sex (P2) and age (P3). Learners are expected to identify deer in broad age ranges only (young, yearling, adult, old) and not in specific year classes. Evidence could take the form of a pictorial presentation with notes (possibly using appropriate software or an overhead projector), a written project, leaflet or poster.

For P4 and P5, learners must discuss deer life cycle (P4) and explain the breeding ecology (P5) of the six common wild deer species found in the UK. Evidence could be linked to P2 and P3 and take the same form.

P6 requires learners to compare the habitat preferences of the six deer species. Evidence may be linked to P4 and P5 and take the same form.

P7 requires learners to recognise and evaluate signs of deer presence in an area. Tutors should identify the area or agree it in discussion with learners. Evidence could take the form of a pictorial presentation with notes (possibly using appropriate software or an overhead projector), an annotated poster or a project. This could also be assessed directly by the tutor during practical activities. If this format is used, suitable evidence from guided activities would be detailed observation records completed by the learner and tutor. If assessed during a placement, witness statements should be provided by a suitable representative and verified by the tutor. Guidance on the use of observation records and witness statements is provided on the Edexcel website.

P8 and P10 require learners to outline (P8) and provide detail for (P10) the legislation associated with deer management. This could be for a given scenario. Evidence could take the form of a written case study, a section of a guide book, a pictorial presentation with notes (possibly using appropriate software or an overhead projector) or a written project.

For P9, learners need to describe how given laws apply to the management of UK wild deer. A minimum of four laws should be included, which may be those described in P8 and P10. Learners will need to show they understand the application of the law and how it affects management practice. Evidence may take the same format as for P8 and P10.

P11 requires learners to outline the current codes of practice associated with deer management. This could be for a given scenario. Evidence could be linked to P8 and take the same form.

For P12, learners must outline the requirements of a deer management plan, identifying the key areas of importance when considering managing a population of deer. The requirements of a plan could be for a given scenario or site; if this is used the tutor should identify the scenario/site or agree it through discussion with learners. Evidence could take the form of a written or verbal report.

M1 requires learners to explain the importance of accurately identifying the species, sex and age. Evidence could be linked to P1, P2 and P3 and take the same form.

For M2, learners are required to explain the habitat requirements of each of the six deer species in relation to their life cycle. Evidence could be linked to P4, P5, P6 and P7 and take the same form.

M3 requires learners to suggest a deer management plan to meet given objectives. The objectives could be given by the tutor or agreed through discussion with learners. The use of a case study or real deer management situation would be particularly relevant in generating evidence. Evidence may be in the format of a written plan covering a year's management activities, possibly using one of the recognised formats produced by, for example, The Deer Initiative or Deer Commission Scotland.

For D1 learners must discuss in depth how deer management relates to the ecology and life cycle of a minimum of two selected species. This requires learners to demonstrate an application of the knowledge presented for the pass and merit criteria. Evidence may be a detailed written report or verbal presentation

with supplementary notes.

For D2 learners are required to evaluate a deer management plan and recommend improvements. This could be the plan they suggested in M3 or that of a colleague, or one provided by the tutor. The evaluation may be written or verbal and should be clearly based on the plan's likelihood of achieving the objectives, together with factors such as cost, skill, practicability, sustainability and compliance with legislation and codes of practice.

### 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	Deer Species	You have applied for a prestigious post in a deer park. As part of the interview process you are required to identify the six deer species found in the UK from photographs. Having successfully been offered the post, you have then been asked to create an illustrated guidance leaflet for park volunteers, describing the features of deer used to identify their sex and age, and explaining the importance of identifying deer species, sex and age.	In-class identification test. Illustrated leaflet.
P4, P5, P6, P7, M2, D1	Deer Life Cycle	You have now become a recognised deer expert, and have been asked to provide some information for trainee estate managers. Create a guidance booklet, which includes an explanation of the annual life cycle, breeding ecology and habitat preferences of the six UK deer species. Explain how the habitat requirements of each species relate to their life cycle, and how deer management relates to the ecology and life cycle of two species. One estate has also asked for your opinion on whether deer are present on their estate: complete a report after you have visited the area.	Guidance booklet. Written report.
P8, P9, P10, P11, P12, M3, D2	Deer Management Plans	As a recognised deer expert, you have been asked to assist an estate by suggesting a management plan to meet their objectives. To help them for the future, include guidance notes on the requirements of a plan, and current legislation and codes of practice and how they affect deer management practices. Another estate has already produced a deer management plan, and has asked if you will evaluate it and recommend improvements. Create a written report of your evaluation and suggestions.	Management plan and guidance notes. Written report.

## 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
Introductory Deer Management	Understanding Captive Deer Herd Management
	Understand Deer Population Monitoring and Management Plans

### Essential resources

Learners will need access to a sizeable area of land holding wild deer and transport to the area. The area must include a large part of the typical home range of the species of deer present. For some purposes access to a deer park may be useful, along with binoculars and/or spotting scopes.

Demonstration items are needed, such as deer skulls, jawbones, antlers and other skeletal parts, to demonstrate essential features of deer species (including abnormalities) and for the complete range of tooth eruption and wear for at least one species.

A large collection of deer-based images, similar in range to those provided by the British Deer Society's distance learning package, is needed. Radio or other communication methods can aid effective fieldwork and satisfy health and safety requirements.

In a woodland situation regularly maintained high seats can be useful.

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

### Employer engagement and vocational contexts

This unit focuses on practical aspects of deer management together with the features and ecology of the six UK deer species. Centres are encouraged to create and develop links with local sporting estates. This could be via guest lectures, practical workshops or visits to see gamekeepers actively involved in deer management.

### Indicative reading for learners

#### Textbooks

Carne P – *Deer of Britain and Ireland: Their History and Distribution* (Swan Hill Press, 2000) ISBN 1840370912

Chapman D and Chapman N – *Fallow Deer: Their History, Distribution and Biology, Second Edition* (Coch-y-Bonddu Books, 1997) ISBN 0952851059

Chapman N and Harris S – *Muntjac Deer* (Kluwer Academic Publishers, 1996)  
ISBN 0412442604

Clutton-Brock T and Albon S – *Red Deer in the Highlands: Dynamics of a Marginal Population* (Blackwell Science Ltd, 1989) ISBN 0632022442

Clutton-Brock T – *Red Deer: The Behaviour and Ecology of Two Sexes* (Edinburgh University Press, 1985)  
ISBN 0852244479

- Dansie O, Cooke A and Farrell L – *Muntjac* (*Muntiacus reevesii*) and Chinese Water Deer (*Hydropotes inermis*) (British Deer Society, 1983) ASIN: B001AVY30Q
- Forestry Commission – *Roe Deer Biology and Management* (The Stationery Office Books, 1992) ISBN 0117103101
- Forestry Commission – *The Management of Red Deer in Upland Forests* (The Stationery Office Books, 1987) ISBN 0117102105
- Horwood M and Masters E – *Sika Deer* (Deer Study and Resource Centre, 1970) ISBN 0902754041
- Kirby K and Mitchell T – *Deer Management and Woodland Conservation in England* (English Nature, 1997) ISBN 1857162579
- Langbein S and Chapman N – *Fallow Deer* (Mammal Society, 2004) ISBN 0902754262
- Mayle B – *How Many Deer?: A Field Guide to Estimating Deer Population Size* (Forestry Commission, 1999) ISBN 0855384050
- McCulloch N – *Deer Management Conference* (Red Deer Commission, 1990)
- Nahlik A – *Management of Deer and Their Habitat: Principles and Methods* (Coch-y-Bonddu Books, 1992) ISBN 0907519016
- National Trust – *Management of Deer on National Trust Land* (National Trust, 1996)
- Prior R – *Deer Watch* (Swan Hill Press, 1993) ISBN 1853104272
- Prior R – *The Roe Deer: Conservation of a Native Species* (Swan Hill Press, 1995) ISBN 1853105325
- Prior R – *Trees and Deer: How to Cope with Deer in Forest, Field and Garden* (Swan Hill Press, 1994) ISBN 1853104329
- Putman R – *The Natural History of Deer* (Cornell University Press, 1993) ISBN 0801422833
- Red Deer Commission – *Red Deer Management: A Practical Book for the Management of Wild Red Deer in Scotland* (The Stationery Office Books, 1981) ISBN 0114916926
- Smith-Jones C – *Muntjac: Managing an Alien Species* (Coch-y-Bonddu Books, 2004) ISBN 190478402X
- Whitehead G – *The Whitehead Encyclopaedia of Deer* (Swan Hill Press, 2003) ISBN 1904057195

## Journal

*Deer*

## Websites

<a href="http://www.basc.org.uk">www.basc.org.uk</a>	British Association for Shooting and Conservation
<a href="http://www.bds.org.uk">www.bds.org.uk</a>	The British Deer Society
<a href="http://www.dcs.gov.uk">www.dcs.gov.uk</a>	Deer Commission for Scotland
<a href="http://www.defra.gov.uk">www.defra.gov.uk</a>	Department for Environment, Food and Rural Affairs
<a href="http://www.environment-agency.gov.uk">www.environment-agency.gov.uk</a>	Environment Agency
<a href="http://www.forestry.gov.uk">www.forestry.gov.uk</a>	The Forestry Commission
<a href="http://www.naturalengland.org.uk">www.naturalengland.org.uk</a>	Natural England
<a href="http://www.thedeerinitiative.co.uk">www.thedeerinitiative.co.uk</a>	The Deer Initiative

## 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 ...
<b>Independent enquirers</b>	Exploring issues around the control of deer in the UK
<b>Reflective learners</b>	Setting goals in the research of deer
<b>Effective participators</b>	Discussing issues around the control of deer in the UK.

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 ...
<b>Creative thinkers</b>	Questioning own and others' assumptions over the control of deer in the UK
<b>Team workers</b>	Working with others in the research of deer
<b>Self-managers</b>	Organising time and managing risks.

## ● Functional Skills – Level 2

Skill	When learners are ...
<b>ICT – Use ICT systems</b>	
Select, interact with and use ICT systems independently for a complex task to meet a variety of needs	developing deer management plans designing an illustrated leaflet on deer species
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	
<b>ICT – Find and select information</b>	
Select and use a variety of sources of information independently for a complex task	researching legislation that affects deer management researching deer life cycles and habitat preferences
Access, search for, select and use ICT-based information and evaluate its fitness for purpose	
Select and use ICT to communicate and exchange information safely, responsibly and effectively including storage of messages and contact lists	
<b>English</b>	
Speaking and listening – make a range of contributions to discussions and make effective presentations in a wide range of contexts	presenting information on deer life cycles and habitat preferences discussing signs of deer presence
Reading – compare, select, read and understand texts and use them to gather information, ideas, arguments and opinions	reading information to inform their guidance booklet and management plans
Writing – write documents, including extended writing pieces, communicating information, ideas and opinions, effectively and persuasively	producing a guide on deer life cycles producing a deer management plan.