



BSc (Hons) Wildlife Conservation and Ecology

UCAS code	CD15
Institution code	H12
Duration	Three years, full-time
Start date	September 2027
Location	Harper Adams University campus

Biodiversity underpins a range of ecosystem services which support our social and economic health and well-being, yet the World is facing global crises of biodiversity loss and environmental degradation.

If you have a passion for wildlife conservation and want to make a difference to the quality of the environment we leave for future generations both in the UK and internationally this is the course for you. The programme is founded on the study of ecological science: the interactions between species, their physical environment and humans; and its application to the conservation and management of wildlife. Key aspects focus on the ecology of protected species, animal behaviour, practical habitat management, ecological assessment of planning projects, and managing the ecological impacts of population growth, food production, land management and the climate crisis. Students will also develop professional skills in species identification, field survey techniques, data management, and project management. These topics will be underpinned by a sound knowledge of how key international and national legislation applies to practical conservation of species and habitats at home and abroad.

Each year of the programme includes fieldwork and there is a residential field course in every year. There are international field courses in the second and final year. The final year course is currently in South Africa, while the L5 course will be in Europe. These residential field courses are supplemented by a wide range of field trips to local sites to contextualise material introduced in lectures and seminars. The programme has a strong applied focus using standard industry techniques underpinned by science.

Industry best practice has been driven by technological advances in remote sensing, eDNA, Unmanned Aerial Vehicles and GIS. The application of these technologies is embedded in the course to promote the conservation of wildlife.

The university is situated in a rural location with easy access to the countryside of Cheshire and Shropshire, including the Meres and Mosses and the Shropshire Hills Area of Outstanding Natural Beauty (AONB). The university also has its own estate of 400ha including a range of agricultural and semi-natural habitats. The estate and local sites are used in the course for site visits and practical exercises.

This course is built on a long history of related courses, taught by staff with a wide range of academic and professional expertise.

A version of this course with a placement year is also available.

[View the placement year route](#)

[Find out more about placement years](#)

A-level entry requirements

- **Entry requirements for 2027 entry are not currently available. Please contact Admissions for advice**

How will I be taught?

The course comprises modules covering wildlife conservation and ecology themes along with cross-disciplinary subjects in fieldwork, personal development and project management. Each module is worth either 10 or 20 credits (although the final year research project is weighted at 40 credits) and each academic year of the course carries a weighting of 120 credits.

Each module has a web page on our Virtual Learning Environment. Here tutors upload material such as presentations, videos, and links to key sources for independent study. Material used in face-to-face teaching is uploaded in advance of classes, so that students can prepare and subsequently follow up to reinforce their understanding. Many modules also include practical work in the university laboratory, on the university farm, or at locations (e.g. nature reserves) nearby. Each year includes at least one residential field course.

The second year of the course builds on the themes introduced in the first year. There are two optional modules (students must select one) and also an elective module. For the elective, students can pick a specialist module delivered by the wildlife conservation team or any other elective modules offered across the university.

A key aspect of the final year is the individual research project where students get to investigate a topic of personal interest. This might involve the collection, analysis and interpretation of data from ecological field survey, or a questionnaire, to answer research questions which they have developed with support of their project supervisor. There are two pairs of optional modules, including a module focussing on forestry that builds on the second-year module on woodland management. Students select one optional module from each pair.

Careers

Graduates will find a diversity of employment opportunities within the fields of ecological management, wildlife conservation, sustainable development and land management, including acting as ecological consultants and ecologists working to mitigate the impacts on wildlife of infrastructure projects, food production and climate change. Alongside these roles are opportunities with relevant organisations in the public and private sector.

What will I study?

Year 1		Year 2		Year 3	
Fundamentals of the Physical Environment (R4014HF)	20	Research Methods and Geographical Information Systems (C5025HF)	20	Honours Research Dissertation (HF)	40
Contemporary Issues in Sustainability (R4015HF)	20	Population and Community Ecology (C5022HF)	20	Ecological Applications (HF)	20
Ecological Principles (R4016HF)	20	Wildlife Conservation Management (C5027HF)	20	Wildlife Conservation and Environmental Land Management (HF)	20
Introduction to Wildlife Conservation (R4017HF)	20	Practical Research Skills (C5023HF)	20	Integrative Project Management (HF)	20
Environmental Survey and Field Skills (R4018HF)	20	Professional Development for the Natural Scientist (C5024HF)	10	Options	
Skills for the Natural Scientist (R4019HF)	10	Elective (HF)	10	Advanced Geographical Information Systems (HF)	10
Communicating Science in a Digital World (R4020HF)	10	Optional Module (HF)	20	Contemporary Forestry (HF)	10
		Electives		Countryside and Environmental Projects (HF)	10
		Urban Ecology and Green Infrastructure (C5026HF)	10	International Field Course in Natural Resource Management (HF)	10
		Options			
		Behavioural Ecology and Wildlife Conservation (C5017HF)	20		
		Woodland Management (C5028HF)	20		

Fundamentals of the Physical Environment

Year of study 1
Code R4014HF
Credits 20
Core/option Core
Module contact [Dr Samuel Eze](#)

Sustainable environmental management is based on a sound understanding of the key components of the physical environment, their properties, interactions, and functions. This module provides the base understanding of the main components and processes within the biosphere where human activities have both direct and indirect impacts. It lays the foundation for environmental scientists and land managers and serves as the base upon which other environmental management modules at higher levels will be built. The module focuses primarily on soils, water, and atmospheric processes. There will be emphasis on the interactions between these different components of the environment. This will introduce the students to a systems-thinking approach, which is an important skill for an environmental scientist.

Contemporary Issues in Sustainability

Year of study 1
Code R4015HF
Credits 20
Core/option Core
Module contact [Dr Jonathan Cooper](#)

This module is designed to provide students with a wide understanding of the sustainability issues we face today. The main focus for this module will be the United Kingdom; however, there will be appropriate international comparison and contextualisation. This module will introduce students to the fundamentals of environmental, social and economic sustainability and will provide a broad introduction to the way in which the environment is managed by considering organisational interactions, land designations and policy making. This module will introduce students to a broad range of contemporary issues in order to give them a comprehensive understanding of sustainability today. By its nature, this module is designed to be flexible and responsive to ongoing developments in the field and it is intended that other 'contemporary issues' would be considered from time to time as new challenges arise. This module is mostly common to all course groups but with some variation between programmes to allow for course-specific interests to be developed.

Ecological Principles

Year of study 1
Code R4016HF
Credits 20
Core/option Core
Module contact [Dr Andrew Cherrill](#)

Ecology is a science which seeks to understand the processes that determine the distribution and abundance of species, and the dynamic changes in populations, communities and ecosystems in relation to biotic interactions and spatio-temporal variation in the physical environment. This requires knowledge of the essential processes that determine the survival, growth and reproduction of organisms, and the variety of complex biotic and abiotic interactions that take place. This module addresses these questions and is designed to provide students with an understanding of scientific methodology and the ecology of living systems. Key concepts and ecological theory are introduced to underpin learning in subsequent modules on ecology and wildlife conservation.

Introduction to Wildlife Conservation

Year of study 1
Code R4017HF
Credits 20
Core/option Core
Module contact [Dr Andrew Cherrill](#)

This module will introduce the key threats to wildlife and the main approaches which have been developed to manage the conservation of species, habitats and sites. The impact of man on wildlife populations will be explored, including the effects of land use change (e.g. agricultural intensification, land abandonment and urbanisation), exploitation, non-native introductions, pollution and climate change. Methods for monitoring, wildlife conservation and sustainable management of wildlife resources will be introduced. Contrasting rationales, and policy drivers, for wildlife conservation will be explored, alongside a review of the historical development of conservation as a branch of ecological science.

Environmental Survey and Field Skills

Year of study 1
Code R4018HF
Credits 20
Core/option Core
Module contact [Dr Andrew Cherrill](#)

This module provides an essential understanding of the main components of designing, carrying out and interpreting results from a range of field survey and monitoring approaches suitable for habitats, animals, plant species and the wider environment. It provides practical field experience across a representative range of species, habitats, landscapes and environments including carrying out risk assessments, selecting the most appropriate methodology, and understanding the strengths and weaknesses of different methods. These skills provide an essential underpinning for practical work in other L4 modules and subsequent years, and also reinforce learning in the L4 Skills for the Natural Scientist and Communicating Science in a Digital World modules through the application of simple data manipulation, analysis and interpretation techniques using appropriate software (e.g. Excel). Statistical methodology introduced in the module will focus on techniques to ensure that sample sizes are adequate to provide reliable estimates of abiotic and biotic parameters, such as soil pH, species richness and species population sizes. The advantages and applications of innovative technology such as eDNA and UAV will also be explored. The module will include two residential field courses. The first will be a short experience of 2-3 days early in the first semester (Period 1), while the second will be up to a week's duration towards the end of semester 2 (Period 5). These residential experiences will provide important opportunities for group work, personal development, experiential learning, and for students to design and carry out their own small-scale research projects.

Skills for the Natural Scientist

Year of study 1
Code R4019HF
Credits 10
Core/option Core

This module will give students the key generic skills that will underpin success in their programme and in subsequent careers. Themes include effective writing of reports and other documents, searching for and evaluating sources of information, manipulation, analysis and presentation of data, online communication, and giving oral presentations. The efficient use of business application software is central to these skills. This module provides a foundation for presenting information in word-processed documents; creating and deriving new information from spreadsheets; and integrating information for presentation using a relevant package. The module also builds an awareness of online etiquette with the production of documents and the use of online networking sites to promote the individual e.g. a curriculum vitae. The learning from this module is embedded across all other modules to demonstrate relevance and application.

Communicating Science in a Digital World

Year of study 1
Code R4020HF
Credits 10
Core/option Core
Module contact [Dr Lucy Crockford](#)

Continuing Professional Development is an important element of versatile and vocational-focused higher education. The core of this module: the ability to communicate science to diverse audiences through various media. Students will explore this key part of the professional working world, accessing a wide range of digital skills that build on the previous skills module and identifying personal goals for reaching individual career employability. Students will also make a strong link between activities in this module and others and the expectations of an accrediting body's practical competencies. This will provide the student with a strong foundation for continuing to record and explore their professional development throughout their degree.

Research Methods and Geographical Information Systems

Year of study 2
Code C5025HF
Credits 20
Core/option Core
Module contact [Dr Andrew Cherrill](#)

This module develops the knowledge and skills necessary to successfully complete the major project in the final year. Enhanced research confidence will also be an employability skill for the placement period and careers on graduation. A consideration of the ethics related to research will also ensure that appropriate and sustainable methods are selected. The module will cover the key elements of the research process, set in the context of the student's own course discipline. Students will examine the academic role of research and how it informs professional and managerial practice. They will enhance their ability to locate, select and critically evaluate information associated with a particular problem, using a range of sources and particularly peer-reviewed empirical studies. By carrying out spatial and non-spatial statistical analysis, using appropriate software, the students will develop their IT skills and further their understanding of the role of statistics in the research process. Analysis of spatial data will build upon skills in Geographical Information Systems (GIS) developed at Level 4. This module will enhance students' specialist IT skills and will focus specifically on the application of statistics for research purposes and the use of GIS for spatial analysis.

Urban Ecology and Green Infrastructure

Year of study 2
Code C5026HF
Credits 10
Core/option Core
Module contact [Dr Andrew Cherrill](#)

The growth of cities and towns has been a feature of the last century. By 2030 it is predicted that 60% of the World's population will live in cities with 28% living in cities with over 1 million inhabitants. In the UK, over 80% of the population currently live in urban areas. Cities and towns have a significant ecological footprint on the surrounding land that provides key resources of food, fuel and water. Urban areas have greatly modified environments and communities of plants and animals. To develop inhabitable sustainable cities, there is a need to understand the ecology of these communities and how they interact with the human inhabitants. This module explores urban ecology from a number of perspectives, namely urban and landscape design, the impacts of contact with urban nature on human health and wellbeing, and the conservation and management of biodiversity.

Population and Community Ecology

Year of study 2
Code C5022HF
Credits 20
Core/option Core
Module contact [Dr Andrew Cherrill](#)

This module is designed to develop a knowledge of ecological science, with a focus on population and community ecology, and the practical skills required to engage in field and laboratory studies of these fundamental entities. Population ecologists study the ecology of single-species populations and the interactions between individuals within the population and with the abiotic environment. Key questions are the relative importance of abiotic factors and within-population processes in determining species distributions and abundance in time and space. The interaction of biotic and abiotic factors in the evolution of species' life cycles, life history strategies and animal behaviour will also be investigated, including dispersal, migration and mating behaviour. Applied aspects will include the dynamics of single-species meta-populations in fragmented landscapes and the implications for landscape scale ecological

assessment and management. Community ecologists expand these investigations to include the ecological patterns and dynamics of assemblages of populations of two or more species co-occurring. Key problems are elucidating 'community assembly rules', regional and global patterns of biodiversity, the extent to which mechanisms of mutualism, coexistence of competing species and predators and prey underpin these large-scale patterns, and the relationship between biodiversity and stability of ecosystem function. Applied aspects include the extent to which resilience in the provision of Ecosystem Service is reliant on the conservation of biodiversity. Models of speciation through which new diversity originates will form a third strand of investigation with the model. Throughout, reference is made to plant and animal examples, and key plant-animal interactions such as pollination.

Wildlife Conservation Management

Year of study 2
Code C5027HF
Credits 20
Core/option Core
Module contact [Dr Andrew Cherrill](#)

This module will focus on the application of conservation science to address pressing problems facing biodiversity in the UK and internationally. Key topics include how the impacts of food production, climate change and land use change are being managed to minimise environmental impacts – and where possible to achieve net gains in biodiversity. Impacts of forestry and agricultural intensification and extensification will be reviewed, alongside approaches to integrating food production and protection of biodiversity and the wider environment. The role of agri-environment schemes, and the potential value of agro-ecological techniques, will be explored. Relevant legislation related to land use change arising from forestry, agriculture and infrastructure projects, such as housing, will be discussed. Finally, there will be a focus on conservation management techniques applied to key wildlife habitats, such as woodland, heathland, and species rich grasslands. An understanding of the ecological impacts of climate change, and methods of adaptation, will be integrated throughout the module, for example, investigating how the management of landscapes can be adapted to permit species dispersal across fragmented habitats.

Practical Research Skills

Year of study 2
Code C5023HF
Credits 20
Core/option Core
Module contact [Dr Lucy Crockford](#)

Continuing professional development is supported by activities in this module. Following on from the grounding of field skills at level 4, this module furthers students' experiences in industry-relevant training to support wider modules studied at level 5. Students will take part in frequent contact sessions which will support activities to be completed on an international residential field course in Europe. The field course will allow a group project to be completed to further student collaborative working and team experience.

Professional Development for the Natural Scientist

Year of study 2
Code C5024HF
Credits 10
Core/option Core

This module allows students to demonstrate commitment to life-long learning by embedding the skills and habits of reflection, personal development planning and mapping development to accrediting body competencies. Through the journey of preparation for the workplace students will be supported by an online programme of material and activities to aid in self-assessment of core skill needs; development of chosen core skills; updating a personal development plan and recording reflection on progress and the process. Building on software applications knowledge and online networking skills gained in the first year students will produce professionally formatted documents. A templated Online Learning Experience

Platform e.g. PebblePad will enable students to collate a broad range of activities into one place recording and evidencing development.

Elective

Year of study 2
Code HF
Credits 10
Core/option Core

One elective module (as below or or a module from the University Catalogue of Electives)

Optional Module

Year of study 2
Code HF
Credits 20
Core/option Core

Choose one optional module

Behavioural Ecology and Wildlife Conservation

Year of study 2
Code C5017HF
Credits 20
Core/option Option

This module will explore the relationship between ecology, behaviour and conservation. It will focus on pressures on global habitats and how these drive adaptation and behavioural change in wildlife. There will be consideration of the effects of in situ and ex-situ conservation management strategies on the behaviour of wildlife.

Woodland Management

Year of study 2
Code C5028HF
Credits 20
Core/option Option
Module contact [Mr Nick Covarr](#)

Forests and woodlands represent a significant use of land in the UK, second only in physical land use extent to agriculture. They can be managed effectively to provide important economic, environmental and social benefits to owners and the wider population. Resilient, well-managed forests offer a range of services to their owners and to wider society, many of which are relevant to timber and wood production but also to more diverse potential benefits in terms of carbon sequestration, biodiversity, soils and water, landscape, recreation, social and sporting uses.

Woodland Management is an applied module focussing on the practicalities of how we create and manage woodlands and forests in the UK. Planting trees and better managing those we have is a key part of the government's Net Zero Strategy, Environment Plan and Energy Strategy. Careers in woodland management and woodland creation are flourishing as a result. This module will introduce students to the wide range of UK forest industries whilst providing the skills and insights needed to consider woodland management and forestry placement opportunities.

Honours Research Dissertation

Year of study 3
Code HF
Credits 40
Core/option Core
Module contact [Professor Andy Wilcox](#)

The Honours Research Project Plus allows students to consolidate and utilise learning from their taught modules in the design, implementation and reporting of an original research project in an aspect of their degree subject area that is of interest to them, appropriate to their area of study, and that will be of use to them in their learning and career development. The student will select a topic area and will, in conjunction with a supervisor, design, carry out, analyse, and present their research. This module develops a student's research skills and puts them at the centre of their own learning and development. Within this module, the student will undertake research study design, but also will evaluate the ethical and health and safety aspects of their project, and will design knowledge transfer for the dissemination of their research proposal and findings.

An honours degree involves the development of a learner to the point where they become an independent researcher, and as such, Honours Research Project Plus is the 'jewel in the crown' of an Honours Degree. The skills, resilience and independence developed during this module will be directly applicable to skills that a student will utilise, both in their career and in any further study they undertake.

Ecological Applications

Year of study 3
Code HF
Credits 20
Core/option Core
Module contact [Dr Andrew Cherrill](#)

This module builds on the ecology and wildlife conservation knowledge gained from previous years and provides students with the tools to apply the scientific underpinning to real-world applications. The focus is the assessment and mitigation of environmental impacts arising from changes in land use associated with infrastructure, forestry and agricultural projects which require planning consent from either Local Planning Authorities or Statutory Agencies. The module will provide students with an understanding of the roles and responsibilities of stakeholders involved in ecological assessment and decision-making. It will also enable them to evaluate and communicate the importance of ecological theory, different tools and resources, and of regulatory constraints for ecological assessment and for decision-making.

Wildlife Conservation and Environmental Land Management

Year of study 3
Code HF
Credits 20
Core/option Core
Module contact [Dr Andrew Cherrill](#)

Land use, and land use change, are frequently the determinants of ecology at scales ranging from the local to regional. How land is managed is critical to the conservation of wildlife, but also in terms of delivering other outcomes valued by society, e.g. One Health and improved wellbeing. Land delivers a range of ecosystem services. Trade-offs between different ecosystem services (e.g. agricultural production and water quality) are becoming increasingly evident. Critical issues facing the world today include how to maintain multiple ecosystem services from land, including the protection of the biodiversity which often underpins these services. This module focuses on the understanding of the step change required through ecological adaptation and carbon sequestration to promote climate change mitigation and critical evaluation of the often-complex evidence-base. Themes which form the focus of the module are agriculture, agroecology and agroforestry, and the management of land in response to predicted climate change scenarios nationally and globally.

Integrative Project Management

Year of study 3
Code HF
Credits 20
Core/option Core

The demand for wildlife, environmental and sustainability professionals is growing in almost all sectors of the economy. To meet this demand and help address the complex and evolving environmental challenges of this century, students need to be equipped with the relevant professional skills and competencies. This module provides the opportunity to apply the essential field skills gained at levels 4 and 5 and develop and execute projects to address a range of real environmental issues. There will be an emphasis on teamwork, project management strategies, professional behaviours, personal reflection, and field techniques used in the industry. This module will provide an essential understanding of the concepts of quality and standards in project design, implementation, and assessment as well as the final stages of project output dissemination.

The module will include a residential field course with a group project that will be designed to integrate skills and knowledge gained from modules across the programme, and also facilitate interactions and sharing of knowledge between students with differing interests and from different course areas.

Advanced Geographical Information Systems

Year of study 3
Code HF
Credits 10
Core/option Option
Module contact [Professor Andy Wilcox](#)

This module builds on GIS experience and knowledge that students will have gained at levels 4 & 5 and provides students with the essential tools to address complex spatial problems associated with land use. This module will provide students with the skills relating to spatial data capture, analysis and presentation and focus on the practical application of GIS to address issues in agriculture, forestry, environment and wildlife conservation. The module will also focus on digital cartography and the creation of web and app-based maps including story maps. The module will also introduce automation in GIS and facilitate students to develop GIS workflows and models to address geographical issues.

Contemporary Forestry

Year of study 3
Code HF
Credits 10
Core/option Option
Module contact [Mr Nick Covarr](#)

This module will focus on the latest forestry issues which appear regularly in the media and give you the depth and understanding of the science, debate and complexities you need to form your own opinions on UK forestry. The module will start with an introduction to the global and UK forest resources, examining how we quantify forest cover and change over time. It will then look at the trade in forest products and how both the management of forests and demand for forest products are interlinked with the conservation of forest biodiversity, carbon sequestration, rural economies, tourism and recreation and preservation of soil and water resources.

The module will enable a comprehensive and detailed understanding of sustainable forest management policy and practice in the UK and how it links to global strategies. It will also provide a current overview of global forestry issues and an appreciation of mainstream and innovative products and services sourced from forests and sustainable forest management worldwide. This is an adaptable module which will change from year to year but past content has included topics such as the use of wood as a low-carbon fuel, the integration of forests and farming and managing forest pests and diseases.

Students completing the module will be able to critically evaluate different approaches to forest

management in terms of the range and quality of products/services supplied and the economic, social and environmental implications of the management and conservation processes adopted.

Countryside and Environmental Projects

Year of study 3
Code HF
Credits 10
Core/option Option
Module contact [Simon Irvin](#)

Countryside and environmental management are complex and multi-disciplinary areas of practice. For both non-governmental organisations and government agencies, short-term projects are an important mechanism to achieve desired environmental changes. The implementation and success of these projects require sound understanding of the principles of project management.

This module aims to give students insight into the development and management of projects. This module will be delivered through action-based learning where students actively work on live projects for clients, developing proposals and delivering outputs. Students will gain insights into writing project proposals, competing in this bidding process, working with clients and implementing project proposals. They will be encouraged to develop as reflective practitioners in order that they can improve their skills for future practice.

International Field Course in Natural Resource Management

Year of study 3
Code HF
Credits 10
Core/option Option
Module contact [Professor Nicola Randall](#)

This module allows students to develop and apply their high-level skills and abilities in a new environment by undertaking a residential overseas field course. The field course will combine elements of wildlife conservation and resource management and will enable students to apply their prior learning in a real-world environment. This experiential learning will include practical activities and interactions, and will enhance student understanding of the complexities of real-world issues and develop their skills in both team working and independent thought.