

# MSc Invertebrate Ecology & Conservation



Incorporating the Postgraduate Certificate  
and Diploma in Invertebrate Ecology &  
Conservation

## Student Handbook 2011-12



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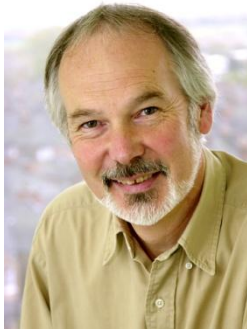
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# 1.0 Introduction

## 1.1 Welcome to Postgraduate Study at Staffordshire University

Welcome to postgraduate study in the Field of Biological Sciences within the Faculty of Sciences. This handbook contains information to assist you in your studies over the coming year or two. Our aim is to ensure that your transition to advanced level study is as smooth as possible and that you have a productive and enjoyable time with us.

Postgraduate study is challenging, fascinating and of great potential benefit to you. Enjoy your time with us, work hard, and good luck!



**Professor John Dover**  
**Award Leader**

## 1.2 A Brief Introduction to the postgraduate awards in Invertebrate Ecology and Conservation

Invertebrates make up about 99% of the global fauna, but have been largely ignored in conservation efforts and in ecological impact assessments of new developments. Over the last decade the plight of invertebrates has become better known and there is now more demand for consultants with expertise in both aquatic and terrestrial invertebrates (especially insects). Existing conservation organisations such as Butterfly Conservation (<http://www.butterfly-conservation.org/>) have grown in size and number of members, and new ones set-up, such as 'Buglife' (<http://www.buglife.org.uk/>) and Butterfly Conservation Europe ([www.bc-europe.org/category.asp?catid=14](http://www.bc-europe.org/category.asp?catid=14)). New academic journals have been developed to support the science base (such as the Journal of Insect Conservation and Insect Conservation and Diversity) and there are many books on the subject now available. Media interest has never been higher with television programmes and newspaper articles regularly featuring invertebrates. Marks &

Spencer supports Butterfly Conservation by funding the 'Big Butterfly Count' ([www.bigbutterflycount.org/](http://www.bigbutterflycount.org/)) and by giving a proportion of its profits on some products to the charity. But despite this there have been alarming reports of a decline in taxonomic expertise (the ability to identify invertebrates) and little opportunity to gain experience. We have developed this course, the first of its kind, to foster freshwater and terrestrial invertebrate conservation and provide the knowledge and skills base for a range of careers in conservation and consultancy or as pre-training for a research degree. With our 'negotiated learning' option module, you could even create your own module tailored to your personal interests.

The course is designed for:

- recent graduates in biological or environmental sciences who are keen on invertebrates and who hope to move into conservation-related careers
- staff in employment (e.g. conservation, consultancy, local authorities, land management) wishing to upgrade their professional qualifications
- individuals with voluntary or other experience relevant to the sector wishing to change direction or gain a qualification to advance their career

So, if you are interested in managing habitats for wildlife and conserving invertebrate biodiversity, then this course is for you. This course is applied: unlike ecology courses that are mostly about ecological theory this course is about the practical application of ecological knowledge for conservation. Many of the modules on the course are intensely practical: for example, employers are very keen that their staff have good identification (ID) skills: and we give you that. Rather than being taught all the time by academics, we bring people working as professional ecologists into the lecture theatre so you can learn from their experiences. We also get you out into the field carrying out surveys, learning field techniques, doing your research project. We show you how to use a Geographical Information System (GIS), help you get work experience. We even have a module where you can tailor the content to your own interests (our negotiated learning option module) – not an easy choice, but if you want to do a module on, for example, mollusc ecology or butterfly conservation the framework exists to do it.

The course is vocationally-oriented, blending ecological skills with generic and transferable skills. Assessment will be by coursework that is relevant to careers in this area, e.g. through the preparation of an electronic information portal, reports, GIS maps, nature reserve management plans, and identification tests.

## **Field skills**

In order to address the skills deficit in practical ecology that has been repeatedly identified by leading employers in the field, this course will incorporate fieldwork training, including a one-week summer field course.

## **Identification skills**

In addition there is a module dedicated to the development of skills in invertebrate identification. **There is no substitute for putting in the hours in order to develop your ID skills; you won't learn enough within the restricted time we can devote to this in class.** You are strongly advised to practise and improve your identification skills throughout the duration of your studies (and beyond), e.g. during field excursions or walks in the country. Keeping a written record of any new species which you encounter is a useful idea. Joining relevant societies/informal groups to gain more experience is also a very good idea (e.g. Staffordshire Invertebrate Group [http://www.staffs-ecology.org.uk/sig/index.php5?title=Main\\_Page](http://www.staffs-ecology.org.uk/sig/index.php5?title=Main_Page)).

## **Specialist lectures**

A variety of specialist lectures will be given by practising ecologists from government agencies, charities and consultancies, enhancing its vocational relevance. In addition, this should enable you to familiarise yourselves with different career paths and potential employers. Whilst not part of your course, on Tuesdays in semester 1 the module 'Professional Practice' sits in a 'free slot' in your timetable (1-2.45) and you are more than welcome to join students taking that course when external speakers are giving talks (when you join the course and gain access to our 'Blackboard' site you will find information on these talks in the 'Professional Practice' module handbook).

## **Research projects**

You will carry out a research project, unless you are exiting with a Postgraduate Certificate or Diploma. You will be encouraged to carry out your research project in conjunction with external agencies such as Natural England, the Environment Agency, the Staffordshire Wildlife Trust, Staffordshire Invertebrate Group, Butterfly Conservation, etc. If you are a part-time student in appropriate employment, it may be possible to carry out a project at your place of work.

## **Options**

Options help you tailor the course to your particular requirements. The course allows you to take one of four option modules: work experience with an external agency or

commercial organisation, a research placement with a member of staff, a module on the urban environment called 'Greening the Grey' aimed at increasing biodiversity and the ecosystem services it delivers in the built environment, or a negotiated learning module. This latter is designed to allow you, in close consultation with tutors, to develop the content of a module that mirrors your specific interests e.g. in butterfly ecology, grassland invertebrate conservation management, invertebrate conservation in the agri-environment, etc.

### **Ethics**

Ethics in ecology and conservation is important. We do not have a specific module called 'ethics' because it is embedded in all that we do. In the preparation for your research project there is a compulsory requirement to consider the ethical implications of your study even though, working with invertebrates, no ethical approval is needed. Of course we also work within context of nature conservation legislation which is, in itself, an ethical framework

### **Length of Course**

Most full-time Master's courses are advertised as being 12 months long, but ours is 15 months. We give you an extra 3 months because we recognise the reality of the seasonal nature of Ecology and we want to give you the best possible opportunity to demonstrate your abilities.

The course is roughly laid-out as follows (for full-time students):

- Most of our formal teaching is done in two Semesters: 12 weeks from the end of September finishing just before Christmas, and 12 weeks between mid-January to the end of April/early May.
- The field course sits outside the formal teaching period in early June.
- From June to the end of November you will be mainly carrying-out your research project, usually finishing data collection in August.
- From September to November you will mainly be analysing your data, consulting with your project supervisor, and writing-up. The project is handed-in at the end of November.

For 2-year part-time courses, the research project is carried-out in Year 2.

## 2.0 Aims and Learning Outcomes

### 2.1 Aims

- To provide focused and *vocationally relevant* advanced-level training that will enable you to critically evaluate and integrate complex theoretical, practical and ethical considerations to the conservation and management of wildlife.
- To develop a deep understanding of **Invertebrate Ecology & Conservation**, which embraces the challenging need to understand the ecology and conservation needs of the 99% of fauna that are not vertebrates.
- To foster the *generic and specialist practical* skills necessary to enable you to apply your training in future employment.
- To provide you with an intellectually demanding and stimulating course that will enable you to receive information critically, to assess and process it analytically, and to communicate it effectively
- To enable you to apply practical and research skills to original research.

### 2.2 Learning Outcomes

These describe the knowledge and skills you should be able to demonstrate on completion of the various awards.

**Postgraduate Certificate & Diploma:** The Certificate and Diploma are distinguished by the number of modules taken (4 in the Certificate, 8 in the Diploma). The Diploma would result in the first six programme outcomes having been achieved with the Certificate resulting in a subset, depending on the modules taken, but would include as a minimum Outcomes 1 and 2 (which cover the University Learning Outcomes of Knowledge & Understanding, Analysis, and Communication).

1. Demonstrate advanced-level knowledge and understanding of ecological concepts and evaluate their application to the management and conservation of Invertebrates and their habitats (Knowledge and Understanding, Analysis)
2. Communicate a range of ecological concepts and express your informed opinions clearly and concisely using appropriate media and styles to specialist and non-specialist audiences (Communication)
3. Demonstrate independent learning skills required to advance your knowledge and understanding of ecological concepts (Learning)

4. Demonstrate a range of practical and professional skills necessary to work as a ecologist (Reflection)
5. Demonstrate critical evaluation of current research and problems relating to invertebrate conservation that is informed by the forefront of conservation science (Analysis)
6. Evaluate complex ecological and conservation-related issues and make sound judgements in complex and unpredictable situations (Problem Solving)

**Masters:** The Master's degree is differentiated from the Postgraduate Certificate and Diploma by the research project and outcomes 7 to 10 reflect the nature of the Master's project and the intellectual progression that it brings.

7. Demonstrate originality in the application of ecological knowledge and approaches to problems related to the conservation of invertebrates (Application)
8. Demonstrate advanced and comprehensive understanding and critical evaluation of methodologies and approaches to your own ecological research (Analysis, Enquiry, Knowledge & Understanding)
9. Demonstrate the ability to present, analyse and interpret complex data appropriately (Problem Solving, Communication)
10. Demonstrate self-direction, initiative, originality and personal responsibility in undertaking an empirical research project (Reflection)

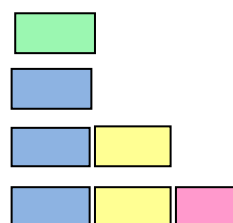
## 3.0 Award Structure

### 3.1 Overview

All award routes can be studied full-time (15months MSc) or part-time (normally 27 months years MSc). Individual programmes can be tailored for students wishing to do an award over a longer time scale (up to a maximum of 5 years for the MSc).

All awards are constructed with a prescribed core of modules. Modules are 15 credits in size apart from the 60-credit Masters Research Project. Students taking the Certificate can take three options, students taking the Diploma and the MSc can select only one option.

- Modules only ever available as options are green.
- Blue = compulsory modules for the Certificate
- Blue+Yellow are the compulsory modules for the Diploma
- Blue+Yellow+Pink = compulsory modules for the MSc



Module	Credits	PgCert 60 credits	PgDip 120 credits	Masters 180 credits
Invertebrate Conservation Management	15	C or O	C	C
Invertebrate Taxonomy and Specialist Identification	15	O or C	C	C
GIS for Ecology & Conservation	15	O	C	C
Field Course	15	O	C	C
Managing the Consequences of Climate Change	15	O	C	C
Managing Terrestrial Habitats	15	O	C	C
Managing Freshwater Habitats	15	O	C	C
Work Experience for Ecologists	15		O	O
Research Placement for Ecologists	15		O	O
Greening the Grey	15		O	O
Negotiated Learning Module	15		O	O
Research Project	60			C

C = Compulsory module; O = Option module (for the specific level)

Towards the end of this handbook you will find information on the various modules that make up the awards. In addition to the information contained here, you will be given module handbooks that give you more details at the start of each module. Also see the following sections 3.5 and 3.6 that provide preliminary details concerning the project and fieldcourse modules.

## 3.2 Award structure diagram

The diagram below shows the delivery pattern for full-time students. Part-time students on the 27-month route will normally take modules on a Tuesday in year 1 and Friday in Year 2. Part-time students taking longer than 27 months can be more flexible in the order that they take modules.

Level M (7)	TB1 (Autumn)											
	TB3 (Summer)	Field Course (15)										
	TB2 (Spring)	Managing the Consequences of Climate Change (15)	Managing Freshwater Habitats (15)	Managing Terrestrial Habitats (15)	GIS for Ecology & Conservation (15)							
	TB1 (Autumn)	Invertebrate Conservation Management (15)										
						Invertebrate Taxonomy and Specialist Identification (15)	Greening the Grey (15)	Work Experience for Ecologists (15)	Research Placement for Ecologists (15)	Negotiated Learning Module (15 – over one TB)		Research Project (60)

The delivery pattern does not necessarily reflect class contact time, for example all the teaching for GIS for Ecology & Conservation is carried out in Teaching Block 1 (TB1), but the assessment is due in during TB2. The term TB is synonymous with 'semester'.

### 3.3 Timetable information for September 2011 start

SEMESTER 1						
	9-10.45am	11-12.45am	1-2.45pm	3-4.45pm	5.15-7pm	
<b>Monday</b>	FLEXIBLE					
<b>Tuesday</b>		SCS80752-7 <b>Invertebrate Conservation Management</b> (weeks 1-12)	Optional: sit-in on presentations by guest lecturers to 'Professional Practice'	SCS80742-7 <b>GIS for Ecology &amp; Conservation</b> (weeks 1-12)	<b>Tutorials (Weeks 1-6)</b>	
<b>Wednesday</b>	FLEXIBLE					
<b>Thursday</b>	FLEXIBLE					
<b>Friday</b>			SCS80753-7 <b>Invertebrate Taxonomy</b> (weeks 1-6)	<b>Tutorials (weeks 1-12)</b>	<b>Invert. Tax. Keys</b> (weeks 1-6)	<b>Invert. Tax. Guest Lecture</b> (weeks 1-6)
			SCS80754-7 <b>Research Project</b> (Project Planning) (weeks 7-12)		SCS80750-7 <b>Greening the Grey</b> (weeks 7-12)	

Also, depending on options taken and agreed timing:

1. **Work Experience**
2. **Research Placement**
3. **Negotiated Learning Module**

SEMESTER 2							
9-10.45am		11-12.45am		1-2.45pm	3-4.45pm	5.15-7pm	
<b>Monday</b>	FLEXIBLE						
<b>Tuesday</b>			SCS80745-7 <b>Managing the Consequences of Climate Change</b> (weeks 1-12)	SCS80747-7 <b>Freshwater Habitat Management</b> (weeks 1-12)			
<b>Wednesday</b>	FLEXIBLE						
<b>Thursday</b>	FLEXIBLE						
<b>Friday</b>			SCS80754-7 <b>Research Project</b> (Project Planning) (weeks 1-6)	SCS80746-7 <b>Managing Terrestrial Habitats</b> (weeks 1-12)	SCS80750-7 <b>Greening the Grey</b> (weeks 1-6)		
			SCS80753-7 <b>Invertebrate Taxonomy</b> (weeks 7-12)		Invert. Tax. Keys (weeks 7-12)	Invert. Tax. Guest Lecture (weeks 7-12)	

Also, depending on options taken and agreed timing:

1. **Work Experience**
2. **Research Placement**
3. **Negotiated Learning Module**

## **SEMESTER 3**

1. **Residential Field-course** provisional dates 8-15<sup>th</sup> June 2012; Location: Slapton Ley, Devon see: <http://www.field-studies-council.org/slaptonley/>
2. **Research Project** (Deadline 30<sup>th</sup> November 2012)

Also, depending on options taken and agreed timing

3. **Work Experience**
4. **Research Placement**
5. **Negotiated Learning Module**

### 3.4 STUDENT CALENDAR 2011/2012

**Week beginning:**

19 <sup>th</sup> September 2011	Induction week – course induction Tuesday 20 <sup>th</sup> Sept
26 <sup>th</sup> September 2011	Teaching Block 1(12 weeks)
19 <sup>th</sup> December 2011	Christmas vacation - 3 weeks
9 <sup>th</sup> January 2012	Assessment/Independent study week
16 <sup>th</sup> January 2012	Teaching Block 2 (10 weeks)
26 <sup>th</sup> March 2012	No teaching this week
2 <sup>nd</sup> April 2012	Easter vacation - 2 weeks
16 <sup>th</sup> April 2012	Teaching Block 2 (continued – 2 weeks)
30 <sup>th</sup> May 2012	“Teaching Block 3 starts”
8 <sup>th</sup> -15 <sup>th</sup> June 2012	Fieldcourse
30 <sup>th</sup> November 2012	Project Submission (full-time students)
January 2013	Award Board

## **3.5 Masters Research Project**

### **Introduction**

The only real difference between the Postgraduate Diploma and the full MSc is the presence of the Masters Project in the latter. For MSc students the project is by far the most significant single piece of work within the study programme. This is reflected in its status as a 60 credit module (out of a total of 180), compared to all other modules, which are worth 15 credits each. Obviously the project is perceived by course staff as a highly important part of a Masters programme and in many ways it is a major undertaking. Having said that, it is also a piece of work that allows you to investigate, in depth, a topic of your own interest, and doing the project should be a very rewarding as well as challenging experience

### **Operation of the project**

There is a designated Project Co-ordinator who will oversee the administration of projects and will act as a first point of contact for students (Dr Kevin Reiling). You will also be carrying out Research Skills Development which is the 'taught' part of the module, which is linked in with your own project development and requires the preparation of a project research proposal.

Although potential project topics will be identified by both the Project Co-ordinator and Project Advisors, you are very much encouraged to come up with your own. The viability of your ideas will be assessed by your Project Advisor. Further, you will be encouraged to carry out your project in conjunction with an external agency, such as an ecological consultancy, government agency (e.g. Natural England, Environment Agency, Forest Enterprise) or wildlife charity (e.g. Butterfly Conservation, Buglife, The Wildlife Trusts). The agency concerned may help with ideas generation, or the practical application of ideas. In addition they may contribute at least some day-to-day project supervision. In return they will expect a copy of the final project report, and in this way the project will operate via a partnership approach.

It may also be possible (e.g. for part-time students), following negotiation with the appropriate staff, for you to carry out the project at your place of work. In this case the day-to-day supervisory input may come from your line manager, although a clear line of communication must obviously be established between that person and your assigned Project Advisor.

Preceding commencement of your project a number of "taught" sessions will explore the underpinning research practitioner skills needed to successfully design and

implement an M-level research project within a science based discipline.

The following themes will underpin the “taught” sessions:

- Scientific questioning, hypothesis framing and experimental design within an appropriate ethical framework and with appropriate Health and Safety considerations.
- Techniques for information gathering, evaluation and use.
- Numerical data handling and analysis including selection of appropriate statistical treatments.
- Scientific writing and the presentation of data in appropriate formats.

A number of elements have been planned which will provide you with feedback on your progress, these will not be marked but are important:

- You will produce a project plan including a brief project rationale and detailing all aspects of the project design, methodology and timescale and will include all appropriate ethical and risk assessment considerations.
- You will give a presentation in September following your research project fieldwork to staff and new students and you will be given constructive feedback
- Your Project Advisor will provide formative feedback via tutorial discussions and submission of sections of the dissertation prior to final submission.

It is imperative that you maintain regular contact with your allocated project advisor during all stages of the planning and execution of your research.

## **Assessment**

The project deadline for this year will be Friday 30 <sup>th</sup> November 2012
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A Project report should normally be no longer than 10,000 words, and will be written up in the format of an international peer-reviewed journal agreed between yourself and your Project Advisor. It should seek to place the practical work in the context of contemporary research, as revealed by the literature, as well as describing the methods used, the scientific rationale of the work undertaken, and a detailed explanation and interpretation of the results. The project report should also contain an appendix which reflects on the project. Two copies must be submitted, according to the guidelines for presentation required by the University Research Degrees Committee for MPhil degrees. See Section 10 of the Research Degrees Regulations:

Criteria upon which the project will be assessed include:

- Clarity and precision of the identification of the problem to be addressed.
- Quality of the literature review pertaining to the topic of experimental interest.
- Relevance and appropriateness of the empirical approach to the identified problem.
- Appropriateness of data analysis employed.
- Intellectual coherence to both experimental or survey design and data interpretation.
- Quality and originality of the work undertaken.
- Quality of the presentation of the final report.

All projects will be double marked, by your Project Advisor and one other member of the course team. These two individuals then meet, discuss the project and decide on a mutually-agreed mark. If they cannot agree in this way, then a third party will be asked to input. All Masters projects will be seen by the External Examiner.

### 3.6 The Field Course

The MSc, Postgraduate Diploma and, optionally, the Postgraduate Certificate in Invertebrate Ecology and Conservation includes a residential field course. This intensive, one week fieldcourse has been *provisionally* scheduled for 8<sup>th</sup> -15<sup>th</sup> June 2012. **Please check with the module co-ordinator – Prof. John Dover - before you book any holidays from mid-May to mid-June.**

The residential field course gives you the opportunity to improve your plant and animal identification and survey skills by contributing to a long-term research project in a rural location. The field course is held after all other formal classes are completed and is used in an integrative sense: to pull together many of the differing strands of the taught work. In addition to identification and survey, the theme of human influence on the landscape will be discussed as will attempts to soften the impact of agriculture through agri-environment programmes.

A **contribution towards costs**, probably in the order of £350 - £400, will be required per student. It is difficult to be precise as the cost of accommodation, food, and transport, can vary considerably. This cost excludes travel to the field course base (you make your own arrangements to travel to the field site). Part-time students can attend the fieldcourse during the first or second year of their studies, though going in

the first year provides a better opportunity to get to know fellow students and staff members, aids group cohesion, and helps with ID skills.

Further information on the residential fieldcourse will be provided in Semester 2.

### **3.7 Practical Experience**

Working in land management and conservation increasingly requires some degree of practical know-how. Employers, particularly in areas of nature reserve management, are keen to see demonstrable experience of practical conservation. You can gain practical experience relevant to your future career by taking one of the two option modules available:

#### **Work Experience Module:**

This module is designed to give you work experience within your chosen speciality with an ecological service provider of your choice.

The scope of the module in terms of the nature of the work and organisation is intentionally wide, but must fit within the general ethos of your course and be of a level suitable for a masters-level student.

Examples of suitable employers could be Consultancies, Wildlife Trusts, NGOs such as Buglife, Butterfly Conservation, People's Trust for Endangered Species, Chester Zoo; QUANGOs such as Natural England, Scottish Natural Heritage, the Countryside Council for Wales, Centre for Ecology & Hydrology; Local Government Countryside Services/Planning Departments and Central Government Ministries such as Defra. Employment need not be within the UK provided the employment is appropriate and Health & Safety issues have been addressed.

Different patterns of work experience will be acceptable e.g. a 3-week block or 1-day/week for 15 weeks. Students will, with support from the module tutor, select and organise their own work experience including ensuring that all appropriate documentation (e.g. Health & Safety) is completed. Assessment for the module will be directly related to the business of the work experience provider, but will consist principally of an academic report together with a reflection on the work experience itself. For example, 'an appraisal of the effectiveness of species translocations' would be an appropriate subject for the academic report if working for an environmental consultancy or Natural England. The exact subject and title of the assessment will be agreed between the student and module tutor with input from the work experience provider. Part-time students in-post may be able to use their current employment as work experience provided approval is granted by the module tutor.

## Research Placement Module

This module will allow you to experience cutting-edge research by working as a research assistant directly under the supervision of a University member of staff. The subject matter will vary depending on the exact discipline area of the staff member, but could include laboratory or field research or a combination of the two. Students will typically collect data as part of the supervisor's research project, input data to spreadsheet/statistical software, carry out analyses and write up the results. The module is self-contained, but will provide vocational experience which will support the student's future career in research. The delivery period will be flexible, and dependent on the nature of the supervisor's research interests. In exceptional cases the placement may be carried out under the supervision of a researcher at another institution provided the module tutor gives approval.

## 3.8 Societies

Societies can be an enjoyable and useful way of gaining practical experience e.g. with the **British Trust for Conservation Volunteers** (BTCV) for down-to-earth practical conservation management or survey work with one of the wildlife charities such as the **Staffordshire Wildlife Trust**, Local Authority Volunteer Ranger Service, **Butterfly Conservation**, etc. . Your course tutor will be happy to advise on suitable societies, and how you can improve your CV with voluntary and work experience, some examples of Societies are given below:

Membership of the **Institute of Ecology and Environmental Management** (IEEM) (<http://www.ieem.org.uk/>) is strongly encouraged as this is becoming a requirement for many jobs in the Ecology and Conservation sector, especially consultancy. You can join as a student member for £20 and on leaving the course you should upgrade to Graduate membership (£50). Embedded in the IEEM code of Professional Conduct is a requirement to complete 20 hours of Continuing Professional Development (CPD), and IEEM run an extensive, and very valuable, suite of workshops ([www.ieem.net/workshops.asp](http://www.ieem.net/workshops.asp)) and conferences ([www.ieem.net/conferences.asp](http://www.ieem.net/conferences.asp)).

Whilst the **Royal Entomological Society**, naturally, is concerned with insects, it may well be worth joining as it has a meetings and conference programme, special interest groups, and publishes high quality journals; there is also a student membership category which has a reduced subscription rate [www.royensoc.co.uk/](http://www.royensoc.co.uk/)

You might also consider joining the **British Ecological Society** (BES) (<http://www.britishecologicalsociety.org/>). You can join as a student for £20 which gives

meeting discounts to members; you can also apply for student attendance grants which helps with the cost of attending Conferences and Specialist Group meetings ([www.britishecologicalsociety.org/grants/meetings/](http://www.britishecologicalsociety.org/grants/meetings/)). Members also get generous discounts on publications including journals such as The Journal of Ecology, Journal of Animal Ecology, and Journal of Applied Ecology which cost £30 each per year.

Societies more specific to your interests might include:

**Buglife** [www.buglife.org.uk/](http://www.buglife.org.uk/);

**Butterfly Conservation** [www.butterfly-conservation.org/](http://www.butterfly-conservation.org/) which also has regional branches (for example the West Midlands Branch: <http://westmidlands-butterflies.org.uk/>),

**The British Dragonfly Society** [www.british-dragonflies.org.uk/](http://www.british-dragonflies.org.uk/)

**The British Arachnological Society**

[http://wiki.britishspiders.org.uk/index.php5?title=Main\\_Page](http://wiki.britishspiders.org.uk/index.php5?title=Main_Page),

**The British Conchological Society** (for Molluscs) [www.conchsoc.org/](http://www.conchsoc.org/)

**The Bees, Wasps & Ants Recording Society** [www.bwars.com/](http://www.bwars.com/)

**The Bumblebee Conservation Trust** [www.bwars.com/](http://www.bwars.com/);

**The Staffordshire Invertebrate Group (SIG)**

[www.staffs-ecology.org.uk/sig/index.php5?title=Main\\_Page](http://www.staffs-ecology.org.uk/sig/index.php5?title=Main_Page)

There are many more invertebrate societies, see the links page of Buglife [www.buglife.org.uk/AboutBuglife/links/invertsocsandconsorgs](http://www.buglife.org.uk/AboutBuglife/links/invertsocsandconsorgs)

## 4.0 Management of the Award

### 4.1 Award Management Team

This small team will be involved in the running of the Certificate, Diploma and Masters. In addition they will approve project titles and supervisory arrangements, including workplace-based projects.

The core team comprises:

- Prof John Dover
- Dr Paul Mitchell
- Dr Kevin Reiling
- Mr Graham Smith

Other staff within the Biology Subject area may also be interested in acting as your project advisor; early discussion with Prof. Dover, Dr Reiling or your personal tutor will ensure you find the right advisor for your project interests.

### 4.2 Award Board of Study

The Award Board of Study will meet twice per year.

This group consists of:

- Field Leader/Award Leader (Chair)
- Project Co-ordinator
- Two student representatives
- All staff teaching on modules

New students will be asked in the first few weeks of being here to nominate Representatives to this Board. The remit of the Board is a wide-ranging discussion about your learning experience. If you are a representative you should discuss your experience of your award with other students working in the subject so that you can fairly reflect their views and should let your colleagues know how they can contact you.

### 4.3 Assessment Board

Membership as with the Award Board of Study, with the *addition* of the external examiner and *minus* the student representatives.

The Assessment Board convenes formally once a year in January or early February. This timing is so that enough time elapses between the submission of the Research

Project for all marking to be done at the end of Semester 1, but avoids the long time-lag which would occur if we synchronised with the timing of undergraduate boards in June.

## **5.0 Learning experience**

You will encounter a wide range of learning experiences, including lectures, individual tutorials, group tutorials, seminars, practical workshops, field work, problem-based learning, and independent study (working on your own or as part of a team). The module descriptors at the end of this Handbook give details about the teaching and learning methods used in each module, together with the aims, learning outcomes and the assessments used to measure their attainment. Everyone has a different way of working and we are not here to impose any particular method; what we can do is expose you to a variety of ways of working and, of course, be there for guidance when requested. The acquisition of general and subject-specific skills is an important part of your training.

### **5.1 Nature of the postgraduate challenge**

#### **You take responsibility for your own learning**

At Masters level it is expected that you will have a substantial amount of control, and responsibility, for your own learning. Modules are designed with an estimated 'learning time' of 150 hours for a standard lecture-based 15-credit module, but in most cases you will have about 24 hours in class with a lecturer for such a module. This means that the remaining 126 hours of learning is in independent study (although some modules may involve an element of co-operative group work).

Some of the independent learning time will be tutor-directed; some of the time will involve organised meetings between you and your tutor to plan and review progress and to set tasks to be completed. In other modules you may meet with a tutor to organise and plan your time in order to meet agreed outcomes. Having said that, a substantial amount of the independent learning time will involve you taking responsibility for planning, organising, researching and carrying out your work, writing assignments, etc.

The research project at Masters level is the pinnacle of independent study where there is relatively little time spent face-to-face with a tutor; it is also the module that is worth most in terms of credits (a hefty 60-credits, equal to one-third of a Masters course).

All our modules are supported by a 'virtual learning environment' called 'Blackboard'. This is essentially a space hosted on the University network which is accessible through the internet. Each module has a 'slot' which will contain such information as the module handbook, the assignments, usually the lecture notes for each session, and some additional learning materials to help you in your independent study. We are moving towards electronic submission of assignment reports and, in some modules at least, you will be expected to upload your assignment rather than to hand-in a paper document – and you do this via 'Blackboard'.

### **Developing critical evaluation skills and a professional approach**

At Masters level, you will be expected to critically evaluate the relevance, scientific integrity and relative value of information, in order to appraise how usefully it contributes to the question asked. This probably represents the biggest challenge you will face, especially with the increasing number of information sources available on-line.

Also, as a vocationally-oriented course, we try to maximize workplace-relevance at all times and this includes our expectations of the quality and presentation of your work. For example, you will be asked to produce reports as if they had been produced by a consultancy company, with numbered sections, an executive summary, a high standard of presentation, etc. You will also have to consider health and safety issues, and produce full costings to show how you will keep to budget on your task.

## **3.0 Assessment**

### **6.1 How we teach**

The nature of Ecology and Conservation is such that it needs face-to-face delivery and practical experience. The course team of academics is supplemented by professional ecologists working in a range of jobs (e.g. for a Local Authority, a consultancy company or an environmental charity).

Our approach is to give you a varied learning experience, so some classes may consist of formal lectures, whilst others will be more in the form of workshops or tutorials where the lecturer and student group actively exchange information and debate issues. Not all teaching and learning happens within the confines of the classroom. In a vocationally-oriented group of courses, such as these, practical work may be carried out in a laboratory (for example learning to use identification keys), but is just as likely to be off-site in a local nature reserve, 'green space' or away from the area in a residential field course. One module combines extremes: 'GIS (Geographical Information Systems) for Ecology and Conservation' combines fieldwork with using computer mapping software in an IT suite.

## 6.2 How we assess

In the same way that the teaching is delivered in a variety of ways, we assess you in a variety of different ways. Each module has no more than two 'assessments' and in some cases there is only one. Whilst we do not have formal examinations in large sports halls, we do have some 'in-class' tests especially to assess identification skills. Whilst the majority of assessments are 'reports', their nature varies, depending on what is most appropriate for the module content. Examples include a

- Nature Reserve Management Plan
- 'briefing paper' on management options
- literature review
- field report in the style of a popular nature journal
- newspaper article
- scientific 'short communication'
- reflection on work experience

For those taking a Masters dissertation, there will also be a write-up in the format of a scientific paper.

Not all assessments are conventional written reports: one module has the production of an 'electronic information portal' such as a web-site as the assessment.

The assessments are designed to test whether you have achieved the desired learning outcomes for each module, be they evidence of understanding, skills development, or both. But, as well as providing marks on which to gauge your performance, all the assessments fulfil a 'formative' role: they are designed to help you learn and also provide valuable feedback on your progress and how it can be improved. In other words assessment and learning are intimately linked.

You will notice from the table below that the written work for a module varies in length. The 'base' level of written work for a module is of the order of 4000 words, and variation from this is deliberate and reflects the nature of the work. For example, the Management Plan in 'Managing Terrestrial Habitats' is 5,000 words, but producing a management plan to a professional standard means collating some information which involves very little in the way of additional intellectual effort – but needs to be there: hence the high wordage. The GIS report in 'GIS for Ecology & Conservation' is 'only' 2000 words, but that is because the production of the associated maps is technically difficult and the text whilst critically appraising the technology and its application also includes materials derived from the GIS. Some modules have both a written piece of work and a presentation or ID test e.g. Invertebrate Taxonomy and Specialist Identification. Managing the Consequences of Climate Change is assessed by creating an 'electronic information portal' and because of this has no set word limit.

Our approach has been to consider what is best for the material we want you to produce, with one eye on the nature of the work and another on the depth. Obviously this is a crude process, but how would you compare an identification test directly with a written assignment? We have used many of these assignments over more than a decade and students have successfully completed the work to a high standard (occasionally better than we have seen in professional reports). You will be made well aware of the requirements when you are given the assignment briefing (on paper as well as additional 'fleshing-out' as we talk you through it). Please do not hesitate to ask for further information on specific assignments from the module tutor if you feel you need it.

**FEEDBACK:** Our aim is to give you feedback within 20 'student' working days of the assignment due date (i.e. 4 weeks). These 20 days do not include normal holiday periods. So if you hand in an assignment on the last day of Semester 1 do not expect it back with feedback on the first day of Semester 2 – staff take holidays too! Dates for feedback will be published in each Module Handbook. It is your responsibility to collect from the module tutor your work with the feedback attached.

## IMPORTANT INFORMATION ON ASSESSMENTS:

### Attempting ALL Assessments

- It is important that you attempt ALL assessments for all your modules. The Faculty of Sciences does not allow any module to be passed or compensated if an assessment in that module has not been attempted. You should ensure that the appropriate coursework is submitted on time and required timed assessments (including exams, class-tests, presentations, vivas) are attended.
- The University has changed its regulations to minimise the number of students who do not complete modules. ***Now, your right to a second (referral) attempt at a failed assessment(s) will be conditional on whether you have or have not made a first attempt (unless a successful claim for extenuating circumstances has been made) at the assessment(s).*** The award board will have the discretion to NOT offer a referral for any assessments not attempted.
- What does that mean? It means that in most cases, unless a successful claim for extenuation is made, students who have not attempted assessments, at the discretion of the award board . . .
  - . . . may not be allowed a referral for the module,
  - . . . so fail the module
  - . . . and if a core module, fail the award!

### **Attempting all assessments is therefore ESSENTIAL.**

- DO NOT think it is better to ignore some modules and concentrate your efforts on other modules.
- This re-enforces the fact that it is always better to submit a half-finished assignment than not submit anything or attempt an examination you are not

confident about than not attend– you may gain sufficient marks to pass the module or at least allow the possibility for compensation between modules (if allowed by your award).

- If there are **extenuating circumstances** that prevent you from submitting / attending assessments then **ensure you gather evidence to support an extenuating claim**. Again, submitting a draft assignment by the required deadline is better than nothing and if the extenuation claim is successful a further assessment opportunity can always be offered.
- If you are unable to attend a timed-assessment then you should **inform the Faculty Office at the earliest opportunity** and then if appropriate make an extenuation claim.
- So there are 5 clear pieces of advice:
  - 1) Attempt all assessments
  - 2) It is better to submit something on time than nothing (DO NOT think 'it is better to submit the finished assignment late')
  - 3) It is better to attend a 'timed assessment' than not attend
  - 4) Let the Faculty Office know immediately if you do miss a timed assessment
  - 5) If extenuating circumstances apply get evidence and make a claim

## Pattern of Assessment

Module	Assessments	weighting
Invertebrate Taxonomy and Specialist Identification	<ul style="list-style-type: none"> <li>• 2h ID test of a specific taxonomic group</li> </ul>	25%
	<ul style="list-style-type: none"> <li>• 3000-word in-depth report on a chosen taxonomic group.</li> </ul>	75%
Invertebrate Conservation Management	<ul style="list-style-type: none"> <li>• A 1500-word briefing paper on the management options for conserving invertebrates in a named biotope</li> </ul>	40%
	<ul style="list-style-type: none"> <li>• A 200-word report identifying the ecological constraints/parameters that impact on the conservation of a named species or species group</li> </ul>	60%
GIS for Ecology & Conservation	<ul style="list-style-type: none"> <li>• A 2000-word report plus GIS maps and tables</li> </ul>	100%
Field Course	<ul style="list-style-type: none"> <li>• 3000-word report in the style and format of a popular journal (such as <i>British Wildlife</i>)</li> </ul>	100%
Managing the Consequences of Climate Change	<ul style="list-style-type: none"> <li>• Production of an "electronic information portal"</li> </ul>	100%
Managing Terrestrial Habitats	<ul style="list-style-type: none"> <li>• 5000 word Nature Reserve management plan</li> </ul>	100%
Managing Freshwater Habitats	<ul style="list-style-type: none"> <li>• 3000-word restoration/management report</li> </ul>	80%
	<ul style="list-style-type: none"> <li>• Class test. Interpretation of water quality data</li> </ul>	20%
Work Experience for Ecologists	<ul style="list-style-type: none"> <li>• 1,000 word critical reflection on the work experience</li> </ul>	20%
	<ul style="list-style-type: none"> <li>• 3000 word report on technical aspects of ecology as related to the business of the work experience provider</li> </ul>	80%
Research Placement for Ecologists	<ul style="list-style-type: none"> <li>• 1,000 word critical reflection on the research experience</li> </ul>	20%
	<ul style="list-style-type: none"> <li>• 3000 word project write-up, in the general format of a short communication/research paper</li> </ul>	80%
Greening the Grey	<ul style="list-style-type: none"> <li>• 3500-word literature review</li> </ul>	100%
Negotiated Learning Module	<ul style="list-style-type: none"> <li>• As negotiated</li> </ul>	100%
Research Project	<ul style="list-style-type: none"> <li>• A project plan including a brief project rationale and detailing all aspects of the project design, methodology and plan including appropriate ethics and risk assessment considerations.</li> </ul>	0% (must be submitted)
	<ul style="list-style-type: none"> <li>• 10,000 (max) word project dissertation written in the style of a research paper with a reflective appendix</li> </ul>	100%

### 6.3 Criterion referencing scheme

When marking assignments we use a criterion referencing scheme as a guide to the sorts of things we are looking for in an assignment of a particular standard. The criteria relate largely to written work; for other forms of assessment (e.g. oral presentations) the tutor will provide criteria.

Each set of criteria includes the qualities, but not the defects, of that preceding it.

<b>Criteria</b>	<b>Grade Point Awarded</b>
Shows all the qualities of a merit, but exhibits them to a <i>high degree</i> . Substantial evidence of <i>subject mastery, independent and critical thinking</i> . Conflicting arguments are <i>evaluated</i> and considered conclusions presented. Much evidence of <i>well-incorporated</i> background reading from the primary literature. Presentation and structure are of a very high quality.	<b>13 - 15 DISTINCTION</b>
Showing <i>breadth and depth of knowledge and understanding</i> . Well balanced, relevant and able to represent findings/arguments in a clear, coherent manner with supporting evidence where appropriate. Good synthesis and evaluation. Theory and practice well linked. Evidence of wide reading.	<b>10 - 12 MERIT</b>
Evidence of understanding of the fundamental concepts and able to represent findings/arguments in a coherent manner. Some background reading, although may not be well incorporated. References correctly cited. Evidence of critical thinking. Structure is appropriate, although there are some weaknesses.	<b>7 - 9 PASS</b>
Limited evidence of understanding of the fundamental concepts and/or of critical thinking. Limited in depth and scope. Contains irrelevant material and often merely descriptive. Inadequate justification and/or evidence used to support statements. Little evidence of background reading. References incorrectly cited.	<b>4 - 6 COMPENSATABLE FAIL</b>
Exhibiting the characteristics of a marginal fail but to a substantial degree (e.g. many of the aspects are lacking rather than limited). Major errors of fact and/or much confusion. Structure is inappropriate or lacking. Much necessary material omitted. Little or no evidence of understanding or critical thinking.	<b>0 - 3 FAIL</b>

## 6.4 Assessment Regulations

**Please read the booklet 'Academic Award Regulations: Postgraduate regulations'.**

This gives full information on the assessment regulations.

[http://www.staffs.ac.uk/images/postgrad\\_regs\\_tcm68-12690.pdf](http://www.staffs.ac.uk/images/postgrad_regs_tcm68-12690.pdf)

### 6.4.1 Accreditation of prior (experiential) learning - AP(E)L

#### ACCREDITATION OF PRIOR (EXPERIENTIAL) LEARNING - AP(E)L

It is possible, based on your previous experience and learning, to gain exemption from studying one or more modules on your award. APL usually means learning that has previously been certified (e.g. you may have completed an equivalent module on a previous award). APEL means crediting informal or uncertified learning, gained through work experience for example.

Although being exempt from studying one or more modules might sound appealing, please bear in mind that there is quite a lot of work involved in seeking AP(E)L, as *you have to show that you have met the learning outcomes and obtained the relevant skills for the module(s) for which you are seeking exemption*. Exempted modules are not counted when calculating your final degree classification.

You can only gain accreditation for full modules, and gaining accreditation for module(s) will not mean a reduction in tuition fees.

#### **Procedure for submitting a claim for AP(E)L:**

First of all, speak to your award leader who will explain in more detail what is required. If appropriate, your award leader will then write a supporting application on your behalf. You then have to submit an application and provide detailed documentary evidence in support of your application. You should also speak to the relevant module tutors to discuss the evidence required to support your claim.

*It is important that you submit your claim as soon as you can.* Your award leader will forward the completed form to the relevant committee for consideration. In reality this means speaking to your award leader within the first week of the Semester. If you are seeking exemption from Semester 2 modules, then you should still put forward your claim within the first four weeks of Semester 1.

Until exemption has been approved, you must continue your studies on the module(s) for which you are seeking exemption. If your claim is rejected you can

request a review of the decision, but only where you believe there to have been a material error or irregularity in the consideration of your claim. You must write to the Dean of Students and Academic Registrar within 7 working days of receipt of the letter of rejection. If you formally apply for AP(E)L you will be charged a non-returnable administrative fee.

Please also note that you cannot be exempted from the Research Project

#### **6.4.2 Submission of coursework**

Unless instructed otherwise, all coursework will normally be submitted to the Faculty Office on the ground floor of the Mellor Building. Deadlines will be published well in advance and ***failure to submit on time will result in no mark being awarded*** unless there are valid extenuating circumstances. Granting extensions is not permitted. Most work is marked anonymously, so you must complete an assignment receipt form when you hand in your work.

Marked assignments will usually be available for collection from the module tutor. This allows you to discuss the feedback if necessary. You will be informed about when the work can be collected.

#### **Extenuating Circumstances**

If you miss an exam or piece of assessed coursework, or if you feel your performance has been badly affected for reasons beyond your control then you should complete an extenuating circumstances claim form and submit it to the Faculty Office. **Don't** wait until the exam board to hand this in! Give it to the Faculty Office as soon as possible.

#### **Note that there are only three types of claim which you can make:**

- **'M', for 'mitigation'** which means that you were able to hand work in on time or sit an exam/class test, but its quality has been affected by your extenuating circumstances.
- **'L', for 'late'** which means that you are allowed an extra 10 working days (i.e. week days) to complete the assessment. If your claim is upheld and you submit your work within this time frame there is no mark penalty, but if you submit after the 10 days your work will be marked at zero.
- **'N', for 'non-submission'** which means that your circumstances were such that you were unable to submit the work at all at this assessment point.

You must claim either 'M' or 'L' or 'N' against EACH element of assessment for EACH module you want to include in your claim. Attention to this detail is very important if the Faculty's Extenuating Circumstances Panel (ECP) is to make the correct decisions in relation to your claim.

If you experience difficulty in completing the form or with the process, please ask for advice in the Faculty Office, Students' Union Advice Centre or from the Student Guidance Officer.

The bases of any successful claim for EC are that:

- the circumstances affecting your assessment were **unforeseeable or unpreventable**.
- you have provided evidence of these circumstances (e.g. a doctor's note, a statement from a student counsellor or practice nurse, a crime number and police contact, or, sometimes, a supporting statement from your personal tutor.)

Claims *likely* to be approved by the ECP include claims for sickness, personal or family issues (psychological, family illness or problems, relationship breakdown), university IT problems, work obligations for part-time students etc.).

Claims *unlikely* to be approved include claims based on holiday commitments, traffic problems, financial difficulties, ignorance of assessment deadlines, poor time management, problems with personal IT equipment, acute medical conditions outside the assessment period, failure to provide appropriate evidence, foreseeable or preventable problems, minor illness and poor IT practice (e.g. failure to 'back-up' work).

Always remember to submit your claim for extenuation by the due dates advertised on the Notice Boards. Retrospective claims will not normally be considered.

Sometimes claims for extenuation cannot be upheld simply because there is insufficient evidence, or because the form has been filled in incorrectly (all we have to go on is the evidence contained in the form). This wastes everybody's time.

#### **Some advice on filling in the form:**

- Speak to your personal tutor to make sure the form has been filled in correctly.
- Make sure all the dates you enter are accurate
- Carefully list all those assessment and modules for which are claiming
- Claims about computers wiping out your disc won't normally be upheld. *You are expected to make frequent back-up copies of your work.*
- More information is given on the University's 'Student Information' web pages.

- For more information see the UMF Regulations

For more detailed information, go to -

[http://www.staffs.ac.uk/images/extenuating\\_cir\\_tcm68-15855.pdf](http://www.staffs.ac.uk/images/extenuating_cir_tcm68-15855.pdf)

If the claim has been upheld, the Assessment Board will determine the appropriate course of action to be taken.

### 6.4.3 Plagiarism

Plagiarism is *copying someone else's thoughts or writings and passing it off as your own* (in other words it's a form of stealing). Not only is it **cheating**, but it is also unfair to those students who completed the assignment honestly, and will be severely penalised.

Please see the definitions of plagiarism in the University's 'Academic Award Regulations: Procedure for dealing with breaches of assessment regulations – academic dishonesty' available at:

[http://www.staffs.ac.uk/images/academic\\_dishonesty\\_tcm68-12681.pdf](http://www.staffs.ac.uk/images/academic_dishonesty_tcm68-12681.pdf)

You will note that when you submit coursework, you also sign to say that you have read and understood the University regulations on academic dishonesty – so make sure you have read them!

One obvious form of plagiarism is when you copy another student's piece of work. Another form of plagiarism (possibly the commonest) is copying or downloading large chunks, word-for-word, from a textbook, web site or article (or maps, diagrams etc. without acknowledging the source). **Remember, merely changing the odd word or making slight alterations to the order of words in the book/article you're using without acknowledging the source still constitutes plagiarism** as it's still copying someone else's ideas (if not the exact words) and passing them off as your own.

Even using "more than a *single phrase* from another person's work without the use of quotation marks *and* acknowledgement of the source" constitutes plagiarism as defined in the university regulations.

#### How can you avoid plagiarism?

One simple way is by making sure **you always cite in the text the sources of the information used to write your essays and reports**. And remember to use quotation marks if you're using the actual words of the original author. Even if you include a reference at the end of a sentence or paragraph, it still constitutes

plagiarism if you use the authors' exact words – unless you include them in quotation marks.

**NOTE:** avoid using too many or large quotations; it's a very lazy way of writing and it will not earn a good mark. You are supposed to distil the information into your own thoughts and words, rather than simply using someone else's words.

Visit any of the following websites, all of which go into more detail than is possible here. They give examples of what does and does not constitute plagiarism, some advice as to deciding what is and isn't an acceptable degree of paraphrasing, as well as some ways of avoiding plagiarism.

Staffordshire University Study Skills site

<http://www.staffs.ac.uk/uniservices/infoservices/library/find/references/index.php>

Plagiarism: What it is and how to recognise and avoid it

<http://www.indiana.edu/~wts/pamphlets/plagiarism.shtml>

OWL Online Writing Lab – Avoiding Plagiarism

[http://owl.english.purdue.edu/handouts/research/r\\_plagiar.html](http://owl.english.purdue.edu/handouts/research/r_plagiar.html)

### **Collusion**

This is where students collaborate on an assessment and submit the work as though it was their own individual work. Although we encourage you to discuss your work with others, the final submission must be your own work. This is usually fairly easy to spot. Sometimes the same errors might be included in both submissions, or graphs that look identical.

The lesson here is simple:

- never lend your work to another student. If you do so, then you **both** would be guilty of collusion if essentially the same work is submitted by both students
- even if you're working together as a team, you must make sure any work you submit has been written independently by you – unless a group assignment is specifically requested by the tutor.

### **Citing other people's work**

The system used within many areas of science is known as the 'Harvard system'. Each time you include information obtained from someone else's work then you

should just insert the name(s) of the author(s) and the publication date. There are two ways of doing this, which are best illustrated by using examples.

"In their study of transcriptional regulation of the WH12 gene in *S. cerevisiae*, Mountain & Sudbery (1990) found that..."

"Field voles may defecate more than a thousand times in a 24 hour period (Matthews, 1952)." Note that the full stop comes after the parentheses, not before.

Where there are more than two authors of a book or article then you may include the first author followed by *et al.* (a Latin abbreviation for 'and others' - note the full stop after the *al.*). For example: (Skingsley *et al.*, 2000). If you refer to more than one paper written by an author in the same year, then you would add a, b etc. For example: (Smith, 1990a, b).

As a general rule you should only cite references that you've actually read. Occasionally, however, this might not be possible to read the original article or book. For example, Kitāb al-Hayawān, the 'Book of Animals' written by the 9<sup>th</sup> century Arabic scholar al-Jāhiz is not widely available in English. In this case you would probably have to rely on the works of al-Jāhiz scholars such as Charles Pellat for things written by al-Jāhiz. In this case the in-text citation would then be (al-Jāhiz, undated; cited in Pellat 1967).

You don't normally need to cite authors for generally known information (DNA is the genetic material, green plants contain chlorophyll etc.).

### **The reference list**

All the authors cited in the text should be included in the reference list, and *vice versa*. The key thing here is that you provide enough information to enable the reader to track down the reference. The authors cited in the text should be listed alphabetically.

There are lots of subtle variations around, in terms of the order of the information and punctuation etc., but the key pieces of information for journal articles are: author(s), date of publication, title of article, title of journal, volume and page numbers.

For example:

Skingsley, D.R., White, A.J., & Weston, A. (2000). Analysis of pulmonate mucus by infrared spectroscopy. *Journal of Molluscan Studies*, 66: 363 - 371.

Note that:

- (i) in the reference list **all** the authors should be included (you only use *et al.* in the main body of the document e.g. Skingsley *et al.*(2000))

(ii) the journal title is italicised and capitalised

Sometimes the author is unknown, in which case you would list them in the text and reference list as 'Anon.'

The key pieces of information regarding books in the reference list are: author(s), date of publication, title of book, publishers, place of publication.

For example:

Mitchell, P. (2000). *Teach Yourself 101 Key Ideas: Ecology*. McGraw-Hill, Maidenhead.

Note again the italicised and capitalised book title. Usually (as here) the place of publication is also given.

If a book has gone through more than one edition then you should also say which edition you are referring to.

Sometimes you might have referred to a specific chapter in an edited book (i.e. one in which different chapters are written by different authors). Here you need to specify the authors, title and page numbers of the chapter as well as the editors and title of the book. A typical way of referencing this is as follows:

Dover, J.W., Butt, K.R. & Pearson, D. (1998). Nodes and linear sections of field boundaries: plant species richness, soil nutrients and boundary width. In: *Key Concepts in Landscape Ecology* (Eds J. Dover & R. Bunce), pp 347 - 350. IALE (UK), Preston.

For web-based sources, you should still include author(s) and date in the text. The information included in the reference list would be something like this:

Woodward, S.L. (1997). *Major Biomes of the World*. Virtual Geography Department Project & Dept. of Geography, Radford University, <http://www.runet.edu/~swoodwar/CLASSES/GEOG235/biomes/main.html>

Sometimes you may have obtained information from somebody telling you something orally or in a letter or email. In this case you would cite them in the text as follows (Darwin, pers. comm) - an abbreviation of personal communication. These are not included in the reference list of journal articles.

There is a detailed pdf handout on referencing on Prof Dover's website (and also on Blackboard):

<http://www.staffs.ac.uk/schools/sciences/biology/Acstaff/Jdover/teaching.htm>

## 7.0 Where to go for help and information

### 7.1 Who to see if you have problems

#### (a) Academic matters

If there is a problem with a particular module then we suggest you simply speak to one of the module tutors as soon as possible - don't let things drift. If you get no joy there then speak to the Award Leader. If none of these can help then we will try to find someone who can.

#### (b) Personal problems

You will each be allocated a member of the teaching team to act as a **Personal Tutor – as your course has relatively few students on it this will be Prof. Dover who is also the award leader**. If you have any problems with the course, or any personal or health problems that you feel are affecting your performance then this would be the person to see in the first instance. If you find that you feel more comfortable talking to someone other than your personal advisor then that's fine, we won't be offended. None of us are trained counsellors - these are available as part of the university's welfare service - and for some problems we may suggest that you seek guidance from professionally trained people. One important thing to remember: what you tell your personal tutor will be treated in the strictest confidence unless you say otherwise. It is also important to stress again - *don't let things drift*.

### UNIVERSITY SERVICES

University support is delivered by

**(A) Accommodation Office** [stoke\\_accommodation@staffs.ac.uk](mailto:stoke_accommodation@staffs.ac.uk)

For information and assistance regarding University managed Halls of Residence and private sector housing contact:

Contact: Stoke 01782 294217/8/9 1<sup>st</sup> Floor, Flaxman Building.

**(B) Employability and Student Support**

[http://www.staffs.ac.uk/services/student\\_support](http://www.staffs.ac.uk/services/student_support)

**Careers and Employability Service**

Open 9.00am - 5.00pm Monday to Friday

[careersS@staffs.ac.uk](mailto:careersS@staffs.ac.uk) [www.staffs.ac.uk/uniservices](http://www.staffs.ac.uk/uniservices)

Contact: 01782 294991. Stoke: Cadman Building

**Childcare Service**

e-mail: a.j.sherratt@staffs.ac.uk [www.staffs.ac.uk/uniservices](http://www.staffs.ac.uk/uniservices)

Contact: Stoke: 01782 294981 or Stafford: 01785 353371

**Counselling Service**

Open 9am – 5pm Monday – Friday (including vacations)

Contact: Stoke: 01782 294977 4/5 Winton Square, Station Road.

**Disability Advisory Service**

Contact: 01782 294977 Stoke - 4/5 Winton Square

**Multi-faith Chaplaincy**

chaplains@staffs.ac.uk

Contact: 01782 294982, Faith House, Stoke,

**(C) Financial Services** [www.staffs.ac.uk/services/financial](http://www.staffs.ac.uk/services/financial)

Cashiers Office, Flaxman Building, College Road, Stoke.

Please also see Students Union Student Advice Centre for advice relating to debt and the University Information Centres for guidance on tuition fees.

[www.staffs.ac.uk/services/financial](http://www.staffs.ac.uk/services/financial)

Contact: 01785 353342

**(D) Information Services** <http://www.staffs.ac.uk/uniservices/infoservices/>**(E) Student Administrative Services –Information Centres**

[www.staffs.ac.uk/informationcentre](http://www.staffs.ac.uk/informationcentre)

Stoke: Flaxman Building, College Road, Stoke-on-Trent, Staffordshire ST4 2DE.

Contact: Stoke 01782 295705

**(F) Student Guidance Officer**

<http://www.staffs.ac.uk/current/student/guidance/index.php>

Email: [n.j.gardener@staffs.ac.uk](mailto:n.j.gardener@staffs.ac.uk)

Mail: Nicola Gardener, Student Guidance Officer, Information Centre, Flaxman Building, College Road, Stoke-on-Trent, Staffordshire, ST4 2DE.

Telephone: 01782 292768

**(G) Students' Union** <http://www.staffsunion.com>

Contact: Stoke 01782 294629 - Above the Ember Lounge, College Road.

### **Students' Union Information Centres**

Contact: Stoke 01782 294629 Students' Union building on College Road. Open from 9am to 8pm, Monday to Friday.

### **Students' Union Student Advice Centre**

Contact: Stoke 01782 294469 College Road, Stoke On Trent, ST4 2DE,  
Fax 01782 295736. above the Ember Lounge in the Student's Union  
Open 9.00am till 4pm daily.  
Email: [sac@staffs.ac.uk](mailto:sac@staffs.ac.uk)

## **7.1.1 Students with additional needs**

Some of you may have additional educational needs arising, for example, from visual or hearing impairment, mobility impairment (including limited manual dexterity arising from arthritis or repetitive strain injuries), dyslexia, epilepsy, asthma, allergies and so on. The University can provide advice and practical assistance for students with additional needs. If you haven't already done so, please contact the Disability Services section of Student Support Services (see the box below). It is also a good idea to discuss any additional needs with your personal tutor as soon as possible to discuss your requirements. Once these are established then either you or your personal tutor can speak to other staff to make any necessary arrangements. Biology staff are committed to ensuring you, as far as possible, a fully inclusive educational experience.

As there will be some fieldwork, please let us know if you have any requirements so we can make reasonable adjustments. As this might involve finding more suitable field venues then please let us know as far in advance as possible! If you have additional needs during examinations then please let the Faculty Office know as soon as possible. You should also be accorded the same treatment for in-class tests, but you should inform the module co-ordinator well in advance so arrangements can be made. Speak to Sue Bird, our 'Students with Additional Needs' co-ordinator if you have any queries.

## Disability Services

Located within Student Support is Disability Services, where a range of services available for advice, information and support continues to develop. You are encouraged to contact them as soon as possible as early discussion of your support needs is essential.

Within available resources Disability Services might be able to provide:

- Academic and domestic support workers
- Help with the application for the Disabled Students' Allowances (DSA) or other sources of funding for support
- Specialist staff on each main campus for advice, information and support
- Help with arranging additional examination arrangements
- Assessment of academic support needs and enabling technology solutions in the Staffordshire Regional ACCESS Centre
- Diagnostic testing for dyslexia
- One to one dyslexia tuition
- Specialist communication support for deaf and hard of hearing students
- Liaison with teaching and other staff to help you co-ordinate your support arrangements
- Help with access to suitable residential accommodation
- Bookable vehicle with wheelchair access

To make an appointment to see a member of the Disability Services team call 01782 294977. They are open from 9am to 5pm Monday to Thursday and 4.30 on Friday. You will find them in the Student Support Building in Winton Square, Station Road in Stoke (opposite the railway station, to the right of the North Stafford Hotel). Alternatively you can pick up one of their leaflets in the Information Centres, the Students' Union and Libraries or visit their web site at <http://www.staffs.ac.uk/services> Please note there may be a waiting list for some services.

If you have a disability or specific learning difficulty (dyslexia) you may be eligible to apply for extra funding in the form of the DSA. These allowances cover any extra costs or expenses you have while you are studying that arise because of your disability. They are not intended to pay for disability related costs that you would have whether you were a student or not. Details are available from your LEA or Department for Education and Skills (DFES). Call the DFES Information Line on 0870 731 9133 to obtain the latest guide to financial support for students in Higher Education, or visit the web site at <http://www.dfes.gov.uk/studentssupport>

## 7.2 Communication channels

Information about assessments (deadlines etc.) is available at the start of each module in a **module 'handbook'** these and other course documents can be found on the 'virtual learning environment' which we use which is (rather oddly) called 'Blackboard' see <http://blackboard.staffs.ac.uk/> or go to the University homepage and click on the 'Quick Links' box – 'Blackboard VLE' is about half-way-down the drop-down list. Information is often given out **in classes** (they're also a good place to speak to us and to each other). Another important communication channel is the **MSc notice board**, situated on the 5<sup>th</sup> floor of Mellor. Remember to check the notice board frequently. There are **student pigeonholes** on the 4<sup>th</sup> floor of Mellor. Internal post may end up here, and information from the library certainly will (e.g. informing you about that inter-library loan that's arrived; of the book that's overdue; or the book that you've reserved is now available). Some material may be sent to your **term-time or home address**, so please ensure that if you move during the course of your studies that you inform the Faculty Office.

All members of staff can be contacted by **e-mail** – and this is often the best way of initial contact. **NB e-mail communication from staff will always be to your university e-mail accounts, so please check these regularly.** Make sure your inbox doesn't get too full otherwise you won't be able to receive any more messages.

Biology staff do try to operate an 'open door' policy towards students and student support. But, because we are obviously kept busy with undergraduate and postgraduate teaching, research, consultancy, administration etc., we are not always in our offices! If you do want to speak to one of us in person, either for a chat, or maybe for an unscheduled tutorial, then arrange a mutually convenient time with the staff member in question (e-mail is usually the best way to set-up a meeting).

## 8.0 Quality Assurance

Maintaining and enhancing the quality of teaching provision is uppermost in our minds. So how do we ensure what we offer is of high quality? As no one method is infallible, we rely on a variety of inputs. First of all, there will be an **external examiner** from another higher education institution who will (i) scrutinise completed assignments to make sure we're marking fairly and consistently to agreed criteria; (ii) examine all Masters project reports; (iii) make sure our award is of at least the same standard as other MSc's around the country; and (iv) ensure that the exam boards

are fair. The external examiner will write a report to which we must produce a written response. All projects will be double-marked, as will a percentage of coursework assignments as a check that the marking is fair and consistent.

In addition, the quality of the award will be monitored each year. Each module tutor will write a report (which takes account of your views - see following paragraph). These will then be scrutinised by the Award Management Team. On the basis of this, the Award Leader will report the results to the Award Board of Study and an Action Plan will be prepared. A final report (including the agreed Action Plan) will be made to the Faculty Quality Committee who check that the award is maintaining its quality.

Last, but not least, there's you! The University has produced a set of guidelines for student feedback and evaluation, which we use as our basis. You will be asked to provide anonymous feedback and suggestions for improvement for all the modules you take. There will also be student representatives who will canvas your views and relay them to the staff team, although in recent years we have tended to allocate time within teaching sessions to enable the whole group to air their views. It's up to you as a group to decide the best way of doing this. Your concerns need not relate only to the modules you're taking, they could be about the Library and other learning resources, the various University services, accessibility and availability of staff, buildings or services, the general quality of teaching and the learning experience, or operational aspects of the course.

Of course, the fastest way to get a response is simply to have a chat to any member of the academic team. We are all keen to know your views and you can be certain that any perceived problems will be dealt with as soon as possible.

## 9.0 General Safety Guidelines

### 9.1 Laboratory Safety

Working in a laboratory is potentially hazardous. Students should always use common sense when handling dangerous equipment and chemicals. Listed below are some **minimum** safety requirements which you are expected to adhere to at all time. The Biology Field takes the issue of student safety very seriously and all efforts are made to ensure good practice and a safe learning environment. You will be required to fill in a health questionnaire prior to registration giving notification of next of kin, as well as disabilities and allergies etc.

1. Always make sure that a member of staff is aware of your presence in the laboratory. This may mean notifying Security at weekends and during evenings (after 5pm).
2. You need to know the location of the nearest first aid box, eye bath and fire exits.
3. The use and disposal of chemicals, equipment and organisms must be COSHH assessed, a copy of which should be signed by the student's project advisor and submitted to one of the School's Senior technicians (Andy Willits/Audra Jones).
4. **Properly fastened, full-length laboratory coats must be worn at all times.** Lab coats must not be worn outside the laboratories (e.g. in eating areas).
5. Do not eat, drink or smoke in the laboratory.
6. Broken glass should be swept up and placed in the clearly labelled broken glass bins.
7. Any spillage or escape of organisms must be dealt with immediately. If this spillage represented a risk to others then all surfaces must be swabbed down with virkon.
8. Before storing, biological samples and specimens must be clearly labelled with:
  - your name
  - your project advisor's name
  - date
  - organism or nature of sample
9. Most importantly, if you have doubts concerning safety consult your project advisor or another member of Biology staff. In addition, all defects in equipment should be reported to a technician immediately.

In addition, please note the following:

- Microscopes are very expensive. Please treat with care, removing immersion oil from the lens after use.
- Before leaving the laboratory make sure that benches are clean and tidy.
- All equipment and field guides (lab 519) must be signed out by a technician before being removed from the laboratory.

## **9.2 Fieldwork Safety**

If possible, students should not work alone in the field. If this is not possible, and providing a risk assessment indicates that the risks are low, students can work alone but must always notify a responsible third party of their location and time of return during all field visits. Additionally, extra caution must be exercised when working on remote sites or whilst sampling aquatic habitats. You will not be allowed to work alone when working in aquatic habitats.

It is University policy that hazard/risk assessments are carried out before undertaking fieldwork as well as laboratory work. This includes all procedures, equipment, chemicals and livestock used. Students attending the residential fieldcourse and other field trips will be made aware of potential hazards relating to the areas visited.

Specific guidelines for fieldwork safety during the research project will be drawn up together with project advisors. Different projects will incur different hazards and so each has to be considered individually. Students will then fill out a Fieldwork Risk Assessment proforma, which must be signed by their project advisor and the Senior technician.

# Staff

## 10.1 Introduction to Ecology staff

### Professor John Dover

☎ S122

☎ 294611

✉ [j.dover@staffs.ac.uk](mailto:j.dover@staffs.ac.uk)

Web: [www.staffs.ac.uk/schools/sciences/biology/Acstaff/Jdover/jdoverhome.html](http://www.staffs.ac.uk/schools/sciences/biology/Acstaff/Jdover/jdoverhome.html)

John has a background in the ecology of butterflies, particularly in relation to the field margin habitats of arable land. His main interest lies in how butterflies move around landscape elements and the functions affecting their abundance and dispersal patterns. He has carried out work on wildlife corridors and butterfly movement between island habitats in Scandinavia (Norway + Sweden) and detailed behavioural, dispersal and density studies of butterflies in the UK. Recent work includes the factors affecting the distribution of a vulnerable Lycaenid butterfly in fragmented native vegetation in Western Australia, the contribution of field margins and green lanes to biodiversity in the wider countryside (England) and the impact of land-use on butterflies in the hay and grazing meadows of the Picos de Europa, Spain. John is on the Habitat Action Plan Steering Group for Hedgerows and also for Arable Margins, he is an outgoing Council Member of the charity Butterfly Conservation, and is a Member of the British Ecological Society and a Fellow of the Royal Entomological Society. John also has an interest in urban environments and especially in relation to the ecosystem services provided by biodiverse green infrastructure. John is also Award Leader for this course.

#### *Graduate and Post Graduate Qualifications*

Post Doctoral studies: the Game Conservancy (now The Game and Wildlife Conservation Trust)

Ph.D. Lepidoptera Ecology, University of Southampton.

B.Sc. (Hons) Applied Biology, Salford University.

### Dr Paul Mitchell

☎ S411

☎ 294572

✉ [p.mitchell@staffs.ac.uk](mailto:p.mitchell@staffs.ac.uk)

Paul is interested in the testing and application of ecological theory, and has an academic background in experimental research. He also has a particular interest in British mammal ecology, freshwater invertebrates and spiders. Recent research has included a study of the impact of invasive Himalayan Balsam on invertebrate

diversity, a study into the importance of grassland tussocks for overwintering invertebrates, and an investigation into the interactions between native otters and American mink.

*Graduate and Post Graduate Qualifications*

1993 PG Cert. Teaching in Higher Education, Staffordshire University.

1988 Ph.D. Community Ecology, Sunderland Polytechnic.

1984 B.Sc. (Hons) Zoology, Liverpool University.

**Dr Kevin Reiling**

☎ S413a

☎ 294746

✉ [k.reiling@staffs.ac.uk](mailto:k.reiling@staffs.ac.uk)

Kevin has varied interests, although his academic research has focussed on the environmental physiology of plant stress, such as pollution. He is also an experienced field ornithologist, having worked for the British Trust for Ornithology and the Wildfowl and Wetlands Trust, and is also interested in the Lepidoptera, particularly the micro-moths.

Kevin's main research interests have been on ozone impacts on species interactions, currently plant-insect, plant-mycorrhizal and plant-bacterial; investigation of metal tolerance, hyperaccumulators and phytoremediation; pre-zygotic impact of ozone on native plant species; biomonitoring of aquatic habitats using submerged macrophytes and chlorophyll fluorescence.

*Graduate and Postgraduate Qualifications*

1994 PG Cert. Teaching in Higher Education, Staffordshire University.

1990 D.Phil. Plant Ecology, University of Newcastle upon Tyne.

1986 B.Sc. (Hons) Plant Biology, University of Newcastle upon Tyne.

**Dr David R. Skingsley**

☎ S518

☎ 294746

✉ [d.r.skingsley@staffs.ac.uk](mailto:d.r.skingsley@staffs.ac.uk)

Dave has an academic background in the sensory biology and physiology of invertebrates, and has worked, for example, on vision in Dipteran flies. He is particularly interested in the crane flies (Diptera:Tipulidae), and has published an Atlas of Staffordshire Crane Flies. He is also the secretary and founder member of the Staffordshire Invertebrate Group, a Fellow of the Royal Entomological Society and a member of the Dipterists' Forum.

*Graduate and Postgraduate Qualifications*

1986 BSc (Hons) Human Physiology, Leeds University

1990 D.Phil. Physiology (Neurophysiology of the snail *Lymnaea stagnalis*),

Cambridge University:

1994 Postgraduate Certificate in Teaching in Higher Education, Staffordshire University

**Mr Graham Smith**

☎ 294038

✉ [g.r.smith@staffs.ac.uk](mailto:g.r.smith@staffs.ac.uk)

📄 S137

Graham specialises in applied research using (GIS) in areas including population and risk, housing, regeneration, environmental justice and built environment and health. This includes detailed knowledge of Ordnance Survey mapping products and key socio-economic, environment and land use datasets. Graham also provides customised GIS tools and databases and tailored GIS training. Graham has worked with John Dover on using GIS in ecology fieldwork including 2-D and 3-D visualisation of butterfly mark-release-recapture tracks using digital elevation models and aerial photography.

*Graduate and Postgraduate Qualifications*

2002 MA Geographical Information Systems for Business and Service Planning, University of Leeds

2000 BA Geography, University of Leeds

## 10.2 Additional Members of the Teaching Team

**Dr Angela A. Priestman**

📄 S412b

☎ 294845

✉ [a.a.priestman@staffs.ac.uk](mailto:a.a.priestman@staffs.ac.uk)

Angela has a strong background in biochemical entomology, particularly with respect to the vector biology of various haematophagous dipteran flies. Recently she has been researching the ecology of British and European mosquitoes, and is interested in the effects of climate change on disease transmission. Angela is a Fellow of the Royal Entomological Society and her entomological experience has been put to good use when she acted as an expert witness. Angela is also the Biology Subject Area Leader.

*Graduate and Postgraduate Qualifications*

1980 BSc (Hons) Environmental Biology Queen Mary College, University of London

1983 PhD, University of Keele, Monosaccharide absorption by the cysticercoid *Hymenolepis diminuta* (Platyhelminthes: Cestoda)

1991 Post-graduate Certificate in Teaching in Further and Higher Education, Staffordshire University

### Dr Jon Ranford

☎ S429

☎ 294892

✉ [j.j.ranford@staffs.ac.uk](mailto:j.j.ranford@staffs.ac.uk)

Jon has an academic background on the impacts of air pollution on native plant species and communities. This is being extended to assess the impact of ozone on host plant-insect relationships, predominately in lepidopteran species and is collaborating with Dr. K Reiling to further investigate the impact of ozone on stomatal development. He has a general interest in conservation biology, lecturing on related modules at all levels and is a member of the British Ecological Society. He also reviews manuscripts for *New Phytologist*, *Environmental Pollution*, and *Global Change Biology*.

#### *Graduate and Postgraduate Qualifications*

1993 BSc (Hons) Biology & Environmental Science, Staffordshire University

2006 PhD The impact of tropospheric ozone on European Holly (*Ilex aquifolium* L.), the leaf-miner (*Phytomyza ilicis* Curtis) and its parasites: a tritrophic interaction

### Technical and support staff you are likely to meet:

Technical Staff	Room	Area of expertise
Sue Avery	S519	Ecology/Physiology
Ian Hopkins	S404	Ecology/Microbiology
Mark Jennings	S429	Sciences IT support
Jon Ranford	S419	Sciences IT support
Sue Collingwood	LRC	Learning Resources

#### Administrative Staff

Lindsay Dodd Faculty Office

## 11.0 Resources available to you

### 11.1 Teaching and research resources in Biology

Relevant facilities provided by the Field of Biological Sciences include: heated glass houses and growth chambers; constant temperature and incubation rooms; atmospheric pollution fumigation suite; temperate and tropical insectaries and an ecology postgraduate research laboratory. Sampling equipment and specialist identification guides can be provided from the ecology store on request (Lab 519). In addition to equipment and laboratories available within Biology, the Faculty provides a **Learning Resource Centre** (LRC) The open-plan LRC is often used by students preparing group work. The LRC contains books, videos, maps, and article reprints. The reprints are generally held in module-specific box files, and are often there for supplementary reading. Because of the copyright laws, not all material available in the LRC can be photocopied by you.

The **IT Suite** contains 50 modern networked PCs and associated generalist and specialist software. Both of these resources are conveniently located on the fourth floor. In addition, further IT facilities are provided centrally by the University (in the library, for example).

We have a number of high quality Olympus binocular microscopes with fibre optic light sources and a camera attachment, plus radio tracking, DGPS, and GIS systems.

The Biology Field has an extensive collection of up-to-date identification keys (including a complete set of in-print Royal Entomological Society keys and a set of Freshwater Biological Association keys). You will also have access to standard sampling equipment (e.g. sweep nets, pond nets, samplers, kite nets, beating trays, moth traps, suction samplers, data loggers).

### 11.2 Library Resources

The Thompson Library on the Stoke campus provides a comprehensive resource for students, staff and researchers in the Department of Biological Sciences. Library staff will provide information about opening times and how to get the most out of the library. The Nelson Library at the Stafford site houses a number of titles, particularly in the area of physiology and human biology.

In addition to the textbooks and journals available as hard copies in the library, you will also have access to several online resources. This includes:

#### E-Book Collections:

The Library has 2 E-Book collections that provide texts for Biomedical Science

- NetLibrary: Includes titles specifically selected by staff to support courses. Titles includes books on the subject areas of biology, molecular biology, cell biology, immunology, genetics etc
- Ebrary: provides access to a full-text collection of over 18,000 electronic books covering most academic subject areas including the health and life sciences (biology, human anatomy, genetics, disease and molecular biology etc).

#### Online Databases:

Annual Reviews Online Database (on campus access only):

a multi-edition scientific review series. Full-text access is up-to-date for the following Annual Review series:

- Entomology
- Ecology, Evolution and Systematics
- Environment and Resources

Blackwell Synergy (including Blackwell Science):

provides access to full-text and abstract-only journal articles.

Science Direct:

provides access to full-text e-journal articles from the year 2000 onwards, for many relevant journals

SwetsWise:

is one of the Library's major providers of full text electronic journals via the Internet. The service covers a vast range of subject areas but it is particularly useful for locating full text journal articles on various aspects of Biosciences.

Web of Science:

is a multidisciplinary database that provides access to current and retrospective information printed in over 8,000 international academic journals. There is a handout on Prof. Dover's website which may help with getting the most out of Web-of-Science

[www.staffs.ac.uk/schools/sciences/biology/Acstaff/Jdover/teaching.htm](http://www.staffs.ac.uk/schools/sciences/biology/Acstaff/Jdover/teaching.htm)

The Library staff are very helpful and run a number of training sessions showing you how to get the best out of the Library and its facilities. The Library's Biosciences page (<http://www.staffs.ac.uk/uniservices/infoservices/library/learn/biosci.php>) has more detailed information. The subject contact in the library for the biosciences is Kathleen Morgan ([K.Morgan@staffs.ac.uk](mailto:K.Morgan@staffs.ac.uk)).