



## OVERVIEW

[Queen's University Belfast](#), a member of the prestigious [Russell Group](#)<sup>1</sup>, offers this postgraduate diploma (9 months full-time) or master's degree (1 year full-time or 2 years part-time) in [Ecological Management & Conservation Biology](#). The course pairs academic lectures in conservation biology with weekly field trips that demonstrate practical ecological management techniques at a range of stunning locations throughout Northern Ireland (see **Fig. 1**). We aim to maximise our graduate's employability and our ethos is geared to prepare students for careers in Government, non-government organisations (NGOs), conservation charities, environmental consultancies and scientific research institutes.

Students will acquire the theoretical and academic background to each topic covered before engaging with conservation practitioners in the field to get hands-on experience. A varied mix of continuous assessment, including oral and written scientific communication exercises, as well as formal exams will assess skills in using bibliographic resources when assessing the current global biodiversity crisis including: habitat destruction, alien invasive species, overexploitation and climate change. Skills taught include ecological survey techniques, data manipulation, database construction, Geographical Information Systems (ESRI's ) and statistical analyses using the freeware platform .

Upon completion of this 1 year course students should be able to deal with complex environmental issues systematically and creatively, communicate their conclusions clearly to specialists and non-specialists, demonstrate personal initiative, independent and team-orientated skills in tackling problems and, demonstrate the independent learning ability required for continuing professional development. Each student will undertake a personal research project enabling them to develop a research idea, collect data electronically, in the field or laboratory, analyse the results and present a written theses. Students are free to choose their own research topics giving each a great sense of autonomy to follow their own interests although a series of research titles will also be provided.

### Course structure (modules)

BBC8034	Ecological Management & Conservation Biology (40 CATS)
BBC8042	Foundations for Research in Biosciences (20 CATS)
BBC8035	Skills in Ecological Management (20 CATS)
BBC8026	Professional Development (20 CATS)
BBC8025	Literature Review (20 CATS)
BBC8001	Personal Research Project (60 CATS)

<sup>1</sup> Russell Group Universities host almost a third of all students studying in the UK from outside the EU and award 60% of all doctorates in the UK. The group was responsible for 68% of both world-leading research and outstanding research impact during the 2014 Research Excellence Framework (REF2014). Queen's University Belfast was ranked No.1 in the UK (on Research Intensity) for Agriculture, Veterinary and Food Science.

**Preliminary timetable (BBC8034 Semester 1 Sept-Dec 2016)**

During Semester 1 (Sept-Dec 2016) the core module incorporates 32 hours of taught lectures and 40 hours of field practicals (= 72 hours):

Week	Day	Date	Duration (hours)	Topic
1	Mon	26-Sep	2	<i>Introduction to MSc, tour of MBC, Intro to Conservation Biology</i>
				<i>Welcome to School (social, pizza, wine)</i>
	Tue	27-Sep	4	What is biodiversity? Why is it important? Ecosystem services
				Environment change and Conservation Biology
2	Mon	03-Oct	2	Emerging issues in global and local conservation
	Tue	04-Oct	4	DAY TRIP: Ballinderry Rivers Trust - <i>Ex-situ</i> conservation of Fresh Water Pearl Mussel and reintroductions
3	Mon	10-Oct	2	Marine Conservation, climate change and migration
	Tue	11-Oct	4	DAY TRIP: Copeland Island Bird Observatory - Local management of a long-distance marine migrant (Manx shearwater)
4	Mon	17-Oct	2	Invasion Biology: Theory and Practice
	Tue	18-Oct	4	DAY TRIP: Lagan Valley Regional Park - Management of invasive species e.g. Himalayan balsam, Japanese knotweed, giant hogweed, Rhododendron
5	Mon	24-Oct	2	Conservation Behaviour
	Tue	25-Oct	4	DAY TRIP: RSPB Portmore Lough - Managing designated species (ground-nesting birds) and predation risk
6	Mon	31-Oct	2	Wildfire Ecology (1hr) / <b>CONTINUOUS ASSESSMENT: Invasive Species POSTERS</b> (1hr)
	Tue	01-Nov	4	DAY TRIP: Mourne Mountains - Managing site visitor numbers, footfall, wildfires and soil erosion
7	Mon	07-Nov	2	Soil organisms as environmental indicators / Climate change and soil
	Tue	08-Nov	4	Environmental Impact Assessments (1hr) / DAY TRIP: RPS Mullaghglass landfill site & Slievenacloy Nature Reserve (Ulster Wildlife)
8	Mon	14-Nov	2	Conservation Genetics
	Tue	15-Nov	4	DAY TRIP: Belfast Zoo - Captive breeding & conservation genetics / public education
9	Mon	21-Nov	2	<b>CONTINUOUS ASSESSMENT: Conservation genetics SEMINARS</b>
	Tue	22-Nov	4	Emerging tree diseases (2hrs) / DAY TRIP: Tour of plant pathogen facilities AFBI Newforge Lane (2hrs)
10	Mon	28-Nov	2	Grassland Management
	Tue	29-Nov	4	DAY TRIP: Murlough National Nature Reserve - Managing successional change, scrub encroachment & conservation grazing
11	Mon	05-Dec	2	Introduction to Environmental Economics
	Tue	06-Dec	4	DAY TRIP: Bulrush Horticulture Ltd. & Ballynahone Bog (Ulster Wildlife) - Commercial exploitation and restoration of habitats of conservation importance
12	Mon	12-Dec	2	Methods of Environmental Economics
	Tue	13-Dec	4	<b>CONTINUOUS ASSESSMENT: Environmental Impact Assessments SEMINARS</b> (2hrs) / Module Evaluation (1hr) / SPARE CAPACITY (1hr)
	Fri	13-Jan	-	<b>Deadline for CONTINUOUS ASSESSMENT: Written report on Environment Economics</b>

### **Preliminary timetable (BBC8042 Semester 1 Sept-Dec 2016)**

During Semester 1 (Sept-Dec 2016) the *Foundations for Research in the Biosciences* module covers 20 hours of interactive seminars:

Week	Day	Date	Duration (Hours)	Topic
1	Tues	27-Sept	2	Making the most of an MSc, course overview and assignment briefing - How to write a research proposal?
2	Tues	04-Oct	2	How research is funded, how to find information, database searches, peer review and understanding literature
3	Tues	11-Oct	2	*** Free week ***
4	Tues	18-Oct	2	The Scientific Method
5	Tues	25-Oct	2	Experimental design - How to formulate hypotheses, how to design experiments?
6	Tues	01-Nov	2	Introduction to statistics for analysis of experimental data
7	Tues	08-Nov	2	Staff pitches of their field of research: Individual faculty give 15 minute presentations of their field of research and how their ideas developed
8	Tues	15-Nov	2	Impact: both economic and social (involvement of Research Enterprise Office and presentations of impact case studies)
9	Tues	22-Nov	2	Ethics in research, general and in the use of animals
10	Tues	29-Nov	2	Scientific communication: different dissemination strategies/impact case study
11	Tues	06-Dec	2	Poster presentation

### **Preliminary timetable (BBC8026 Semester 1 Sept-Dec 2016)**

During Semester 1 (Sept-Dec 2016) the *Professional Development* module includes a 4-6 day work placement in the field followed by assessment using 1) a learning journal completed on placement and 2) a written report; each driven by self-directed independent study.

### **Semester 2 Feb-Aug 2017**

Three modules will run in Semester 2 (Feb-Aug 2017); *Skills in Ecological Management* (BBC8035) will include approx. 40 hours of interactive practical sessions covering ecological statistics using R and spatial analyses using ArcGIS as well as self-directed independent creation of a Handbook covering Ecological Sampling Techniques. There are two field trips to Queen's Marine Laboratory and also the Research Vessel Corystes. In addition, Semester two includes a module on *Literature Review* (BBC8026) and an individual *Research Project* (BBC8001) from May to August. The precise timetable for 2017 is still in production.



**Fig. 1** Photographic summary of field trip locations associated with academic taught content. Logos identify external conversation bodies, non-government organisations, charities and environmental consultancies that host practical excursions demonstrating habitat and species management or ecological survey techniques.

The course is delivered by a dynamic team (see overleaf) covering expertise in conservation biology, theoretical ecology, animal ecology, marine biology, invasion biology, soil biology, genetics and genomics, and biodiversity. Currently taught in the Medical Biology Centre (see below), the course will move to a [new £39M School of Biological Sciences](#) from 2018 onwards.





## The Team

**Module coordinator:**  
Dr Neil Reid,  
Conservation Biologist



**Lecturer:**  
Dr Keith Farnsworth  
Theoretical Ecologist



**Lecturer:**  
Prof Ian Montgomery  
Animal Ecologist



**Lecturer:**  
Dr Jon Houghton,  
Marine Biologist



**Lecturer:**  
Prof Jaimie Dick,  
Invasion Biologist



**Lecturer:**  
Dr Tancredi Caruso  
Soil Biologist



**Lecturer:**  
Dr Sarah Helyar  
Geneticist



**Lecturer:**  
Prof Mark Emmerson  
Biodiversity



**Technician:**  
Gillian Riddell  
Logistics



**External:**  
Field trip host

>8 members of  
conservation  
organisations,  
charities and  
businesses.

### Entry requirements:

MSc: a 2.2 BSc Honours degree or above in a relevant area of science or equivalent qualification acceptable to the University. PG Diploma: a Pass degree or above in a relevant area of science or equivalent qualification acceptable to the University.

# APPLY HERE

If you have any questions or queries please do not hesitate to contact module coordinator Dr Neil Reid at [neil.reid@qub.ac.uk](mailto:neil.reid@qub.ac.uk) or 0044 28 9097 2281 (9am-3pm GMT, Monday-Friday).

## We look forward to meeting you!



Stunning Lanyon Building,  
Queens University Belfast