

Liverpool John Moores University

Title: ECOLOGY FIELD SKILLS
Status: Definitive
Code: **5006NATSCI** (112583)
Version Start Date: 01-08-2017

Owning School/Faculty: Natural Sciences & Psychology
Teaching School/Faculty: Natural Sciences & Psychology

Team	Leader
David Bourke	Y
Sarah Dalrymple	
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Academic Level: FHEQ5 **Credit Value:** 24 **Total Delivered Hours:** 87
Total Learning Hours: 240 **Private Study:** 153

Delivery Options

Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	12
Off Site	66
Practical	6
Seminar	3

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Report	UK FW	Field Report UK	50	
Report	RES FW	Field Report Overseas	50	

Aims

To demonstrate theoretical and practical aspects of ecology fieldwork methods on plants and animals in different habitats, with particular emphasis on ecological surveys and censuses of specific organismal groups and using GIS to organise and

analyse spatial data in ecology.

Learning Outcomes

After completing the module the student should be able to:

- 1 Identify surveys and census methods that are most appropriate for specific environmental assessments and identify the main factors that will affect their reliability.
- 2 Execute field sampling programmes appropriate to different organismal groups and habitats.
- 3 Carry out a Phase 1 habitat survey, a National Vegetation Classification and a systematic survey of common birds.
- 4 Critically analyse, interpret and discuss data from field sampling programmes with reference to factors such as human impacts, environmental management and environmental variation.
- 5 Use Geographical Information Systems to organise and analyse spatial data in ecology.

Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

Report -UK FW	1	3	4	5
Report -RESIDENTIAL FW	1	2	3	4

Outline Syllabus

What are surveys and why do we need them? The need for survey data in environmental assessments.

Sampling Theory: What is a sample? Quadrats, transects, random samples, stratified random samples, grid samples. Fitting statistical models to plant abundance data. The effect of quadrat size and number of replicates on estimates. Animal trapping and marking methods: pitfall trapping, sweep netting, vacuum sampling, ringing, paint marking, radioactive tracers, radio telemetry, mark-release-recapture.

Habitat Surveys: Phase 1 & 2 habitat surveys, river corridor surveys.

Tree Surveys: Measuring trees for forestry and arboriculture, Diameter at Breast Height (DBH), tree height, crown spread, age, timber volume, plotless estimation of tree densities.

Vegetation Surveys: Continental phytosociology, National Vegetation Classification (NVC), sources of error.

Bird Surveys: Bird atlases, bird population monitoring schemes including case study of the Common Bird Census (CBC) and Breeding Bird Survey (BBS). Line transects and point counts for birds.

Community structure in relation to climatic, edaphic, topographic and management factors.

Factors affecting microgeographic distributions: microhabitat selection in small

animals.

Collection, organisation and analysis of Spatial survey data in ecology - use of Geographical Information Systems.

Learning Activities

Lectures, computer practicals (GIS), field investigation of a UK site, one week residential field course abroad, which includes execution and presentation of a two-day research project.

Notes

This module examines different standardized methods used for ecological censuses and surveys in the UK. Field experience is provided. Different sampling techniques are dealt with in some depth during lectures and during fieldwork abroad, with the aim of explaining the quantitative framework on which they are based in addition to providing practical experience of their execution in the field. Students also learn how to digitise spatial data and produce maps using GIS which they then use to analyse spatial data on habitat and vegetation features.