

D202: Diversity and community analyses in conservation biology

Tuesday 15th –Wednesday 16th August 2009

Course directed by: **Dr Mark Gardener**

This course is designed as an introduction to the examination of diversity and entire communities. Basic analytical methods tend to examine a single species but in conservation we are more often interested in many species in a complete community. This course is designed to give you an understanding of how to set about examining community data. The course builds on knowledge gained from study of D101 and D201.

This course will provide you with the groundwork for detailed community analyses. We will begin by looking at what diversity is and methods of comparing species richness between sites. Next we will introduce the Chi-squared test and show how it can be used in community studies. Then we will look at ways of determining how similar communities are and show how you may draw the relationships between communities using hierarchical cluster analysis. We will also draw these relationships graphically using dendrograms. We will then cover the two main indices of biodiversity, Simpson's index and the Shannon-Wiener index, and show how to determine if differences in diversity are statistically different. We will then look at the basics of multivariate analyses and examine polar ordination. Finally we will examine the Twinspan program (provided) as a way of determining indicator species in communities.

Main themes covered:

Methods of comparing species richness.
Diversity indices (Simpson's and Shannon).
Comparing diversity (Hucheson t-test).
Similarity indices and distance measures.

This course is suitable for anyone who would like to present their biological

data professionally. Benefits include:

- Scientific rigour and credibility
- A professional approach to data handling and presentation
- Gaining skills to apply to many conservation situations
- Enhanced awareness of the correct use of a statistical approach

It is designed specifically for the conservation sector. Example participants on similar courses have included Masters students and those employed or volunteering for Government Agencies, Recording Societies, Ecological Consultancies, Wildlife Trusts or County Councils.

What to Bring:

A laptop with administrator rights and a 'Memory Stick'. Preston Montford shop stocks memory sticks and can provide a laptop **if notified in advance**.

Courses in data analyses in Conservation and Ecology

These courses are designed to form an integrated approach to data handling and analyses in conservation biology and ecology.

All courses will be practical and inter-active and will focus on examples from a range of biological recording areas.

Examples and handout material will be provided on a CD-ROM with a course file along with software as required.

There are 6 courses in the series:

D101: Data analyses in conservation biology.

10th-11th August 2009

D201: Advanced data analyses in conservation biology.

12th-13th August 2009

D202: Diversity & community analyses in conservation biology

R101: Using R for analyses in conservation - an introduction.

19th-20th October 2009

R201: Advanced analyses in conservation using R.

21st-22nd October 2009

R202: Community analyses using R.

28th-29th November 2009

COURSE FEES AND WHAT'S INCLUDED

Single Room Resident:	£225 incl tuition, full board and accommodation
Shared Room Resident:	£195 incl tuition, full board and accommodation
Non-resident:	£165 incl tuition, lunches and evening meals

COURSE TIMES

Course members, both resident and non-resident, should plan to arrive in time for coffee at 10:30-11:00am. There will be staff on reception to welcome you from 10:00am onwards.

It is sometimes possible for visitors on courses to stay over additional nights - please don't hesitate to ask if you would like this facility.

BOOKING PROCEDURE

To book a place on this course please complete the booking form and send it together with a deposit of £50 (cheque payable to Field Studies Council) to the address below. Payment of the balance of the course fee will be due 30 days before beginning of course. Cancellation after this date may leave the customer liable for the full amount - a condition which is accepted when the booking is confirmed. You are recommended to take out personal cancellation insurance to cover this eventuality.

Field Studies Council
Preston Montford Field Centre
Montford Bridge, Shrewsbury, SY4 1DX
Tel: 01743 852 040 Fax: 01743 851 066
Email: enquiries.pm@field-studies-council.org

ACCOMMODATION AT PRESTON MONTFORD

Our Darwin building has twin bedded rooms, each with en suite facilities; as a general rule, we will allocate these rooms (if available) to couples and people willing to share - thus giving more people the benefit of these facilities. People paying the single room fee will be guaranteed a room to themselves (with wash hand basin); toilets, showers and bathrooms are along an adjoining corridor.

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Tuesday-Wednesday
Arrive in time for 10:30am coffee on Tuesday
Depart 4.00pm on Wednesday

Course directed by:

Dr. Mark Gardener