

Liverpool John Moores University

University Modular Framework

Module Code: 7514CATSCI

Module Title: Ecological Assessment

School: NSP

Version No:
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Date version starts:
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Module Leader

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Level: 7

Credit Rating: 15

Indicative Time Allowances(hours):

Lec	Tut	Sem	Prt	Wrk	Fld	Other	Deliv. Tot	Exam	Private Study	Tot. Learning Hours
8	0	6	16	0	0	0	30	0	120	150

Semester Delivery: (Select one only)

Semester 1

Semester 2

Runs twice (S1 & S2)

Year Long

Summer

Other

Pre-requisites: None

Recommended Prior Study: None

Co-requisites: None

Barred Combinations: None

Aims:

- a) Study and understand research based methods which have been developed to assess key concepts in sustainable ecology, such as biodiversity, carbon storage and nutrient status and forms of ecosystem functioning.
- b) Understand concepts of ecosystem health and functioning and carry out an assessment of habitat function, habitat quality and health.
- c) Practice the use of, and evaluate the value of, identification techniques for flora and fauna which focus on different taxonomic levels and morphological-functional groups.
- d) Show critical awareness of the value of local, national, international and traditional records of ecology, ecological health and ecological change and know how to access such records.
- e) Use multivariate data and expert knowledge to suggest management plans for ecosystems or habitats.

Learning Outcomes: After completing the module the student should be able to:

1. Critically evaluate methods for monitoring aspects of ecosystem health and functioning, and relate ecosystem health and functioning to local, national and global sustainability.
2. Synergize multivariate information on ecosystems to make judgments on an ecosystem or habitat functioning, stability and resilience and where appropriate, devise management recommendations.
3. Develop a deep and systematic understanding of the value of different ecological data sets and types of data in assessing and monitoring ecosystems and habitats.

Learning Activities:

This module will comprise a series of practicals, supported by lecturers and interactive seminars. Practical will be based in local habitats for onsite learners. Distance learners will be set practical tasks of habitat evaluation for sites local to them and/or be provided with example datasets and information. Lectures will draw on a wide variety of theoretical and applied topics with a wide use of case studies throughout.

Outline Syllabus:

Ecological surveys, functional habitat mapping, definitions of ecosystem health and how this might be determined. Recognizing habitat values such as carbon retention, biodiversity, and regulating services. The value and availability of local, national and international data sets, value of citizen science, local and traditional environmental knowledge. Management scenarios to maximize ecosystem health.

Indicative References:

Berkes, F., Colding, J. and Folke, C. (2000) Rediscovery of traditional ecological knowledge as adaptive management. *Ecological applications*, 10(5), pp.1251-1262.

de Bello, F., Lavorel, S., Díaz, S., Harrington, R., Cornelissen, J.H., Bardgett, R.D., Berg, M.P., Cipriotti, P., Feld, C.K., Hering, D. and da Silva, P.M. (2010) Towards an assessment of multiple ecosystem processes and services via functional traits. *Biodiversity and Conservation*, 19(10), pp.2873-2893.

Rapport D J, Costanza R, McMichael A J. (1998) Assessing ecosystem health. *Tree* 13(10) 397-402

Raymond, C.M., Fazey, I., Reed, M.S., Stringer, L.C., Robinson, G.M. and Evely, A.C., 2010. Integrating local and scientific knowledge for environmental management. *Journal of environmental management*, 91(8), pp.1766-1777.

Silvertown, J., 2009. A new dawn for citizen science. *Trends in ecology & evolution*, 24(9), pp.467-471.

Wheater, C.P. (2011) *Practical Field Ecology*. Paperback. Wiley-Blackwell's.

Assessment Details:

- 1 Coursework: 80% Coursework: Report (2400 words)
- 2 Coursework: 20% Coursework: Presentation (600 words equivalent)

Weighting between E and CW: 0% 100%

Relationship between learning outcomes and assessment tasks:

	1	2	3
Component 1	X	X	
Component 2			X

Minimum Pass Mark (%): 50

Module Notes: