Limnology: The Science of Lakes

Occupying a large Georgian manor house, Malham Tarn Field Centre is situated in the Malham Tarn National Nature Reserve. Many natural attractions are on the doorstep including the tarn, one of eight upland alkaline lakes in Europe, and the limestone features of Malham Cove and Gordale Scar.

Course Overview

Limnology was originally defined as the science of lakes although it has now been extended to cover all open non-marine waters. In this introductory course we shall concentrate on lakes and use nearby Malham Tarn for practical work.

An understanding of lakes is only possible with reference to physics, chemistry and biology. We explore, in simple terms, the important physical processes in lakes, namely their stratification, the formation of waves and the penetration of light. One of the most important chemical factors, having a large impact on organisms, is the concentration of dissolved oxygen. We shall conduct oxygen measurements on the Tarn waters, plus some other chemical tests and see how these relate to lake organisms. Most limnological research is related to biology.

This course will concentrate on the organisms that live within the water column and will involve sampling phytoplankton and zooplankton from a boat. The organisms will be examined microscopically and the results discussed in the light of the chemical analyses. Finally, consideration will be given to the origins of lakes and their evolution with reference to the historic evidence obtained from lake sediments.

This course is suitable for all ages and aims to provide an introduction to the fascinating science of lakes and the means by which they can be studied with the minimum of equipment. No previous knowledge of lakes is required. Some boat work will be necessary but is not obligatory.

Course Level: Open to everyone
About the Tutor

Allan Pentecost has been interested in limnology for many years, having published several studies of their chemistry, history and biology, including Malham Tarn. He is currently an Honorary Research Fellow of the Freshwater Biological Association situated on Windermere and Emeritus Reader at King's College London.

What is Included

- Up to 9 hours of tuition a day.
- Full board accommodation including a cooked breakfast, packed lunch, home-made cakes and an evening meal. Vegetarian and other dietary options are available on request.
- Tea and coffee making facilities available throughout the day.
- Use of resources including library, workrooms and the Centre grounds.
- Centre organised transport during the course and most admission fees.

Non-resident course fees include all of the above except breakfast and accommodation.

Please arrive between 4.00pm and 5.30pm on arrival day, allowing time to settle into your room before evening meal which is usually around 6.00pm. The course will begin formally after dinner with an introduction to the Centre. If you are non-resident, please arrive by 5.45pm. The course will end at 3.00pm on the last day and we ask that rooms are vacated by 9.30am.

What to Bring

Warm clothes and a torch for evening studies
- Waterproof jacket and trousers *
- Walking boots, wellington boots *
- Warm clothing, hat, scarf, gloves, thick socks
- Small rucksack, flask / water bottle
- Packed lunch container
- Sun cream, insect repellent

*These items can be borrowed at the Centre

Malham Tarn experiences an upland climate - at any season it can be bright and fine, but can also be cold, windy and wet. Some surfaces around the buildings are uneven and may be slippery. We recommend that you bring suitable warm and waterproof clothing, and strong waterproof footwear.

How to Book

Both provisional and confirmed bookings can be made via the FSC website at www.field-studies-council.org/malhamtarn or by completing the booking form located within the brochure. If you have any queries about the course, the centre, or would like to check availability before booking, please contact us on 01729 830331 or enquiries.mt@field-studies-council.org. Please note the booking conditions on the booking form, in the FSC Courses Brochure or on the FSC website.