



# DISCOVER MORE ABOUT LIFE IN FRESH WATERS

Join leading freshwater experts to discover the fascinating plants and animals that live in and around our lakes, ponds, rivers and streams

## Freshwater courses 2017

Sampling and identification courses  
with the freshwater specialists

We've a whole host of training days and courses lined up for 2017 so take a look and join us to explore life in fresh waters.

Our diverse range of courses are developed for freshwater enthusiasts and professionals.

## WHAT WILL YOU LEARN?

Instruction on how to use all scientific equipment is provided by our supportive course tutors. You will use a variety of guides and FBA specialist identification keys to help you get the most out of your course. No previous experience is required unless stated otherwise.

## ABOUT US

With 85 years of scientific expertise you know you'll be in good hands.

With an impressive history dating back to 1929, the FBA is proud to continue providing courses for the fresh water community.

## WHAT WE PROVIDE

-  Lunch and refreshments throughout the day unless stated
-  Field, site and lab equipment
-  Course materials

## WHAT YOU WILL NEED TO BRING

For field courses:

-  Wellies or waders for sampling
-  Outdoor gear: warm clothes/waterproofs/ sun hat & sun cream



*Ephemera danica*

## BOOK YOUR PLACE

Contact us at:

[events@fba.org.uk](mailto:events@fba.org.uk)

Tel. 015394 42468

or look up our latest freshwater course dates online

[www.fba.org.uk/courses](http://www.fba.org.uk/courses)

Our courses take place at our well-equipped laboratories on the shores of Windermere and on the River Frome near Wareham in Dorset, and at other locations around the UK.

## GIVE LIFE IN FRESH WATERS A FUTURE

**Are you a freshwater enthusiast or professional and want to learn more?**

By becoming a member of the FBA, you can gain further insights into the fascinating world of fresh waters

FBA members receive discounts on course fees. Annual membership starts from as little as £20 for a student or £41 for an individual.



## FBA member discount

Join the FBA as a student, corporate or individual member for discounts on our course fees.

Members are part of our freshwater community and can access our facilities, freshwater library, collections and publications.

## BESPOKE TUITION

We offer bespoke, tailored tuition for a wide range of courses including phytoplankton, Diptera, macrophytes and subterranean fauna, with flexible dates and venues, on site or at your own facilities.

## SUBTERRANEAN FAUNA

Learn how to sample and identify subterranean (stygobitic) malacostracan crustaceans. Includes sampling techniques, morphology and identification of this group whose hypogean habitats include boreholes, caves, wells, deep groundwater and the hyporheic.

Contact our training team to book this course or if you have any ideas for courses you would like to see included in future programmes please contact: [events@fba.org.uk](mailto:events@fba.org.uk) - Tel: 015394 42468

## THE CHIRONOMID PUPAL EXUVIAL TECHNIQUE (CPET)

Tutored by Les Ruse

Midges make monitoring manageable! Collecting and identifying chironomid midge pupal exuviae (skins) is easy and rewarding. Chironomid taxa composition and relative abundance are sensitive to physical and chemical changes in waterbodies.

The collection of floating chironomid pupal exuviae at the leeward shore of standing water bodies, or behind obstructions within flowing water, provides a simple and safe means of obtaining abundant macroinvertebrate data. Using the FBA guide to chironomid pupae assists amateur naturalists, anglers and professionals to easily produce inventories of their local waterbodies and to monitor sites. CPET provides a unique method of obtaining representative macroinvertebrate samples, it is particularly suitable for large waterbodies and is independent of the sampler because of its passive derivation.

Training will cover: sampling chironomid pupal exuviae from waterbodies, laboratory techniques and sample preparation, the morphology of chironomid pupae, identification of chironomid pupae to the level of the Wilson & Ruse FBA Guide and data analyses to assess water quality and Water Framework Directive ecological classification.

Les Ruse has been a biologist in the Water Industry for over 38 years and is now an Aquatic Ecologist for APEM Limited and a Research Fellow at Roehampton University. He researched the microdistribution and ecology of chironomid larvae in river substrata while under the tutelage of Ronald Wilson at Bristol University.

## CONTINUE YOUR LEARNING

You can order the authoritative FBA keys and guides used on our courses and a range of other freshwater publications online. [www.fba.org.uk/books](http://www.fba.org.uk/books)



*Ecdyonurus torrentis*

## SAMPLING AND IDENTIFYING FRESHWATER INVERTEBRATES

**Date:** Wednesday 15 - Thursday 16 March

**Tutor:** John Davy-Bowker

**Cost:** £220; early bird rate £205; FBA member £195

**Location:** FBA Windermere, Cumbria

This two day course will involve the collection and identification of aquatic invertebrates from running water habitats, and will feature sampling methods, bankside sorting and lab-based identification. John Davy-Bowker is a knowledgeable freshwater biologist with considerable research and teaching experience.

## IDENTIFYING LARVAL DRAGONFLIES AND DAMSELFLIES

**Date:** Wednesday 26 - Thursday 27 April

**Tutor:** Steve Cham

**Cost:** £220; early bird rate £205; FBA member £195

**Location:** FBA Windermere, Cumbria

This two day course focuses on the larval stages and exuviae (cast larval skins – important stages for proof of breeding) of British Odonata. It will include sampling methods, field and laboratory identification, and an overview of dragonfly ecology and life histories.

Steve Cham was the organiser of the Dragonfly Recording Network and one of the authors on the recent Dragonfly atlas. He is author of the 'Field guide to the larvae and exuviae of British dragonflies and damselflies'.

## ENTOMOLOGY FOR ANGLERS

The 'entomology for anglers' courses are split into three levels, which are designed as a progressive programme, so that participants can build up their knowledge over the different stages.

### ENTOMOLOGY FOR ANGLERS LEVEL 1

**Date:** Saturday 13 May

**Tutors:** Stuart Crofts & Andrew Dixon

**Cost:** £65

**Location:** FBA Windermere, Cumbria

The purpose of this course is to increase fly-fishers' understanding of entomology, which could make a big difference to their catch. Understanding the lifecycle of the flies that are being imitated helps better decisions to be made on what a fish is feeding on, when and where that type of food will be available, and how best to represent that food form.

The course will describe certain aspects of the natural fly which can be incorporated into imitations, explain why some flies are more significant than others and why some important flies are often neglected by anglers. It will also involve a field visit to a river site to collect some of the invertebrates the fly-fisher encounters and the fish could be feeding on. This will be followed by practical advice on how to identify them under the microscope. Anglers Stuart Crofts and Andrew Dixon, have both fished for England at national and international level and have studied entomology for many years.

For information on Level 2 and Level 3, please see pages 5 & 6.



*Esox Lucius*

## IDENTIFYING CHIRONOMID LARVAE

**Date:** Wednesday 17 - Thursday 18 May

**Tutor:** Steve Brooks

**Cost:** £220; early bird rate £205; FBA member £195

**Location:** FBA Windermere, Cumbria

There are about 600 species of chironomid midges in Britain. They can be found in all types of freshwater ecosystems, where they are often the most abundant insects. They are also sensitive indicators of environmental change and respond to a wide range of environmental perturbations including eutrophication, acidification, heavy metal pollution and climate change. Chironomid larval head capsules are also well preserved in lake sediments and can be used to make quantitative reconstructions of palaeoenvironmental change. The larval stage, however, has an unjustified reputation of being difficult to identify. For this reason, in routine biodiversity assessments and environmental impact assessments, identification of chironomid larvae is often not taken beyond family level. As a result, information on an important element of freshwater biodiversity and a key component of ecosystem functioning is lost.

This course will comprise a short lecture on chironomid biology, ecology, morphology and taxonomy followed by a tutored practical on preparation of chironomid samples for microscopical examination and guidance on identification of the larval stage of British and European species using reference slides and identification guides. Course participants will also be encouraged to bring their own chironomid samples and slides for the identification of difficult taxa.

Steve Brooks has research interests in freshwater insect ecology and taxonomy and environmental change. His research at the Natural History Museum, London, is currently focussed on Chironomidae where he has pioneered their use as palaeoecological indicators.

## IDENTIFYING MACROALGAE

**Date:** Wednesday 24 – Thursday 25 May

**Tutors:** Martyn Kelly & Allan Pentecost

**Cost:** £275; early bird rate £260; FBA member £250

**Location:** FBA Windermere, Cumbria

A two day course on how to recognise the larger freshwater algae. Field and laboratory-based exercises will introduce participants to the biology and identification of those freshwater algae most likely to be encountered during LEAFPACS and other freshwater surveys. An introduction to the use of macroalgae for rapid assessment will also be included. Martyn Kelly is a freelance consultant, specialising in the use of algae for environmental monitoring. Allan Pentecost, of the FBA, has studied algae for 50 years and has published many research papers and a book on algal ecology and taxonomy.



## ENTOMOLOGY FOR ANGLERS LEVEL 2

**Date:** Saturday 17 June

**Tutors:** Stuart Crofts & Andrew Dixon

**Cost:** £65

**Location:** FBA Windermere, Cumbria

The Level 2 course progresses a little deeper into the habits of the insects, and explains why anglers only need a small selection of artificials to cover all stages of the invertebrates found. Participants will learn why some patterns work better than others, and be shown how to identify some of the important invertebrates to at least family level. The course will be based on a similar format to Level 1 with Powerpoint presentations, practical demonstrations on some fly-fishing issues and another lab session using microscopes. The Level 2 course is open to those who have previously attended Level 1.

For information on Level 3 please see page 6.

## IDENTIFYING AQUATIC BEETLES

**Date:** Monday 10 - Tuesday 11 July

**Tutor:** Garth Foster

**Cost:** £220; early bird rate £205; FBA member £195

**Location:** FBA Windermere, Cumbria

This two day course will concentrate on the collection and identification of water beetles. The aim of the course is to increase confidence in beetle identification and will include: beetle morphology as used for identification, field survey techniques, the use of identification keys, microscope work, and some aspects of conservation. There will also be the opportunity to try out the Royal Entomological Society British water beetles handbook. Garth Foster is the coordinator for the Aquatic Coleoptera Recording Scheme for Britain and Ireland and has done nothing else for 50 years!

## IDENTIFYING CADDIS

Date: Wednesday 21 - Thursday 22 June

Tutor: Ian Wallace

Cost: £220; early bird rate £205; FBA member £195

Location: FBA Windermere, Cumbria

Caddis (Trichoptera) are a fascinating and varied group of insects that are used in water quality assessment. Participants will be shown various methods of collecting larvae, and at the end of the course they should be able to identify any caddis larva to family and also identify a range of species. Caddis adults are also significant in fly fishing and site assessment and for those students who so wish, there will be training in collecting and identifying that life stage. The course is aimed at biologists and naturalists who want to develop their knowledge of this group of insects. Ian Wallace is the national coordinator for the Trichoptera Recording Scheme, author of many guides to caddis including the FBA key to case-bearing caddis, and an Honorary Research Fellow of the FBA.

## INTRODUCTION TO PHYTOPLANKTON

Date: Wednesday 6 - Thursday 7 September

Tutor: Allan Pentecost

Cost: £220; early bird rate £205; FBA member £195

Location: FBA Windermere, Cumbria

This two day course will provide methods of collection, examination and identification of the common freshwater phytoplankton. The Lake District contains a great diversity of fresh waters and a wide range of material will be available for study. A field trip will be included and the lectures will cover both practical and theoretical aspects of phytoplankton ecology. Allan Pentecost, an Honorary Research Fellow at the FBA has been studying algae for 50 years and is currently involved in a number of research projects on the English Lakes.

## ENTOMOLOGY FOR ANGLERS

### LEVEL 3

Date: Saturday 30 September

Tutors: Stuart Crofts & Andrew Dixon

Cost: £65

Location: FBA Windermere, Cumbria

This course continues to build on the knowledge gained from Levels 1 & 2 and is open to those who have previously attended these levels. During the day we will continue to look in even greater depth and detail at the actual invertebrate food of the fish and how to progress with identification skills.

## RIVER INVERTEBRATE PREDICTION AND CLASSIFICATION SYSTEM (RIVPACS)/ RIVER INVERTEBRATE CLASSIFICATION TOOL (RICT) BIOASSESSMENT TRAINING

Date: Thursday 5 – Friday 6 October

Tutor: John Davy-Bowker

Cost: £350; early bird rate £335; FBA member £325

Location: FBA River Laboratory, Dorset

During this two-day course delegates can expect to gain a thorough theoretical and practical knowledge of the latest version of the RIVPACS/RICT bioassessment tool. Delegates will be able to produce biological assessments to similar standards as used by the regulatory authorities for Water Framework Directive compliance monitoring. The course will provide an introductory background to bioassessment, biotic indices, RIVPACS models and RICT, standardised RIVPACS kick/sweep sampling, collection of time variant environmental predictor variables, principles of standardised laboratory sample processing and enumeration to required taxonomic level(s)\*, collection of time invariant environmental predictor variables, manual calculation of observed biotic index values (examples of major indices currently in use in the UK), introduction to the latest web based RICT software and RIVPACS IV models, preparation of data input files, running RICT in classify, predict and compare modes, interpretation of RICT outputs, quality classes and diagnosis of stress. The course will include a demonstration of use of the RICT software. If you would like to the chance to practice using the software yourself, please bring a laptop. John Davy-Bowker is a knowledgeable freshwater biologist with considerable research and teaching experience, and part of the team continuing to develop the RIVPACS/RICT bioassessment tool.

\* Please note: this course does not cover invertebrate identification.

Some prior knowledge of river invertebrate sampling and the principles of invertebrate identification would be beneficial.



*Acilius sulcatus*

## FRESHWATER FISH: ASSESSMENT OF CONDITION AND AGEING

**Date:** Wednesday 11 October

**Tutor:** Roger Sweeting

**Cost:** £125; early bird rate £110; FBA member £100

**Location:** FBA Windermere, Cumbria

This course is aimed at fisheries managers, fishermen and naturalists who want to know more about the fish that they see, catch or handle. Without recourse to detailed dissection it is quite staggering how much we can piece together about a fish's well-being and condition, its age and growth, life history and sexual development. This course aims to provide an insight into the ways of observing fish for these purposes. Roger Sweeting has spent many years studying fish health and helping to develop an understanding of how to improve fisheries for Thames Water, the National Rivers Authority (NRA), the Environment Agency and the FBA.

## FISH HEALTH, PARASITES AND DISEASE

**Date:** Thursday 12 October

**Tutor:** Roger Sweeting

**Cost:** £125; early bird rate £110; FBA member £100

**Location:** FBA Windermere, Cumbria

This is a course for people wanting to understand more about the parasites and diseases of freshwater fish. It will include general principles of parasitology, fish physiology and some practical dissection and microscope work. Roger Sweeting has spent many years studying fish health and has a particular interest in fish parasitology.

## ACCREDITED COURSE INVERTEBRATE IDENTIFICATION FOR BIOTIC ASSESSMENT (including examination)

**Date:** Tuesday 7 - Thursday 9 November

**John Davy-Bowker, Melanie Fletcher, Simon Pawley**

**Cost:** £600; early bird rate £585; FBA member £575

**Location:** FBA Windermere, Cumbria

This three day course covers the identification of the freshwater macroinvertebrate families used for biotic assessment (BMW, RICT, WHPT etc.). It is aimed at professionals with experience of identification, who wish to consolidate their knowledge.

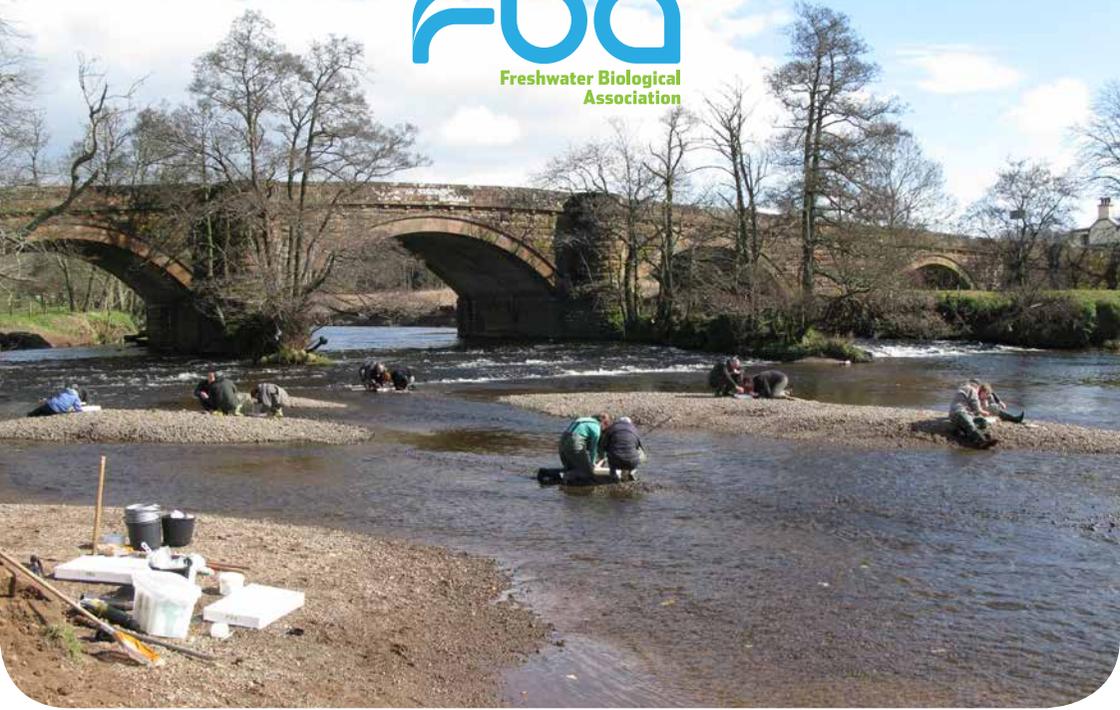
At the end of the course, participants will be examined on their identification skills and, if the required standard is attained, a certificate of competence in family- level invertebrate identification will be awarded.

This course is part of a series of FBA accredited invertebrate identification courses; future courses will allow participants to demonstrate their skills in taking individual groups of invertebrates to species level.

John Davy-Bowker is a knowledgeable freshwater biologist with considerable research and teaching experience. Melanie Fletcher and Simon Pawley are FBA staff who have taught on a range of FBA invertebrate identification courses.

Simon and Melanie are authors of the FBA publication SP67 Guide to British Freshwater Macroinvertebrates for Biotic Assessment, a copy of which is included in the course fee for each participant.





## BOOKING TERMS

Accommodation, travel guidance and directions will be sent with your booking pack. Courses may be altered or cancelled due to unforeseen circumstances. Please see the booking form for our terms and conditions.

Please note that courses will only run subject to sufficient participant uptake. Early bird rates apply to fees paid at least eight weeks before the start of the course. Please note that only one discount can be applied at any one time.

Before booking please visit [www.fba.org.uk/membership](http://www.fba.org.uk/membership) to take advantage of member discounts on course fees.

To keep up to date with our work, and fresh water insights you can also sign up to our **FREE** monthly Freshwater Matters E- Newsletter.

**There are more courses to be announced. Please visit our website for more dates.**



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