



# NMBAQC

NE Atlantic Marine Biological Analytical Quality Control Scheme

[www.nmbaqcs.org](http://www.nmbaqcs.org)

**Benthic Invertebrate Experts Taxonomic Workshops  
Guidelines for Presenters  
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## Background

The NMBAQC Scheme was originally set up to provide quality control/assurance to the macrobenthic invertebrate elements of the Clean Seas Environmental Monitoring Programme (CSEMP; formerly the NMMP); it has since provided the external quality assurance for statutory monitoring to report to Government and the EU. These reporting requirements have led to the NMBAQC diversifying into other marine biological elements. The various components of the Scheme are detailed on the [NMBAQC website](#).

The macrobenthic invertebrate component aims to improve the quality of macrobiota identification through practical workshops. Workshops are tailored to meet some of the current training needs reflected by participating laboratories in the Scheme.

The Scheme aims to host a taxonomic workshop each year. Workshops typically alternate between those designed for beginners and those aimed at experts (biologists with extensive prior experience of benthic invertebrate identification). Experts Workshops aim to:

- Update identification resources for benthic biologists and enthusiasts, for members of the taxonomic groups selected that may be found in temperate northeast Atlantic waters;
- provide a venue for relaxed, but effective and supportive training.

The notes below outline expected format and venue details and typical expectations from presenters for experts workshops.

### **Dates:**

Typically November, alternate years, but could vary depending on availability of venues or presenters.

### **Venue:**

A laboratory will be made available, with microscopes arranged on benches. There will be a demonstration area, with laptops and display screens, as well as demonstration microscopes with video links to the screens.

Participants will have access to microscopes and other equipment (forceps, dishes, alcohol, etc.) but may wish to bring their own laboratory microscopes and cold light sources (equipment requirements must be stated on the booking forms).

### **Organisers:**

[APEM Ltd.](#) on behalf of the Northeast Atlantic Marine Biological Analytical Quality Control (NMBAQC) Committee

### **Accommodation:**

Accommodation will be provided.

### **Pay:**

Expenses will be reimbursed. Please provide quotes for your time.

## Participants

There will be up to 30 participants from government, private and consultancy laboratories, potentially from throughout Europe. They will be familiar with identification of northeast Atlantic marine benthos, including species in the target groups, and will have an understanding of basic terminology and knowledge of many of the species recorded from the area.

## Format

The exact format will be decided by each demonstrator and draft ideas can be sent to APEM before the workshop, for discussion. A provisional timetable will be circulated before the workshop.

We would expect each day to begin with an electronic slide-based presentation; microscope (video link) views of specimens may be included, as appropriate. The demonstration should include an overview of basic biology and important identification features, followed by discussion of an updated identification guide or key, with detailed descriptions of species level differences.

There would also be time allocated for participants to view their own material and reference collection material provided. They will have the opportunity to ask questions during presentations and to ask for help with specimens during their microscope time. Each day would have about half the time used for demonstrations and half for participant microscope time (presenters to be available for both).

## Materials to be provided during the workshop

Expert presenters should produce a **provisional identification guide** to their taxonomic group that will be printed out for participants before the workshop (please send Word or PDF file to APEM in advance). The guide should include all species likely to be found in northeast Atlantic shelf waters. We suggest including all those recorded from north of the northern Portugal/Spain border and to include Norway and Iceland, to a depth of 500m (all depths if practicable), including brackish water species and non-natives (including any recorded as NNS in other temperate regions that may later be expected in northern Europe). The guide produced for the workshop itself will be provisional and expected to be revised at a later date (see below), so some parts could be highlighted for further work, or refer to published literature. The guide should also include a comprehensive bibliography of identification literature for the area; this has been partly done in the [Scheme literature list](#) and a partial update to this will also be provided by APEM but experts will be able to improve on these.

APEM will provide **reference specimens** for participants to examine during the workshop and participants will also be expected to bring some of their own material. Ideally, presenters should also send/bring specimens of other species for use. APEM will provide a list of species that we can make available, before the workshop.

## Outputs to be provided after the workshop

Participants and the Scheme will request that the **demonstration file** (the document(s) displayed on-screen during the presentation/s) is made available after the workshop.

The **provisional identification guide** should also be made available to participants, as an electronic file, after the workshop; this can be marked as provisional and not to be cited. A more **final version of the guide** should be provided later, for publication on the Scheme website. It is expected that the workshop will produce new records that will cause amendments to the identification guide and that further research will be needed to improve the guide in other ways. It is hoped that a version suitable for the Scheme website could be available about a year after the workshop. Examples of previous guides produced from Scheme workshops are available on the Scheme website [here](#). It would be reasonable for this version to become a basis for any later (peer reviewed) published work by the presenter. APEM will be available to help with reviews and edits to the guide at any time.