



**Course 'practicals' will cover:**

- 1) Application of age length keys.
- 2) Calculation of trawl survey abundance at age indices.
- 3) Production of maps using ICES DATRAS data and R. Plotting trawl tracks, scaled circles, overlaying bathymetry. Simple interpolation methods.
- 4) Statistical methods for assessing differences in trawl data from comparative surveys.
- 5) Calculation of EAFM type "indicators" (large fish, biodiversity, species richness, size at sexual maturity).
- 6) Simulations to show impact of confounding or non-random sampling.

**Course dates**

10-14 October 2011

**Training course materials**

- Data downloads from ICES databases esp. DATRAS (available to participants on the ICES website prior to the course)
- Lecture notes (will be made available to participants prior to the course)
- Presentations (will be made available to participants prior to and during the course)
- Analysis routines in R (will be made available to participants during the course)

**Venue**

International Council for the Exploration of the Sea  
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DK-1553 Copenhagen V

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[info@ices.dk](mailto:info@ices.dk)

You can find more information about:

ICES HQ [here](#)

Hotels close to ICES [here](#)

The hostel next to ICES [here](#)

**Fee**

The fee for the course is €500. This covers only tuition fees.

**Organization**

The course is organized by the ICES Secretariat as part of the ICES Training programme.

Doug Beare and Dave Reid, who both have extensive experience of trawl surveys, their analysis and use, will lead the course and provide course materials.

The course includes applied examples, case studies, and hand-on exercises on the computer.

Participants are required to bring their own laptops (Mac with virtualization is OK) to connect to the ICES network, and also to have R (freely downloadable from <http://www.r-project.org/>) installed prior to arrival.

**Admission and registration**

The course is designed for a maximum of 25 participants. The working language is English.

Please register online:

[www.ices.dk/iceswork/training/registration/](http://www.ices.dk/iceswork/training/registration/)

The deadline for the submission of applications is 26 August 2011.

**Programme**

The course will extend for five days. The morning sessions will consist of lectures on background and theory. The afternoons will be arranged as computer 'practicals' where trawl survey data analysis will be demonstrated using software such as Excel and R. During these afternoon sessions interaction among the course participants will be encouraged.

**Instructors**

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**Contact ICES Secretariat for more information**

Coordinator for Training

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