# **Training course**



Analysis and visualization of VMS and logbook data using the VMStools R package

## 23-27 October 2017

ICES HQ, Copenhagen, Denmark

## Register online www.ices.dk/training before 4 September

#### AIM

The objective of the course is to provide guidance on analysing VMS and logbook data, using the VMStools R software package. Emphasis will be placed on exploring the spatial distribution of fisheries, the behaviour of fishers and ecosystem impact indicators that can derived from these datasets. Students will be guided through the entire process of obtaining and cleaning VMS and logbook data, making plots & tables, shapefiles and combining the datasets to enable more advanced analyses such as dispatching the landings at higher spatiotemporal resolutions, calculating indicators (e.g. area of seabed fished) and linking VMS and logbook data to other spatial data in order to calculate potential impact of area closures on fishing fleets. Instruction will also be given in how to use VMStools to work with uncertainty in VMS analyses.

By the end of the course, the participants will be able to:

- Clean VMS and Logbook data
- Process the yearly ICES VMS & Logbook datacall
- Analyse fishing behaviour and apply gridding methods to map fishing activity
- Link VMS and logbook data and dispatch landings to the ping scale of VMS
- Calculate the economic impact of area closures
- Calculate indicators relevant for the MSFD, relating to benthic impact
- Link VMS data to habitat maps and other spatial datasets

### LEVEL

The course will be targeted at those with already some experience of VMS and logbook data, their analysis and mapping. Computer programming experience will be helpful and some knowledge of R is essential. We believe that the course would also benefit those currently analysing VMS data using GIS, since the combination of VMS tools and GIS can improve standardisation of analytical protocols.

#### **INSTRUCTORS**

- Niels Hintzen, Wageningen Marine Research, The Netherlands Niels.Hintzen@wur.nl
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## Download the VMStools package from www.vmstools.org