Making Maps with Open Data and Open Source Software
Hands on workshop using R and QGIS

Anja Eggert, 14 October 2024

You can download the R code here:

```
https://github.com/AnjaEggert/Workshop-ORDS-Meets-the-Sea-.git
```

We use following R libraries:

```
basic packages:
tidyverse    # tidy universe
viridis      # nice colours
readxl       # read Excel files, if needed

spatial packages we use:
rnaturalearth # vector data of the world
terra         # read raster data, also NetCDF
tidyterra     # plot terra raster objects
sf            # read vector data, also shapefiles
```

```
ggspatial    # adding scale bars and north arrows
icesDatras   # acces ICES survey data
icesVocab    # look up species codes

optional spatial packages:
ggmap        # also possible
osmdata      # retrieve OSM or Google maps
maps         # to make very basic maps
```

Please install the libraries if required:

```
# for instance the tidyverse package
install.packages("tidyverse")
```

We use following Open Source Data:

Data	QR-code	Short URL
Copernicus Marine Data Store: Baltic Sea		https://qrco.de/bfTkTE
IOW Baltic Sea topography		https://qrco.de/bfTU8U

IOWDB - the Oceanographic Database of IOW		https://qrco.de/bfTmnq
icesDatras R package on GitHub		https://qrco.de/bfTmgc
HELCOM Metadata catalogue: Baltic Sea Drainage Basin		https://qrco.de/bfTTXa
HELCOM Metadata catalogue: Baltic Sea Bathymetry		https://qrco.de/bfTUam
HELCOM Metadata catalogue: Baltic Sea Coastline		https://qrco.de/bfTTiA
Eurostat Data Browser: population size		https://qrco.de/bfTVxU