

# Making figures for RoM in R

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## Introduction

The main argument for using R to create RoM figures is to standardize figures across species and to do so while limiting repetitive work. This is a work in progress so any feedback on this document or the figures are highly appreciated!

This document contains instructions and code for creating the four types of basic plots that will be used in RoM, these will be described in their own sections below. I have chosen data for pike (*Esox lucious*) as an example, because it has all potential data for a RoM species (recreational, multiple areas, error bars etc.). These data have been uploaded on github: <https://github.com/maxlindmark/ROM>, and below is a piece of code that reads it into your session.

Prerequisites: 1) R-studio is strongly preferred as it allows you to work in so called projects where you can set a relative working directory. 2) Prepare your data so that it is structured in the same way as the example below.

It is an advantage if you know some Basic R. R-code is text with grey background. You can copy these chunks of code to a new R-script or directly into the console in R-studio.

## 1. Load libraries

```
rm(list = ls()) # clear the workspace from objects

# Provide package names
pkgs <- c("devtools", "ggplot2", "RCurl", "RCurl", "tidyr", "dplyr", "scales")

# Install packages
#install.packages(pkgs) # remove the hashtag if you already have them installed

# Load all packages
invisible(lapply(pkgs, function(x) require(x, character.only = T, quietly = T)))

# Print package version
x <- devtools::session_info(pkgs = pkgs)
x <- as.data.frame(x$packages)
x <- dplyr::filter(x, package %in% pkgs) %>%
dplyr::select(-`*`, -date, -source) %>%
dplyr::arrange(package)
x
```

```
##   package   version
## 1 devtools    1.13.6
## 2   dplyr      0.7.5
## 3 ggplot2     3.0.0
## 4   RCurl    1.95-4.10
## 5   scales     0.5.0
## 6   tidyr     0.8.1
```

## 2. Read in data

```
# Go to https://github.com/maxlindmark/ROM to view the data in the browser
dat <- read.csv(text
  = getURL("https://raw.githubusercontent.com/maxlindmark/ROM/master/pike.csv"),
  header = TRUE, sep = ";")

head(dat, 20)
```

	X.U.FEFF	Year	error	rec_plus	rec_minu	Lake	Ton
## 1		1997	NA	NA	NA	Stora sjöarna	115
## 2		1998	NA	NA	NA	Stora sjöarna	114
## 3		1999	NA	NA	NA	Stora sjöarna	149
## 4		2000	NA	NA	NA	Stora sjöarna	145
## 5		2001	NA	NA	NA	Stora sjöarna	121
## 6		2002	NA	NA	NA	Stora sjöarna	145
## 7		2003	NA	NA	NA	Stora sjöarna	129
## 8		2004	NA	NA	NA	Stora sjöarna	109
## 9		2005	NA	NA	NA	Stora sjöarna	94
## 10		2006	NA	NA	NA	Stora sjöarna	106
## 11		2007	NA	NA	NA	Stora sjöarna	106
## 12		2008	NA	NA	NA	Stora sjöarna	103
## 13		2009	NA	NA	NA	Stora sjöarna	96
## 14		2010	NA	NA	NA	Stora sjöarna	89
## 15		2011	NA	NA	NA	Stora sjöarna	88
## 16		2012	NA	NA	NA	Stora sjöarna	102
## 17		2013	NA	NA	NA	Stora sjöarna	89
## 18		2014	73	223	77	Stora sjöarna	104
## 19		2015	51	184	82	Stora sjöarna	82
## 20		2016	NA	NA	NA	Stora sjöarna	92

```
# Read in the palette we are going to use
pal <- c("#56B4E9", "#009E73", "#F0E442", "#0072B2", "#E69F00", "#D55E00")
```