

Adjusting Catch Curves

Load in Libraries

```
library(mizer)
library(mizerExperimental)
library(tidyverse)
library(rfishbase)
```

Load in Course Model

```
download.file("https://github.com/gustavdelius/mizerCourse/raw/master/build/cel_model_landings",
              destfile = "cel_model_landings.rds")
cel_model_course <- readParams("cel_model_landings.rds")
gear_params(cel_model_course)$yield_observed <- readRDS("celtic_yields.rds")
```

Fitting Parameters to Catch Curves into Tune Params

In tuneParams (), catchability, L50, L50/L25, w_mat, w_mat/w_mat25 were altered

```
download.file("https://github.com/gustavdelius/mizerCourse/raw/master/build/catch.csv",
              destfile = "catch.csv")
catch_lengths <- read.csv("catch.csv")
#cel_model_adjusted_catch_curves<-tuneParams(cel_model_course, catch = catch_lengths)
#saveParams(cel_model_adjusted_catch_curves, "cel_model_adjusted_catch_curves.rds")
cel_model_adjusted_catch_curves<-readParams("cel_model_adjusted_catch_curves.rds")

#tuneParams(cel_model_adjusted_catch_curves, catch = catch_lengths)
```

Now compare the reproduction levels between the two models

```
cel_model_adjusted_catch_curves_res <- setBevertonHolt(cel_model_adjusted_catch_curves, erepro, R_max)

species_params(cel_model_adjusted_catch_curves_res) |> select(erepro, R_max)
```

	erepro	R_max
Herring	0.001	3.727871e-01
Sprat	0.001	8.669463e-01
Cod	0.001	6.447236e-05
Haddock	0.001	2.862750e-04
Whiting	0.001	5.538591e-04
Blue whiting	0.001	2.427289e-01
Norway Pout	0.001	1.711662e-01
Poor Cod	0.001	1.649813e-03
European Hake	0.001	1.598655e-03
Monkfish	0.001	1.131738e-04
Horse Mackerel	0.001	8.770700e-02
Mackerel	0.001	1.391732e-02
Common Dab	0.001	1.341552e-03
Plaice	0.001	2.643625e-04
Megrim	0.001	7.364841e-03
Sole	0.001	2.434877e-04
Boarfish	0.001	1.176877e-01

```
cel_model_course_res_tuning <- setBevertonHolt(cel_model_course, erepro = 0.001)

species_params(cel_model_course_res_tuning) |> select(erepro, R_max)
```

	erepro	R_max
Herring	0.001	0.3369135240
Sprat	0.001	0.9592472746
Cod	0.001	0.0000653820
Haddock	0.001	0.0003347841
Whiting	0.001	0.0005564558
Blue whiting	0.001	0.2309752956
Norway Pout	0.001	0.2055672725
Poor Cod	0.001	0.0017380261
European Hake	0.001	0.0016200795
Monkfish	0.001	0.0001134333
Horse Mackerel	0.001	0.0898418890
Mackerel	0.001	0.0139503716
Common Dab	0.001	0.0013293500

Plaice	0.001	0.0002653793
Megrim	0.001	0.0075371245
Sole	0.001	0.0002506685
Boarfish	0.001	0.1340020866

Both models have similar erepro values and R_max values