R documentation

of 'man/FLCatch.Rd'

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FLCatch *Class for FLFishery catch data*

Description

Catch data for a single species or stock unit is handled by the FLCatch class. Data is separated as landings and discards by age, in numbers, with the corresponding mean weights at age.

Details

This is class is used inside FLFishery to store the catch data for species caught by a single fleet.

Slots

name: Name of the object, e.g. species or stock code, (character).

desc: Description of the data contents and origin, (character).

range: Ranges of age and years, plusgroup, (numeric).

landings.n: Landings at age in numbers, (FLQuant).

landings.wt: Mean weight-at-age in the landings, (FLQuant).

discards.n: Discards at age in numbers, (FLQuant).

discards.wt: Mean weight-at-age in the discards, (FLQuant).

catch.sel: Selectivity at age as proportions over fully-selected ages, (FLQuant).

price: Mean price by age per unit of weight, (FLQuant).

catch.q: Parameters of the catchability function, (FLPar).

Validity

Length of dimensions 2:5 All FLQuant slots must share dimensions 2 to 5.

iter **dim of length 1 or N** The 6th dimension in all FLQuant and FLPar slots must be 1 or N, where N is the same value for the whole object.

Length of dimensions 2:5 All FLQuant slots must share dimensions 2 to 5.

You can inspect the class validity function by using getValidity(getClassDef('FLCatch'))

Accessors

All slots in the class have accessor and replacement methods defined that allow retrieving and substituting individual slots.

The values passed for replacement need to be of the class of that slot. A numeric vector can also be used when replacing FLQuant slots, and the vector will be used to substitute the values in the slot, but not its other attributes.

Constructor

A construction method exists for this class that can take named arguments for any of its slots. All slots are then created to match the requirements of the class validity. If an unnamed `FLQuant` object is provided, this is used for sizing but not stored in any slot.

Methods

Methods exist for various calculations based on values stored in the class:

`landings` Total landings as sum on 'age' of `landings.n` times `landings.wt`.

`discards` Total discards as sum on 'age' of `discards.n` times `discards.wt`.

landings.sel: Selectivity at age in the landings as proportions over fully-selected ages, (`FLQuant`).

discards.sel: Selectivity at age in the discards as proportions over fully-selected ages, (`FLQuant`).

`catch.n` Catch at age in numbers as `landings.n` plus `discards.n`.

`catch.wt` Weighted average of `landings.wt` and `discards.wt`.

`catch` Total catch as sum of `landings` and `discards`.

`discards.ratio` Proportion at age of discards in catch.

`plot` Standard plot for the FLCatch class.

Author(s)

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See Also

FLCatches, FLFishery

Examples

```
data(ple4)

# EXTRACT data from FLCore ple4, fake prices
fca <- FLCatch(name='PLE', desc='All NS PLE catches',
  landings.n=landings.n(ple4), landings.wt=landings.wt(ple4),
  discards.n=discards.n(ple4), discards.wt=discards.wt(ple4),
  price=landings.wt(ple4) * 23, catch.q=FLPar(q=1),
  catch.sel=catch.sel(ple4))

# Calculations
landings(fca)

catch.n(fca)
catch.wt(fca)
```

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