

Stock Assessment Graphs Web Services and the icesSAG R package

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Demonstration of current developments

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<http://sg.ices.dk>



Science for sustainable seas

What is a web service?



Tablet



Website



Tablet

Give me a list of products



Website



Tablet

Give me a list of products



Sure, here they are



Website





Stock Assessment Graphs web services

Installation



```
# install from CRAN  
install.packages("icesSAG")  
  
# install from github  
# - requires devtools package  
# install.packages("devtools")  
devtools::install_github("ices-tools-prod/icesSAG")  
  
# install from github - the development version  
devtools::install_github("ices-tools-prod/icesSAG@development")
```











STOCK ASSESSMENT GRAPHS

[Stock assessment graphs](#) > Meta database

Below you can see which data are available in the current database. You can choose to:

- [Upload data](#)
- To view new graphs and tables from available data, click on the stock code in the table below. NB Graphs and tables cannot be updated once they have been published.
- Access [webservices](#), these allow the user to perform operations like view, edit and upload stocks. To access webservices the user needs to create a [token](#).
- View list of available [charts](#) and available [chart settings](#), this allow the user to perform operations like view, edit and upload stocks.

Summary of the data available for:

Published FishStock	Relative or Absolute	Low	Hlgh	R	Low	High	TSB	Low	High	SSB	Catches	OfficialLandings	Landings	Discards	IBC	Unallocated Removals	YieldSSB	Low	High	F	F	F	F	Unallocated	SoP
																				Landings	Discards	IBC	Unallocated		
 allf.27.nea	A	Y	Y	Y	N	N	N	Y	Y	Y	Y	N	N	N	N	N	N	Y	Y	Y	N	N	N	N	N
 hll.27.22-32	A	N	N	N	N	N	N	N	Y	Y	N	N	Y	Y	N	N	N	N	N	N	N	N	N	N	N
 cod.27.1-2	A	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y	N	N	N	N	Y	Y	Y	N	N	N	N	N
 cod.27.1-2coast	A	N	N	Y	N	N	N	N	N	Y	N	N	Y	N	N	N	N	N	N	Y	N	N	N	N	N
 cod.27.21	R	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	N	N	N	Y	Y	Y	N	N	N	N	N
 cod.27.22-24	A	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	N	N	N	Y	Y	Y	N	N	N	N	N
 cod.27.25-32	A	N	N	Y	N	N	N	N	N	Y	Y	N	Y	Y	N	N	N	N	N	Y	N	N	N	N	N
 dab.27.22-32	A	N	N	N	N	N	N	N	Y	Y	N	N	Y	Y	N	N	N	N	N	N	N	N	N	N	N
 fle.27.2223	A	N	N	N	N	N	N	N	Y	Y	N	N	Y	Y	N	N	N	N	N	N	N	N	N	N	N
 fle.27.2425	A	N	N	N	N	N	N	N	Y	Y	N	N	Y	Y	N	N	N	N	N	N	N	N	N	N	N

Name	getListStocks(year)
Description	This API of the webservice returns the list of all the fishstocks found in the database.
Input	The year of the assessment. If the year is 0 then it will return all the assessment years If there are no matches, an empty result set will be returned.
Output	Returns the year of the assessment, the species , the fishstock nam, the ecoregion and the key of the fishstocks/assessment year.
Example	Example to get the list of all the stocks Example to get the list of all the stocks in 2013

getListStocks



```
meta <- getListStocks(2017)
```

getListStocks



```
meta <- getListStocks(2017)  
  
## GETing ... http://sg.ices.dk/StandardGraphsWebServices.aspx/getListStocks?year=2017
```

```
meta <- getListStocks(2017)

## GETing ... http://sg.ices.dk/StandardGraphsWebServices.asmx/getListStocks?year=2017

str(meta)

## 'data.frame': 9 obs. of 8 variables:
## $ AssessmentKey : int 8646 8229 8231 8235 8230 8199 8200 8201 8118
## $ StockKeyLabel : chr "cap-icel" "san.sa.1r" "san.sa.2r" "san.sa.3r" ...
## $ StockDatabaseID : int NA 1442 1443 1444 1445 1446 1447 1448 NA
## $ StockKey : int 136507 169246 169247 169248 169249 169250 169251 169252 136696
## $ StockDescription: chr "Capelin (Mallotus villosus) in Subareas V and XIV and Division IIa west
## $ Status : chr "Not Published" "Published" "Published" "Published" ...
## $ AssessmentYear : int 2017 2017 2017 2017 2017 2017 2017 2017 2017
## $ SpeciesName : chr "Mallotus villosus" "Ammodytes" "Ammodytes" "Ammodytes" ...
```

getListStocks



```
## meta <- getListStocks(2017)
meta[!names(meta) %in% "StockDescription"]
```

```
##      AssessmentKey StockKeyLabel StockDatabaseID StockKey      Status AssessmentYear
## 1           8646      cap-icel             NA    136507 Not Published      2017
## 2           8229      san.sa.1r           1442    169246 Published      2017
## 3           8231      san.sa.2r           1443    169247 Published      2017
## 4           8235      san.sa.3r           1444    169248 Published      2017
## 5           8230      san.sa.4           1445    169249 Published      2017
## 6           8199      san.sa.5r           1446    169250 Published      2017
## 7           8200      san.sa.6           1447    169251 Published      2017
## 8           8201      san.sa.7r           1448    169252 Published      2017
## 9           8118      sbr-x             NA    136696 Not Published      2017
```

```
##      SpeciesName
## 1 Mallotus villosus
## 2      Ammodytes
## 3      Ammodytes
## 4      Ammodytes
## 5      Ammodytes
## 6      Ammodytes
## 7      Ammodytes
## 8      Ammodytes
## 9 Pagellus bogaraveo
```

[Stock assessment graphs](#) > [Meta database](#) > [Upload data](#) > View graphs and tables

[Download graphs and tables \(pdf\)](#)

[Download standard graphs \(xsl\)](#)

[Download Stock data \(XML\)](#)

[View source data](#)

[Edit graphs and tables](#)

[Reset stock settings](#)

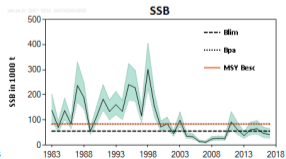
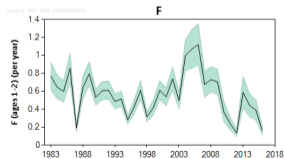
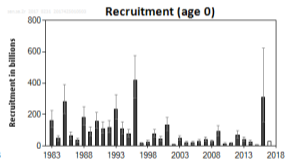
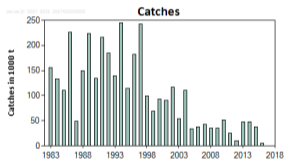
[Delete this stock](#)

[Delete current year recruitment value](#)

[Delete current year SSB value](#)

Sandeel (*Ammodytes* spp.) in Divisions 4.b and 4.c, and Subdivision 20, Sandeel Area 2r (Skagerrak, central and southern North Sea)
([Link to advice](#))

Species: Ammodytes
Stock code: san.sa.2r
Assessment Year: 2017
Key: 8231
Data Category: 1



getSummaryTable



```
tab <- getSummaryTable(8231)[[1]]

## GETing ...
http://sg.ices.dk/StandardGraphsWebServices.asmx/getSummaryTable?assessmentKey=8231

head(tab, 2)

##   Year recruitment high_recruitment low_recruitment low_SSB      SSB high_SSB catches
## 1 1983   162210394           223649584       117649277   95188 138790   202365   155664
## 2 1984    47524155           66025479        34207178   53026  70349    93331   133343
##   landings discards low_F      F high_F StockPublishNote Fage fishstock recruitment_age
## 1      NA      NA 0.611 0.766  0.922 Stock published 1-2 san.sa.2r              0
## 2      NA      NA 0.513 0.645  0.777 Stock published 1-2 san.sa.2r              0
##   AssessmentYear  units stockSizeDescription stockSizeUnits fishingPressureDescription
## 1           2017 tonnes                SSB          tonnes                      F
## 2           2017 tonnes                SSB          tonnes                      F
##   fishingPressureUnits
## 1           per year
## 2           per year
```

getFishStockReferencePoints



```
getFishStockReferencePoints(8231)
```

```
## GETing ...
```

```
http://sg.ices.dk/StandardGraphsWebServices.asmx/getFishStockReferencePoints?assessmentKey=8231
```

```
## [[1]]
```

##	AssessmentKey	StockKeyLabel	StockDatabaseID	StockKey	AssessmentYear	FLim	Fpa	Bpa	Blim
## 1	8231	san.sa.2r	1443	169247	2017	NA	NA	84000	56000
##	FMSY	MSYBtrigger	Fmanagement	Bmanagement	RecruitmentAge	RecruitmentLength			
## 1	NA	NA	NA	NA	0	NA			

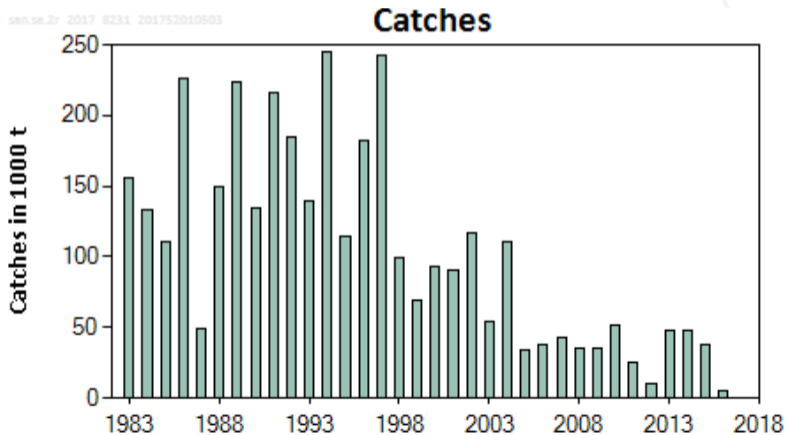
getLandingsGraph



```
chart <- getLandingsGraph(8231)
```

```
## GETing ...
```

```
http://sg.ices.dk/StandardGraphsWebServices.asmx/getLandingsGraph?assessmentKey=8231
```



Uploading the final assessment

Setting up the data



```
info <- stockInfo(StockCode = "whb.27.1-91214",
                  AssessmentYear = 2010,
                  ContactPerson = "colin.millar@ices.dk",
                  CustomSeriesName1 = "Recreational Catch",
                  CustomSeriesUnits1 = "tonnes")

str(info)

## List of 6
## $ StockCode      : chr "whb.27.1-91214"
## $ AssessmentYear : num 2010
## $ ContactPerson  : chr "colin.millar@ices.dk"
## $ CustomSeriesName1 : chr "Recreational Catch"
## $ CustomSeriesUnits1 : chr "tonnes"
## $ NameSystemProducedFile: chr "icesSAG R package"
```

Setting up the data

```
fishdata <-  
  stockFishdata(  
    Year = 1984:2010,  
    Landings = 103 * exp(cumsum(rnorm(27, sd = 0.1))),  
    Discards = 500,  
    CustomSeries1 = 100  
  )  
head(fishdata)
```

```
##   Year Landings Discards CustomSeries1  
## 1 1984 1165.193     500           100  
## 2 1985 1327.934     500           100  
## 3 1986 1455.369     500           100  
## 4 1987 1378.445     500           100  
## 5 1988 1268.053     500           100  
## 6 1989 1033.715     500           100
```

Uploading the data



```
# upload to SAG (with some checking by DATSU on the way
options(icesSAG.use_token = TRUE)
options(icesSAG.messages = FALSE)
key <- uploadStock(info, fishdata)

## Converting to XML format ...
## Done
## Uploading ...
## Success: (200) OK
## Screening file ...
## Success: (200) OK
## Importing to database ...
## Done
## Upload complete! New assessmentKey is: 8651
## To check upload run (with 'options(icesSAG.use_token = TRUE)'):
## findAssessmentKey('whb.27.1-91214', 2010, full = TRUE)

key

## [1] 8651
```

Checking upload



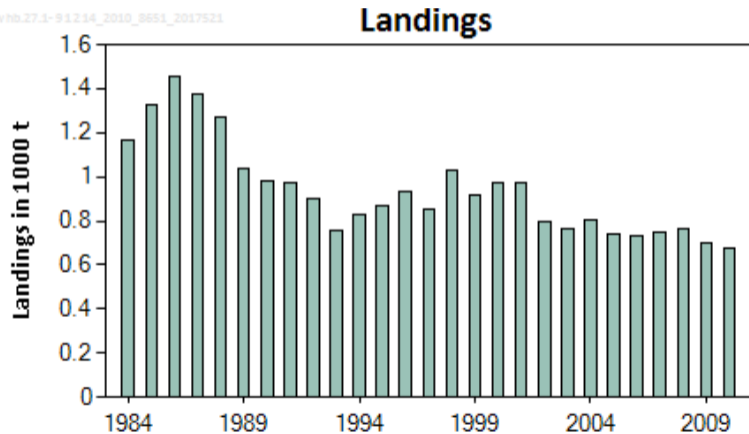
```
# look at data
tab <- getSummaryTable(key)[[1]]
tab <- tab[!apply(tab, 2, function(x) all(is.na(x)))]
head(tab)
```

##	Year	landings	discards	StockPublishNote	fishstock	AssessmentYear	units
## 1	1984	1165	500	Stock not published	whb.27.1-91214	2010	tonnes
## 2	1985	1328	500	Stock not published	whb.27.1-91214	2010	tonnes
## 3	1986	1455	500	Stock not published	whb.27.1-91214	2010	tonnes
## 4	1987	1378	500	Stock not published	whb.27.1-91214	2010	tonnes
## 5	1988	1268	500	Stock not published	whb.27.1-91214	2010	tonnes
## 6	1989	1034	500	Stock not published	whb.27.1-91214	2010	tonnes

getLandingsGraph

```
chart <- getLandingsGraph(key)
```

wfb.27.1-91214_2010_8651_2017521



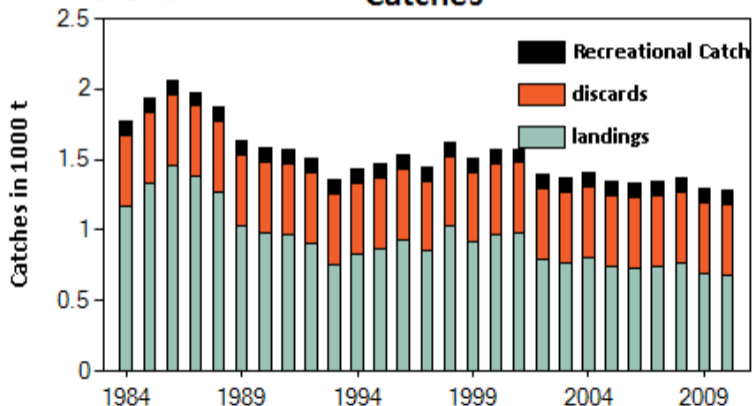
Modifying chart settings

setSAGSettingForAStock

```
setSAGSettingForAStock(key, chartKey = 1, settingKey = 43,  
                        settingValue = 1, copyNextYear = FALSE)  
chart <- getLandingsGraph(key)
```

whb.27.1-91214_2010_8651_2017521

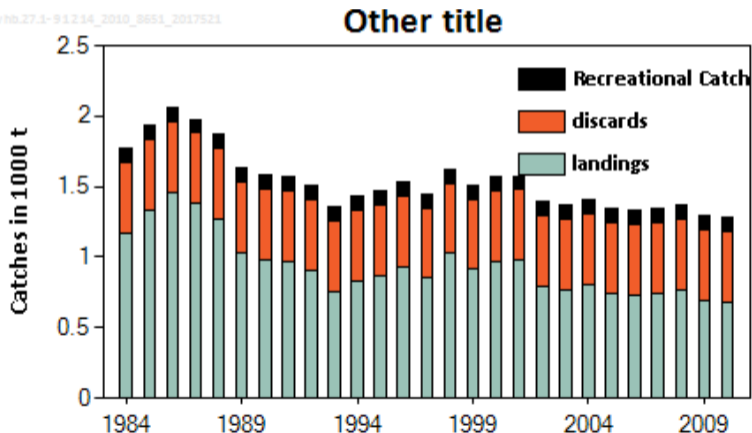
Catches



setSAGSettingForAStock

```
setSAGSettingForAStock(key, chartKey = 1, settingKey = 1,  
                        settingValue = "Other title", copyNextYear = FALSE)  
chart <- getLandingsGraph(key)
```

whb.27.1-91214_2010_8651_2017521



sg.ices.dk/manage/ListSettings.aspx

STOCK ASSESSMENT GRAPHS

[Stock assessment graphs](#) > [Meta database](#) > List of available settings

List of available settings per chart

Landings ▼

ChartKey	TypeSettingKey	Description
1	1	Change the title of a Standard Graph
1	4	Define a new minimum of Y axis
1	6	Define a new maximum of Y axis
1	9	Define the interval between labels of the Y axis
1	11	Define the interval between labels of the X axis
1	26	Present catches (ICES landings, discards, IBC and unallocated)
1	14	Unshade one or more years
1	20	Change the legend of Y-Axis
1	21	Add comment to the database
1	22	Do not show item
1	43	Present catches (ICES landings, discards, IBC and unallocated, Custom field)
1	32	Present catches instead of landings
1	2	Define a new minimum of X axis
1	5	Define a new maximum of X axis
1	52	Move legend to the left

View the list of Charts [here](#)

Follow ongoing development

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Branch: master icesSAG / README.md Find file Copy path


arnima-github Simplify web links fac92d8 on Feb 22

3 contributors

63 lines (44 sloc) 1.93 KB Raw Blame History

build passing codecov 7% release v1.2-0 CRAN 1.2-1 downloads 1496 license GPL (>= 2)

icesSAG



icesSAG provides R functions that access the [web services](#) of the [ICES Stock Assessment Graphs](#) database.

icesSAG is implemented as an [R package](#) and available on [CRAN](#).

Installation

icesSAG can be installed from CRAN using the `install.packages` command:

```
install.packages("icesSAG")
```



Follow ongoing development on GitHub.com



github.com/ices-tools-prod/icesSAG

R package source code

github.com/ices-tools-prod/icesSAG/projects/1

SAG web service and R package development board

github.com/ices-tools-prod/icesSAG/projects/2

SAG web page development board

github.com/ices-tools-prod/icesSAG/issues

Post suggestions or bugs in R packages

R packages supporting stock assessment workflow



Web services

- icesDatras** trawl survey database
- icesSAG** stock assessment graphs
- icesSLD** stock database
- icesVocab** reference codes

Other

- icesAdvice** advisory methods
- icesTAF** support functions



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<http://sg.ices.dk/webservices.aspx>