Transparent Assessment Framework

Status Update

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ACOM Meeting
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http://taf.ices.dk

Science for sustainable seas

Aim

To implement a framework to organize data, methods, and results used in ICES assessments, so they are easy to find and rerun later with new data.

TAF Plan

2016–2018

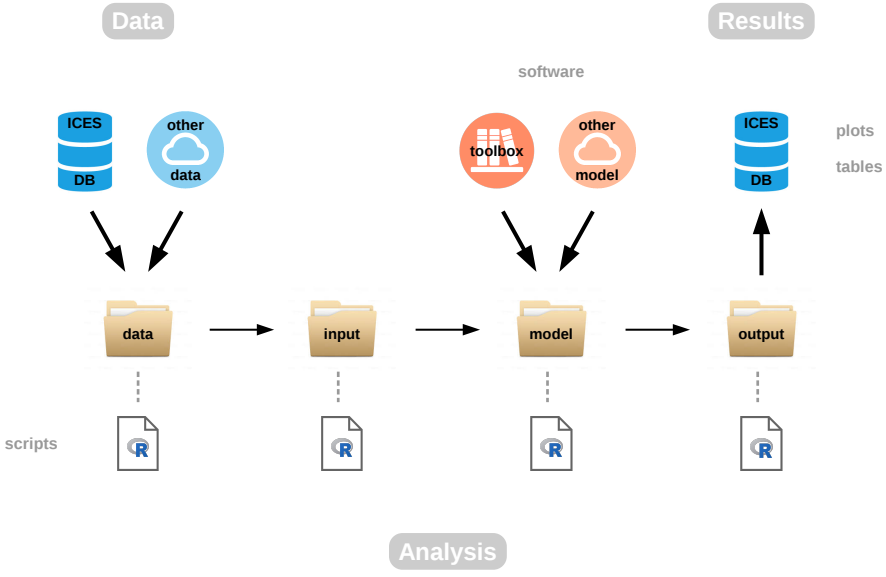
- Design
  - ✓ *Scientists write standard R scripts that prepare data and run analysis*
- Implementation
  - ✓ *R packages: work with ICES databases, core TAF functions*
  - ✓ *Web interface where users can browse, modify, and run assessments*
  - ✓ *Example stocks demonstrate workflow: input, model, output*

2018–2020

- Training

  Introductory videos, user documentation, collaboration with EGs, support
- Deployment

  ICES assessments enter TAF gradually, around EG meetings and benchmarks


Data
Results
software
ICES
DB
other
data
toolbox
other
model
ICES
DB
plots
tables
data
input
model
output
scripts
Analysis

Workflow scripts

Core

data.R - Preprocess data, write TAF data tables

input.R - Convert data to model format, write model input files

model.R - Run analysis, write model results

output.R - Extract results of interest, write TAF output tables

Also

report.R - Prepare plots/tables for report

upload.R - Upload raw data or model files

Example stocks

Completed and online

- North Sea spotted ray
- Icelandic haddock
- Eastern Channel plaice
- North Sea cod

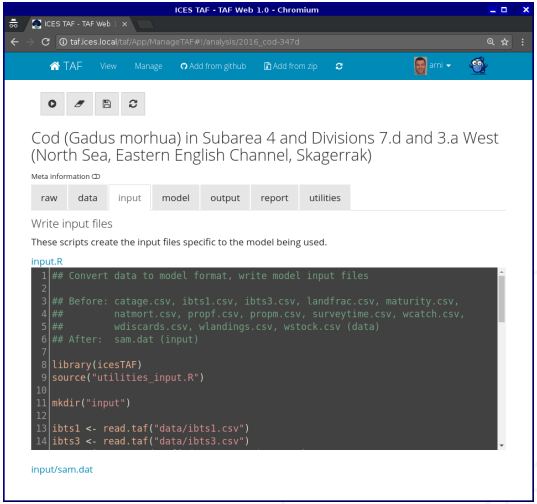
In progress

- Icelandic ling

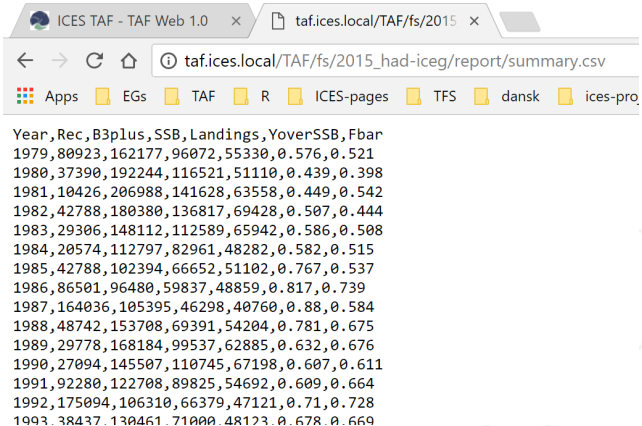
Planned

- North Sea herring

View, edit and run R code online



Inputs and results available to view or download



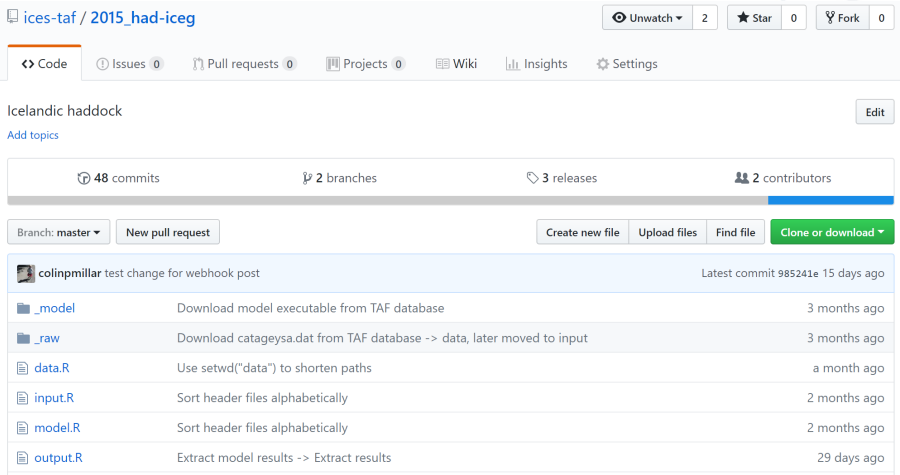
And can be easily read into R

R Console (32-bit)

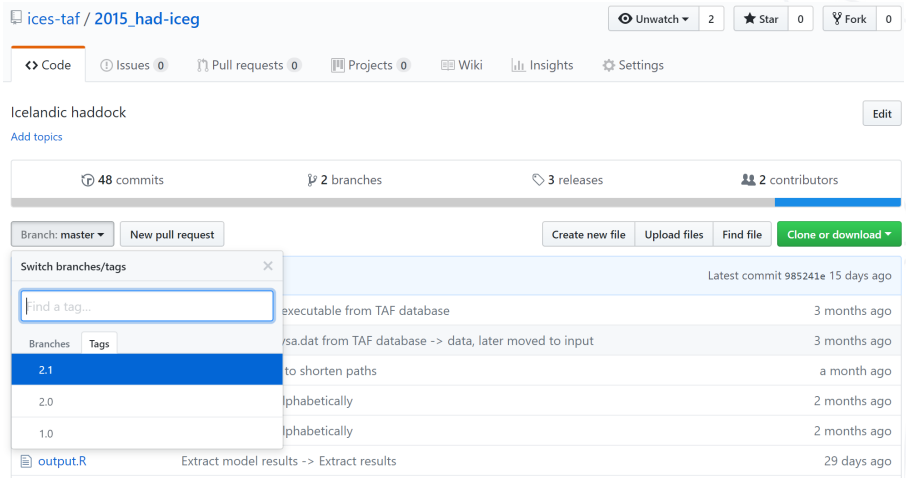
File Edit Misc Packages Windows Help

```
R is a collaborative project with many contributors.
Type 'contributors()' for more information and
'citation()' on how to cite R or R packages in publications.

Type 'demo()' for some demos, 'help()' for on-line help, or
'help.start()' for an HTML browser interface to help.
Type 'q()' to quit R.

> read.csv("http://taf.ices.local/TAF/fs/2015_had-iceg/report/summary.csv")
          Year    Rec B3plus    SSB Landings YoverSSB  Fbar
1         1979  80923 162177  96072    55330    0.576 0.521
2         1980  37390 192244 116521    51110    0.439 0.398
3         1981  10426 206988 141628    63558    0.449 0.542
4         1982  42788 180380 136817    69428    0.507 0.444
5         1983  29306 148112 112589    65942    0.586 0.508
6         1984  20574 112797  82961    48282    0.582 0.515
7         1985  42788 102394  66652    51102    0.767 0.537
8         1986  86501  96480  59837    48859    0.817 0.739
9         1987 164036 105395  46298    40760    0.880 0.584
10        1988  48742 153708  69391    54204    0.781 0.675
11        1989  29778 168184  99537    62885    0.632 0.676
12        1990  27094 145507 110745    67198    0.607 0.611
```

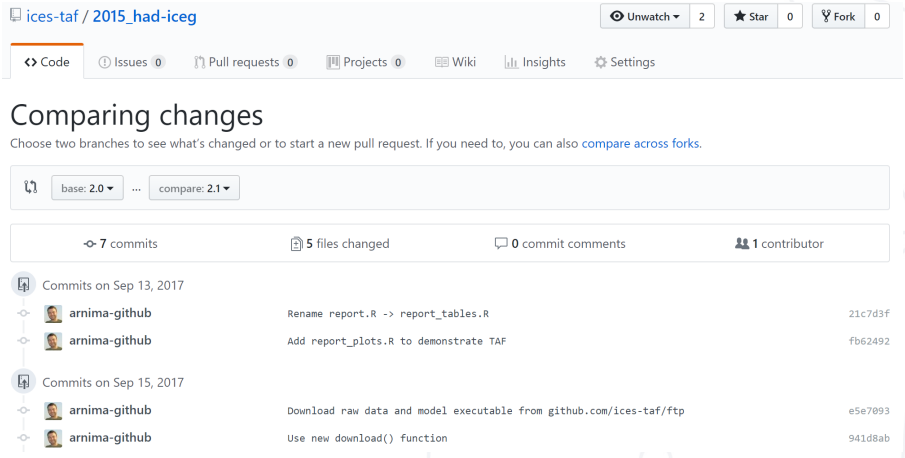
Published assessments accessible on GitHub



Bookmark (tag) stages, i.e. end of EG, end of ADG



List code changes between stages or between years



View code changes between stages or between years

Showing 5 changed files with 86 additions and 10 deletions.

Unified | Split

2 data.R — View

```
@@ -9,7 +9,7 @@ source("utilities.R")
 mkdir("data")
-url <- "http://taf.ices.local/taf/fs/2015_had-iceg/raw/"
+url <- "https://raw.githubusercontent.com/ices-taf/ftp/master/nwwg/2015/had-iceg/raw/"
 ## Download data, this file will later be moved to input
 download.file(paste0(url,"catageysa.dat"), "data/catageysa.dat", quiet=TRUE)
```

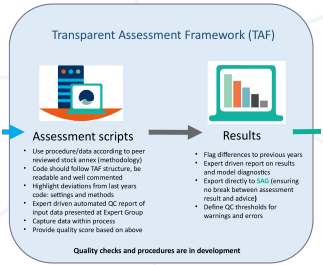
5 model.R — View

```
@@ -7,12 +7,11 @@ library(icesTAF)
 mkdir("model")
-url <- "http://taf.ices.local/taf/fs/2015_had-iceg/model/"
```

Quality Control

- Code should follow TAF structure, be readable and well commented
- Highlight changes from last year: code, settings, methods, data and results
- Expert driven QC reports covering inputs, results and model diagnostics
- Define QC thresholds to flag warnings
- Directly connecting DBs → assessment → SAG (advice)
- Provide quality score

TIC-TAQ



Links to other projects

Fishing Pressure - Shapefiles for OSPAR and HELCOM - links to VMS DB

VMS data QC - Country level QC reports linking to VMS DB

TIC-TAQ* - Tools for ICES Control of Technical (products) and Assessment Quality

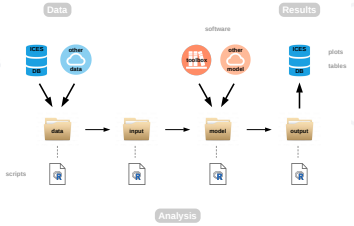
SmartDots* - Workshop report via R markdown linking to SmartDots DB

OSPAR MIME* - Webpages summarising station level environmental assessment

* under development

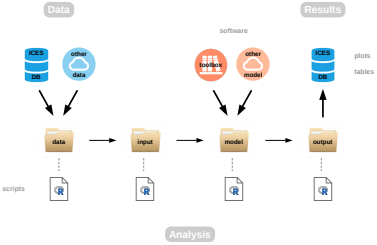
Benefits

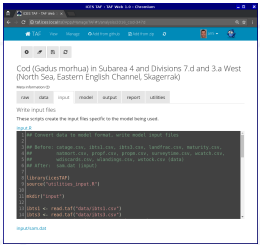
- Easy to find data and results from final assessment
- Open and reproducible science, improved quality control
- Easy for scientists around the world to get ICES data
- Easy to run an update assessment next year
- If scientist changes jobs, next person can take over
- Existing and future tools can use TAF services



ACOM perspective and role

- Guidelines on stock assessment workflow
- Communicate upcoming changes to experts
- Instill a sense of ownership and highlight benefits





Thanks!

Questions?

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http://taf.ices.dk