

# Transparent Assessment Framework (ICES TAF)

Arni Magnusson  
Colin Millar

GFCM, Rome  
11 December 2018



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.*

# Fisheries advice



## At home institutes

- ▶ *Scientists*: analyze **data**, finalize **model**, tabulate and plot **results**

## At ICES

- ▶ *Expert group*: review results, write **report** and draft **advice**
- ▶ *Advice drafting group*: review the **advice**
- ▶ *Advisory committee* finalize and release **advice**

# Fisheries advice

## North Sea spotted ray



*Greater North Sea Ecoregion*

*Published 9 October 2015*

### **6.3.47 Spotted ray (*Raja montagui*) in Subarea IV and Divisions IIIa and VIId (North Sea, Skagerrak, Kattegat, and eastern English Channel)**

#### **ICES stock advice**

ICES advises that when the precautionary approach is applied, landings should be no more than 291 tonnes in each of the years 2016 and 2017. Discarding is known to occur, but is variable and quantities of dead discards have not been estimated.

# Fisheries advice

## North Sea spotted ray



### Basis of the assessment

**Table 6.3.47.4** Spotted ray in Subarea IV and Divisions IIIa and VIId. The basis of the assessment.

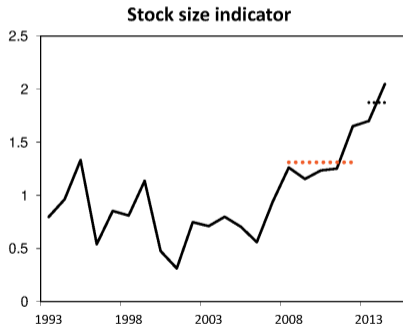
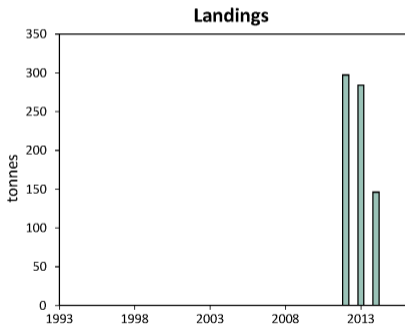
ICES stock data category	3.2 ( <a href="#">ICES, 2015a</a> ).
Assessment type	Survey-trends (ICES, 2015b).
Input data	Annual landings since 2012. IBTS Q1 and Q3 Survey, UK-7d Beam trawl survey.
Discards and bycatch	Unknown.
Indicators	None.
Other information	Life history.
Working group	Working Group on Elasmobranch Fishes ( <a href="#">WGEF</a> ).

# Fisheries advice

## North Sea spotted ray

### Stock development over time

There is insufficient information to present historical trends in species-specific landings for this stock. The stock size indicator has increased continuously during the last decade.



### Summary of the assessment

**Table 6.3.47.8** Spotted ray in Subarea IV and Divisions IIIa and VIId. Assessment summary. The annual combined stock size indicator is calculated as the average across surveys (all indices in  $\text{hr}^{-1}$ ), where each individual survey index has been previously scaled to its long-term average.

Year	IBTS Q1	IBTS Q3	UK BTS Q3	Combined stock size indicator
1993	0.45	0.73	1.22	0.80
1994	0.40	1.15	1.34	0.96
1995	0.94	0.37	2.69	1.33
1996	0.36	0.44	0.82	0.54
1997	1.04	0.00	1.52	0.85
1998	0.46	0.35	1.62	0.81
1999	0.36	1.75	1.30	1.14
2000	0.34	0.02	1.07	0.48
2001	0.27	0.18	0.49	0.31
2002	0.79	0.09	1.37	0.75
2003	0.69	0.16	1.29	0.71
2004	0.55	0.25	1.60	0.80
---	---	---	---	---

# Fisheries advice

## Icelandic haddock



*Iceland Sea and Greenland Sea Ecoregions*

*Published 12 June 2015*

### **2.3.12 Haddock (*Melanogrammus aeglefinus*) in Division Va (Iceland grounds)**

#### **ICES stock advice**

ICES advises that when the Icelandic management plan is applied, catches in the fishing year 2015/2016 should be no more than 36 400 t.



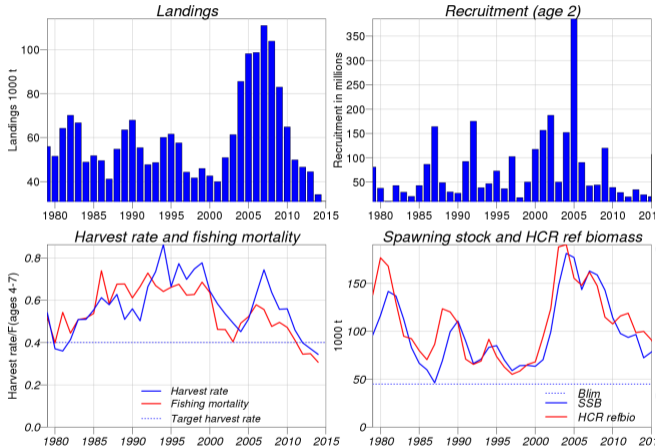
### Basis of the assessment

**Table 2.3.12.6** Haddock in Division Va. The basis of the assessment.

ICES stock data category	1 (ICES, 2015b).
Assessment type	Adapt-type model (in ADMB) that uses catches in the model and in the forecast.
Input data	Landings-at-age and two survey indices (Icelandic spring and autumn groundfish surveys).
Discards and bycatch	Haddock is caught in mixed demersal fisheries, sometimes as a large proportion of the catch, sometime as bycatch. Discarding due to high-grading was up to 20% by weight in the late 1990s, but has been less than 2% in recent years.
Indicators	None.
Other information	The stock was benchmarked in February 2013 (ICES, 2013a) and a harvest control rule evaluated in April 2013 (ICES, 2013b).
Working group	North-Western Working Group ( <a href="#">NWWG</a> ).

# Fisheries advice

## Icelandic haddock

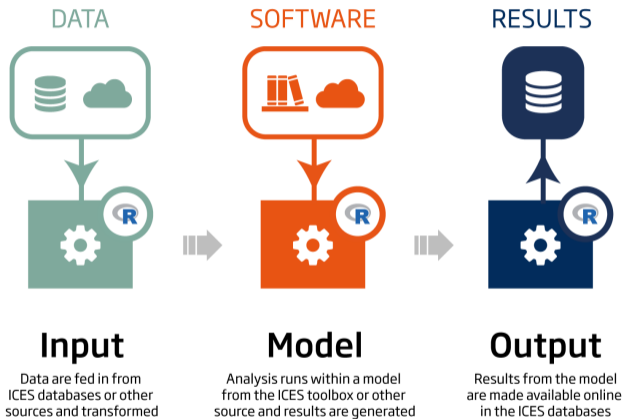


### Summary of the assessment

**Table 2.3.12.9** Haddock in Division Va. Assessment summary. Weights in tonnes.

Year	Recruitment at age 2 thousands	Biomass 3+	SSB	Landings	Yield/SSB	F <sub>4-7</sub>	Harvest rate
1979	80 923	162 177	96 072	55 330	0.576	0.521	0.542
1980	37 390	192 244	116 521	51 110	0.439	0.398	0.370
1981	10 426	206 988	141 628	63 558	0.449	0.542	0.360
1982	42 788	180 380	136 817	69 428	0.507	0.444	0.413
1983	29 306	148 112	112 589	65 942	0.586	0.508	0.508
1984	20 574	112 797	82 961	48 282	0.582	0.515	0.509
1985	42 788	102 394	66 652	51 102	0.767	0.537	0.554
1986	86 501	96 480	59 837	48 859	0.817	0.739	0.612
1987	164 036	105 395	46 298	40 760	0.88	0.584	0.578
1988	48 742	153 708	69 391	54 204	0.781	0.675	0.627
1989	29 778	168 184	99 537	62 885	0.632	0.676	0.509
1990	27 094	145 507	110 745	67 198	0.607	0.611	0.559
1991	92 280	122 708	89 825	54 692	0.609	0.664	0.503
1992	175 094	106 310	66 379	47 121	0.71	0.728	0.664
1993	38 437	130 461	71 000	48 123	0.678	0.669	0.734
1994	46 842	127 836	83 295	59 502	0.714	0.641	0.862

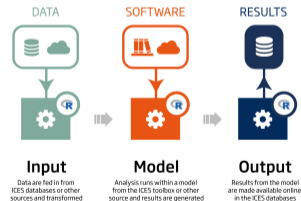
# Workflow



# Benefits



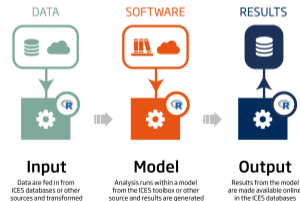
- ▶ See exactly how calculations were done:  
**reviewability, traceability**
- ▶ **Highlight changes** since last year:  
data, model settings
- ▶ **Quality assurance:**  
check integrity, catch errors
- ▶ Easy to **find data and results** from final assessment



# Benefits



- ▶ **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



## Today's question



Is the management  
of this stock based on  
**open** and **transparent** science?

# TAF links



**Main landing page** - <http://taf.ices.dk>

**One-page flyer** - <https://ices-taf-dev.github.io/pdf/taf-flyer.pdf>

## Tutorial

(video) - <https://www.youtube.com/watch?v=FweJbr9hfdY>

(written) - <https://github.com/ices-taf/doc/blob/master/tutorial-1/README.md>

## Procedure to get an assessment into TAF

<https://github.com/ices-taf/doc/blob/master/procedure.md>

**TAF assessment scripts** - <https://github.com/ices-taf>



Thanks!



Questions?

[colin.millar@ices.dk](mailto:colin.millar@ices.dk)

[arni.magnusson@ices.dk](mailto:arni.magnusson@ices.dk)

<http://taf.ices.dk>