

ICES *Squalus acanthias* assessment

Results using updated model

Presentation to GFCM 13 December 2011

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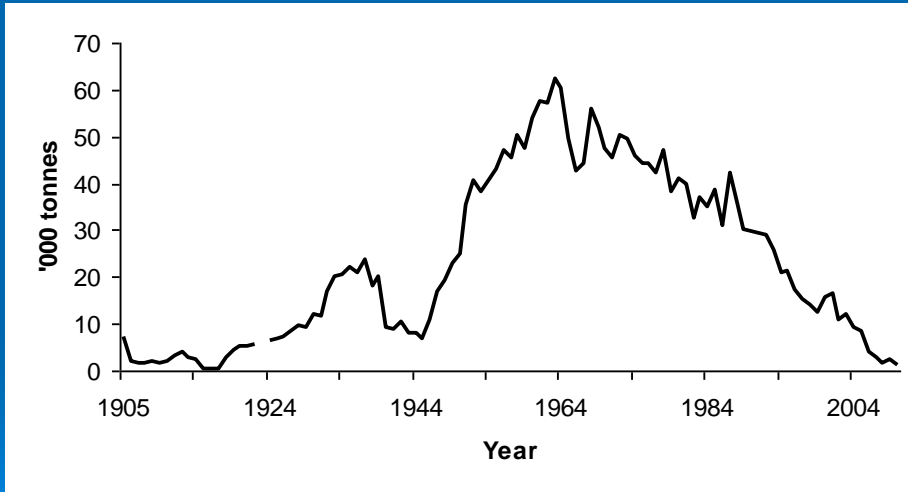


Background

- *Squalus acanthias* / picked dogfish / spiny dogfish / spurdog
- One stock in the NE Atlantic

- Managed by TAC (both EU and Norway)
- Maximum landing size

Catch



Fisheries

- Targeted fisheries until 2008
 - Usually aimed at large female aggregations
 - Also very large bycatch
- 2009 – First restrictive TAC
- 2010 - First bycatch TAC – 142 tonnes
- 2011- Zero TAC

First Model - 2010

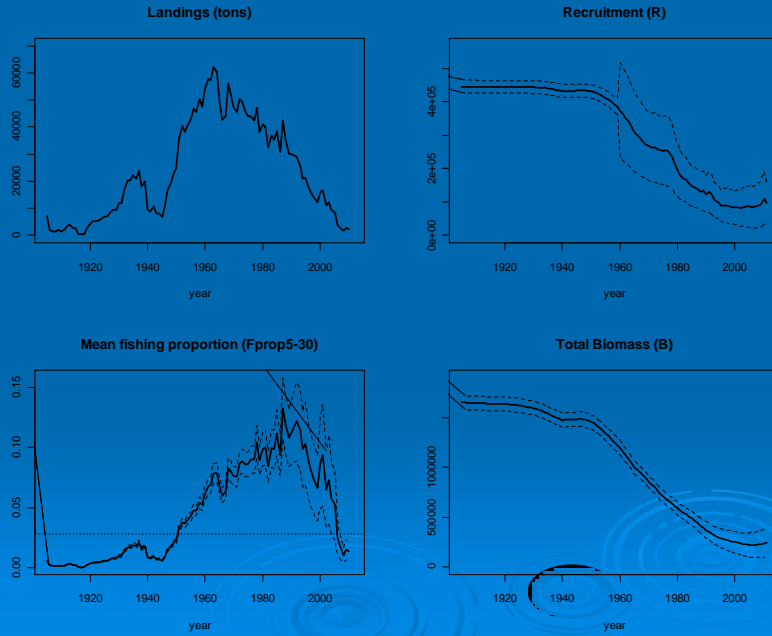
- Developed by Jose de Oliveira, Helen Dobby & Jim Ellis (UK – England Scotland).
- Based on Punt and Walker model – Age and sex structured, but using length based process such as fecundity, maturity
- Uses Scottish survey data
- Commercial data – Scotland, UK
- Discards not included

- Not used to provide advice

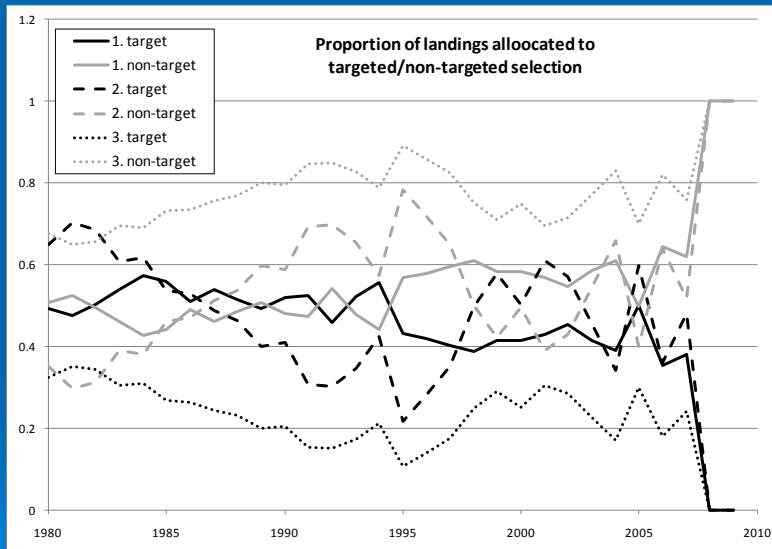
Model Updates

- Benchmark (External review) Spring 2011
- Updated June 2011
 - Improved targeting scenarios
 - Merged largest size categories
 - Re-calculating survey length frequency to allow for bias by occasional large catches.
- Advice Sept 2011

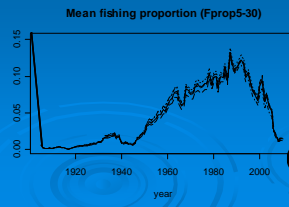
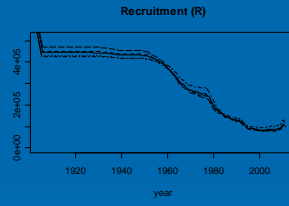
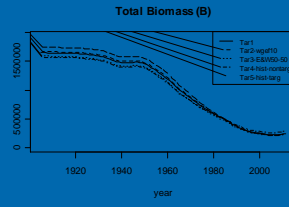
Baseline: Summary plots



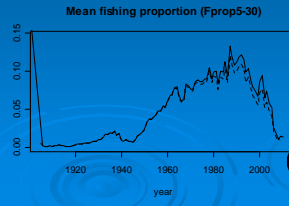
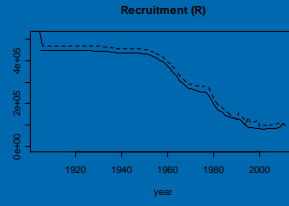
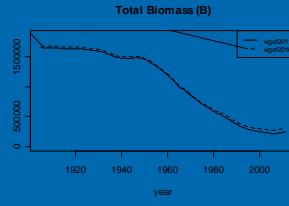
Targeting Scenarios



Compare Targeting Scenarios



Compare WGEF 2011 to WGEF 2010



Catch Options Table

wgef 2011	Catch Options								
	1	2	3	4	5	6	7	8	9
	zero	Cav 05-09	0.75Cav	0.50Cav	0.25Cav	TAC09	0.1TAC09	F _{MSY} *	C80's
Catch	0	3913	2934	1956	978	1422	142.2	5280	36000
Point estimates									
2012	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.02
2013	1.06	1.04	1.05	1.05	1.06	1.05	1.06	1.04	0.90
2014	1.09	1.06	1.07	1.08	1.08	1.08	1.09	1.05	0.78
2015	1.12	1.08	1.09	1.10	1.11	1.11	1.12	1.06	0.66
2016	1.16	1.09	1.11	1.12	1.14	1.13	1.15	1.07	0.54
2017	1.19	1.11	1.13	1.15	1.17	1.16	1.19	1.08	0.42
2018	1.22	1.13	1.15	1.18	1.20	1.19	1.22	1.10	0.30
2019	1.26	1.15	1.17	1.20	1.23	1.22	1.26	1.11	0.19
2020	1.30	1.16	1.20	1.23	1.26	1.25	1.29	1.12	0.14
2021	1.33	1.18	1.22	1.26	1.29	1.28	1.33	1.13	0.10
Point estimates - 2 standard deviations									
2012	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.00
2013	1.04	1.02	1.03	1.03	1.04	1.04	1.04	1.02	0.80
2014	1.07	1.03	1.04	1.05	1.06	1.06	1.07	1.03	0.59
2015	1.09	1.03	1.05	1.07	1.08	1.08	1.09	1.03	0.38
2016	1.12	1.04	1.06	1.08	1.10	1.10	1.12	1.03	0.17
2017	1.15	1.05	1.07	1.10	1.13	1.12	1.14	1.04	0.00
2018	1.17	1.05	1.09	1.12	1.15	1.14	1.17	1.05	0.00
2019	1.20	1.06	1.10	1.14	1.17	1.16	1.20	1.05	0.00
2020	1.23	1.07	1.11	1.16	1.20	1.18	1.23	1.06	0.01
2021	1.26	1.07	1.13	1.18	1.22	1.20	1.25	1.06	0.00
Point estimates + 2 standard deviations									
2012	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.03
2013	1.08	1.06	1.07	1.07	1.07	1.07	1.08	1.06	1.00
2014	1.12	1.09	1.09	1.10	1.11	1.10	1.11	1.07	0.97
2015	1.15	1.12	1.12	1.13	1.14	1.14	1.15	1.09	0.94
2016	1.19	1.14	1.15	1.17	1.18	1.17	1.19	1.11	0.92
2017	1.23	1.17	1.18	1.20	1.21	1.21	1.23	1.13	0.89
2018	1.28	1.20	1.22	1.23	1.25	1.24	1.27	1.15	0.87
2019	1.32	1.23	1.25	1.27	1.29	1.28	1.31	1.17	0.46
2020	1.36	1.26	1.28	1.30	1.33	1.31	1.35	1.18	0.27
2021	1.40	1.29	1.31	1.34	1.37	1.35	1.40	1.20	0.20

*For the F_{MSY} option, the "catch" is the average for 2012-2021

Advice

- Model accepted as a basis for advice.
- ICES advice now based on Fmsy principle.
- Calculated here as F_{prop,msy} – 0.029
- Current exploitation is below this, BUT we don't have a measure for Btrigger. Likely to be well below this! Biomass
- Therefore advice likely to be no targeted fishery and catches in other fisheries to be reduced to lowest possible level (same as 2010)

Known Issues / Future Work

- Lack of Norwegian data
- Use of survey data – area coverage
- Discard / survivorship rates

- Management plan??