

American Plaice in Divisions 3LNO

Advice June 2018 for 2019-2021

Recommendation for 2019-2021

SSB remains below B_{lim} , therefore Scientific Council recommends that, in accordance with the rebuilding plan, there should be no directed fishing on American plaice in Div. 3LNO in 2019, 2020, and 2021. Bycatches of American plaice should be kept to the lowest possible level and restricted to unavoidable bycatch in fisheries directing for other species.

Management objectives

In 2011 FC adopted an “Interim 3LNO American Plaice Conservation Plan and Rebuilding Strategy” (FC Doc. 11/21). There is a Harvest Control Rule (HCR) in place for this stock.

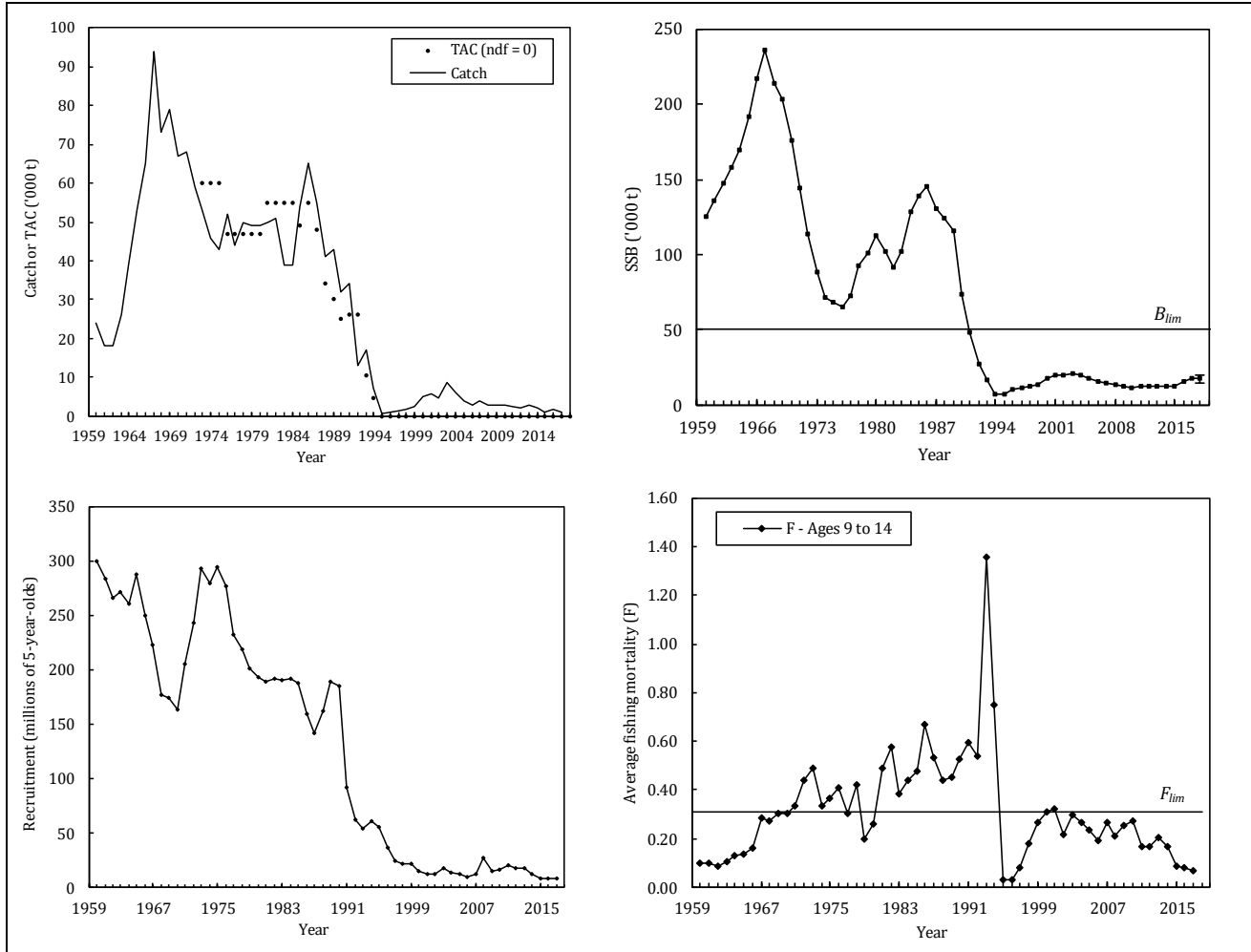
<i>Convention objectives</i>	<i>Status</i>	<i>Comment/consideration</i>	
Restore to or maintain at B_{msy}	●	$B < B_{lim}$	● OK
Eliminate overfishing	●	No directed fishery, current bycatches are delaying recovery	● Intermediate
Apply Precautionary Approach	●	Reference points defined	● Not accomplished
Minimise harmful impacts on living marine resources and ecosystems	●	VME closures in effect, no specific measures.	○ Unknown
Preserve marine biodiversity	○	Cannot be evaluated	

Management unit

The management unit is NAFO Divisions 3LNO. The stock is distributed throughout Div. 3LNO but historically most of the biomass was found in Div. 3L

Stock status

The stock remains low compared to historic levels and is presently at 34% of the B_{lim} level. Recruitment has been low since the late 1980s, but Canadian surveys indicate a large number of pre-recruits in Div. 3L in recent years. Current estimates of fishing mortality are very low.



Reference points

- B_{lim} : 50 000 t of spawning biomass (Scientific Council Report, 2003)
- B_{msy} : 242 000 t of spawning biomass (Scientific Council Report 2011)
- F_{lim} : 0.31 (Scientific Council Report, 2011)



Projections

	SSB('000 t)	Yield (t)
Median (90% CI)		
F = 0		
2019	17.0 (14.6, 19.8)	-
2020	18.0 (15.5, 21.0)	-
2021	19.5 (16.6, 23.0)	-
2022	21.1 (18.0, 25.3)	-
F₂₀₁₅₋₂₀₁₇ = 0.08		
2019	17.0 (14.7, 19.7)	1542
2020	16.7 (14.4, 19.5)	1538
2021	16.9 (14.5, 19.9)	1567
2022	17.2 (14.8, 20.7)	1594

Fishing Mortality	Yield				P(SSB < B _{lim})				P(SSB ₂₀₂₂ > SSB ₂₀₁₈)
	2019	2020	2021	2022	2019	2020	2021	2022	
F = 0	-	-	-	-	>99%	>99%	>99%	>99%	99%
F ₂₀₁₅₋₂₀₁₇ = 0.08	1542	1538	1567	1594	>99%	>99%	>99%	>99%	47%

Simulations were carried out to examine the trajectory of the stock under 2 scenarios of fishing mortality: $F = 0$ and $F = F_{2015-2017}$ (0.08). SSB was projected to have a probability of >0.99 of being less than B_{lim} by the start of 2022 under both fishing mortality scenarios. Under the $F=0$ scenario, there is a 99% probability that SSB in 2022 will be greater than in 2018, however this is reduced to 47% probability under F status-quo. Even very low levels of F are inhibiting growth of the stock.

Assessment

An analytical assessment using the ADAPTive framework tuned to the Canadian 3LNO spring, Canadian 3LNO autumn and the EU-Spain Div. 3NO survey.

Given the low potential for stock growth, the next full assessment is scheduled for 2021.

Human impact

Mainly fishery related mortality. Other sources (e.g. pollution, shipping, oil-industry) are undocumented.

Biological and environmental interactions

Capelin and sandlance as well as other fish and invertebrates are important prey items for American plaice. There has been a decrease in age at 50% maturity over time, possibly brought about by some interaction between fishing pressure and environmental/ecosystem changes during that period. The Grand Bank (3LNO) EPU is currently experiencing low productivity conditions and biomass has declined across multiple trophic levels and stocks since 2014.

Fishery

The stock has been under moratorium since 1995. American plaice in recent years is caught as bycatch mainly in otter trawl fisheries of Yellowtail Flounder, skate, Greenland Halibut and redfish. In 2015 and 2016,

STATLANT 21A data was used for Canadian fisheries and Daily Catch Records (DCR) for fisheries in the NRA. Catches for 2017 were obtained from CESAG estimates.

Recent catch estimates and TACs are:

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
TAC	ndf	ndf	ndf	ndf	ndf	ndf	ndf	ndf	ndf	ndf
STATLANT 21	1.8	1.5	1.2	1.3	2.2	1.4	1.1	1.7	1.2	
STACFIS	3.0	2.9	2.4 ¹	2.1 ¹	3.0 ¹	2.3 ¹	1.1 ²	1.7 ²	1.2	

ndf No directed fishing.

¹ Catch was estimated using fishing effort ratio applied to 2010 STACFIS catch.

² Catch was estimated using STATLANT 21 data for Canadian fisheries and Daily Catch Reports for fisheries in the NRA.

Effects of the fishery on the ecosystem

No specific information is available. There is no directed fishery for this stock. General impacts of fishing gears on the ecosystem should be considered. Areas within Divs. 3LNO have been closed to protect sponges and coral.

Special Comments

There is a tendency to overestimate SSB and underestimate F in the assessment model. In the current assessment there is a substantial downwards (47%) revision of the SSB in 2016, relative to the 2016 assessment.

Sources of information

SCS Doc. 18/05, 18/06, 18/07, 18/08, 18/13, 18/14, 18/15; SCR Doc. 18/11, 18/17, 18/18, 18/19; FC Doc. 11/21.