

Greater silver smelt (*Argentina silus*) in Subarea 14 and Division 5.a (East Greenland and Iceland grounds)

ICES advice on fishing opportunities

ICES advises that when the precautionary approach is applied, catches should be no more than 7603 tonnes in 2019.

Stock development over time

The biomass indicator shows an increasing trend since 2000. A proxy for fishing mortality (F_{proxy}) has decreased in recent years and has been below the $F_{\text{MSY proxy}}$ since 2014.

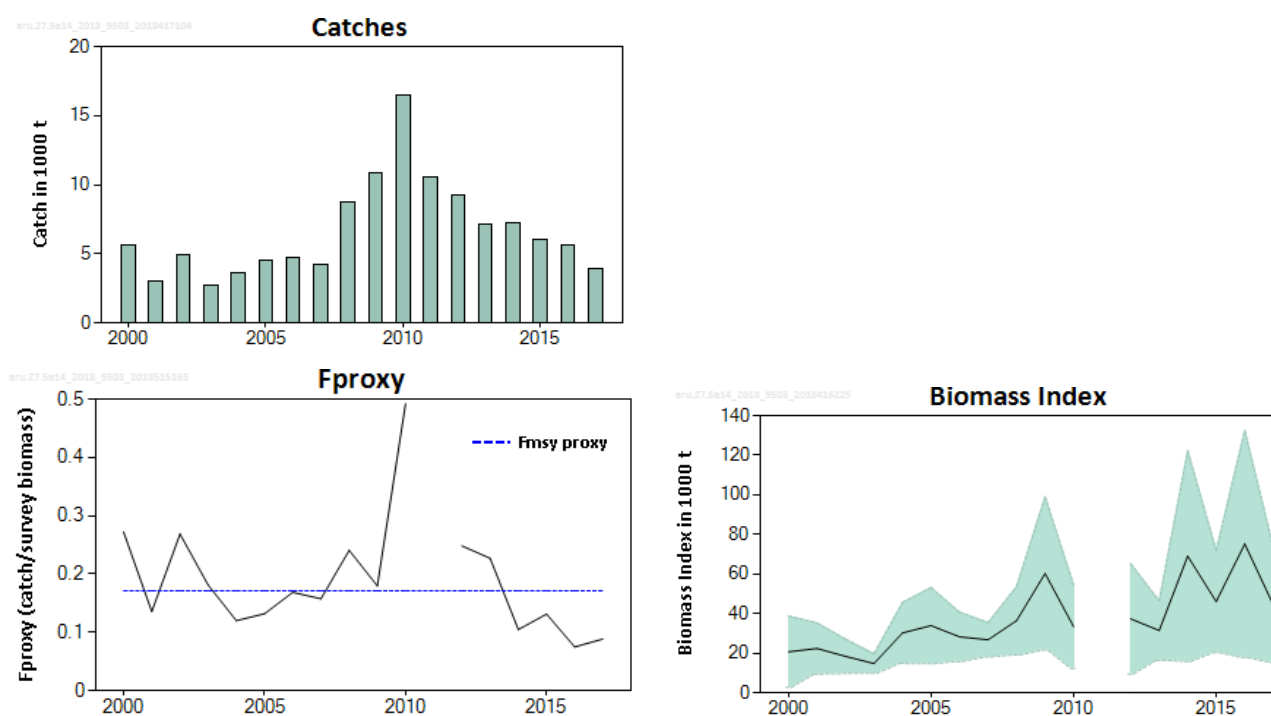


Figure 1 Greater silver smelt in Subarea 14 and Division 5.a. Summary of the stock assessment. Top left: Total catches; Top right: Biomass index from the Icelandic autumn survey (IS-SMH); Bottom: The fishing mortality proxy (F_{proxy}) from catch and survey data: (total catch)/(survey biomass). The dotted horizontal line indicates the average F_{proxy} for the period 2002–2007 used to calculate the advice ($F_{\text{MSY proxy}}$).

Stock and exploitation status

ICES assesses that fishing pressure on the stock is below $F_{MSY\ proxy}$. No reference points for stock size have been defined for this stock.

Table 1 Greater silver smelt in Subarea 14 and Division 5.a. State of the stock and fishery relative to reference points. The status evaluation is based on reference point proxies (ICES, 2016a).

		Fishing pressure				Stock size			
		2015	2016	2017		2015	2016	2017	
Maximum sustainable yield	$F_{MSY\ proxy}$	✓	✓	✓	Below	MSY $B_{trigger}$?	?	? Undefined
Precautionary approach	F_{pa}, F_{lim}	✓	✓	✓	Below possible reference points	B_{pa}, B_{lim}	?	?	? Undefined
Management plan	F_{MGT}	—	—	—	Not applicable	B_{MGT}	—	—	— Not applicable
Qualitative evaluation	-	—	—	—	Not applicable	-	↘	↗	↘ Decreasing

Catch scenarios

The ICES framework for category 3 stocks was applied (ICES, 2012). The Icelandic autumn trawl survey was used as a biomass indicator. A reference $F_{MSY\ proxy}$ was defined as the average F_{proxy} (catch divided by survey biomass index) for the reference period 2002–2007.

The advice is based on multiplying the reference $F_{MSY\ proxy}$ with the most recent survey biomass index value. The difference between the resulting value and the previous catch advice is less than 20% and therefore the uncertainty cap was not applied. The reference $F_{MSY\ proxy}$ used to provide advice is considered precautionary because it is based on exploitation during a period when no detrimental effects were observed on the stock. Therefore, the precautionary buffer was not applied. Discarding is considered negligible.

Table 2 Greater silver smelt in Subarea 14 and Division 5.a. The basis for the catch scenarios. *For stocks in ICES categories 3–6, one catch option is provided.

Index A (2017)	44463 t	
Reference $F_{MSY\ proxy}$ (2002–2007)	0.171	
Advised catch for 2018 issued in 2017	9310 t	
(Index A × Reference $F_{MSY\ proxy}$)/Advised catch for 2018	0.82	
Uncertainty cap	Not applied	--
Discard rate	Negligible	
Precautionary buffer	Not applied	-
Catch advice **	7603 t	
% Advice change ***	-18%	

* The figures in the table are rounded. Calculations were done with unrounded inputs and computed values may not match exactly when calculated using the rounded figures in the table.

** [Index 2017 × $F_{MSY\ proxy}$].

*** Advice value for 2019 relative to advice value for 2018.

The advised catch has decreased from last year as a result of a decrease in the biomass indicator.

Basis of the advice

Table 3 Greater silver smelt in Subarea 14 and Division 5.a. The basis of the advice.

Advice basis	Precautionary approach
Management plan	ICES is not aware of any agreed precautionary management plan for greater silver smelt in this area.

Quality of the assessment

The Icelandic autumn survey (IS–SMH) covers the full depth range and geographical distribution of the stock and the fisheries. The uncertainty in the survey index is high because the species is usually caught in the survey in only few hauls in relatively large numbers. The index ratio of the mean length in catches in 2017 relative to the expected length when $F=M$ ($L_{F=M} = 39.9$ cm) is 1.07 (ICES, 2018) which also suggests that exploitation is below the proxy for F_{MSY} .

Issues relevant for the advice

There is no information to present for this stock.

Reference points

The average F_{proxy} for the reference period 2002–2007 used to provide advice is considered to be $F_{MSY proxy}$ (ICES, 2016a) for this stock.

Table 4 Greater silver smelt in Subarea 14 and Division 5.a. Reference points, values, and their technical basis.

Framework	Reference point	Value	Technical basis	Source
MSY approach	MSY $B_{trigger proxy}$	Not defined		
	$F_{MSY proxy}$	0.171	The harvest rate $F_{MSY proxy}$ from catch and survey data: (total catch)/(survey biomass) for the period 2002–2007 when no detrimental effects were observed.	ICES (2016a, 2018)
Precautionary approach	B_{lim}	Not defined		
	B_{pa}	Not defined		
	F_{lim}	Not defined		
	F_{pa}	Not defined		
Management plan	SSB_{mgt}	Not applicable		
	F_{mgt}	Not applicable		

Basis of the assessment

Table 5 Greater silver smelt in Subarea 14 and Division 5.a. Basis of the assessment and advice.

ICES stock data category	3 (ICES, 2016b).
Assessment type	Survey trends-based assessment.
Input data	Landings and survey indices (Icelandic autumn survey, IS–SMH).
Discards and bycatch	Discarding is considered negligible.
Indicators	Length-based indicator ($L_{mean}/L_{F=M}$, ICES, 2018).
Other information	Latest benchmark in 2010 (ICES, 2010).
Working group	Working Group on the Biology and Assessment of Deep-Sea Fisheries Resources (WGDEEP)

Information from stakeholders

There is no available information.

History of the advice, catch, and management

Table 6 Greater silver smelt in Subarea 14 and Division 5.a. ICES advice and catches. All weights are in tonnes.

Year	ICES advice	Predicted catch corresp. to advice	ICES catches
2003	*		2686
2004	*		3637
2005	*		4481
2006	*		4775
2007	The fishery should not be allowed to expand unless it can be shown that it is sustainable		4226
2008	Biennial		8778
2009	Same advice as 2007		10829
2010	Biennial		16428
2011	Reduce exploitation rates to 2001–2007 levels		10515
2012	No new advice, same as 2011		9290
2013	F_{proxy} (2001–2007)	3700	7154
2014	No new advice, same as 2013		7241
2015	F_{proxy} (2002–2007), 20% lowering of target	4033	6056
2016	Precautionary approach: $F_{\text{MSY proxy}}$ (2002–2007), capped index increase	6477	5646
2017	Precautionary approach (same value as advised catches for 2016)	≤ 7758	3946
2018	Precautionary approach: $F_{\text{MSY proxy}}$ (2002–2007), capped index increase	≤ 9310	
2019	Precautionary approach	≤ 7603	

*Prior to 2007 advice for this stock was included in the advice on greater silver smelt in other areas.

History of the catch and landings

Table 7 Greater silver smelt in Subarea 14 and Division 5.a. Catch distribution by fleet in 2017 as estimated by ICES.

Catch (2017)	Landings	Discards
3946 tonnes	Trawl 100%	negligible
	3946 tonnes	

Table 8 Greater silver smelt in Subarea 14 and Division 5.a. History of commercial official total catches and catches inside and outside of the NEAFC regulatory area. All weights are in tonnes. The catches are almost exclusively taken by Iceland.

Year	Inside the NEAFC RA	Outside the NEAFC RA	Catches
1988			206
1989			8
1990			112
1991			247
1992			657
1993			1255
1994			613
1995			492
1996			808
1997			3367
1998			13387
1999			6704
2000			5657
2001			3043
2002			4960
2003			2686
2004			3637
2005			4481
2006			4775
2007			4226
2008			8778
2009			10829
2010			16428
2011			10515
2012			9290
2013	0	7154	7154
2014	0	7241	7241
2015	0	6056	6056
2016	0	5646	5646
2017	0	3946	3946

Summary of the assessment

Table 9 Greater silver smelt in Subarea 14 and Division 5.a. Assessment summary. The index is from the Icelandic autumn survey (IS-SMH). Weights are in tonnes.

Year	Biomass index	High	Low	Catches	F _{proxy}
2000	20764	38794	2735	5657	0.27
2001	22426	35348	9503	3043	0.136
2002	18465	27151	9779	4960	0.27
2003	14826	19766	9886	2686	0.181
2004	30289	45724	14854	3637	0.120
2005	33956	53190	14722	4481	0.132
2006	28317	40749	15885	4775	0.169
2007	26832	35510	18155	4226	0.157
2008	36458	53751	19165	8778	0.24
2009	60280	99033	21527	10829	0.180
2010	33383	54452	12314	16428	0.49
2011*				10515	
2012	37413	65278	9548	9290	0.25
2013	31505	46510	16500	7154	0.23
2014	69073	122278	15867	7241	0.105
2015	46114	71873	20355	6056	0.131
2016	75200	132535	17864	5646	0.075
2017	44463	73570	15356	3946	0.089

*No survey in 2011

Sources and references

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- ICES. 2016b. Advice basis. *In* Report of the ICES Advisory Committee, 2016. ICES Advice 2016, Book 1, Section 1.2.
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