

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

ICES stock advice

ICES advises that when the precautionary approach is applied, catches should be no more than 7758 tonnes in 2017. All catches are assumed to be landed.

Stock development over time

The biomass indicator shows an increase in stock biomass in 2014 follow by a decrease in 2015. The F_{proxy} has decreased since 2010 and has been below the $F_{\text{MSY proxy}}$ since 2014.

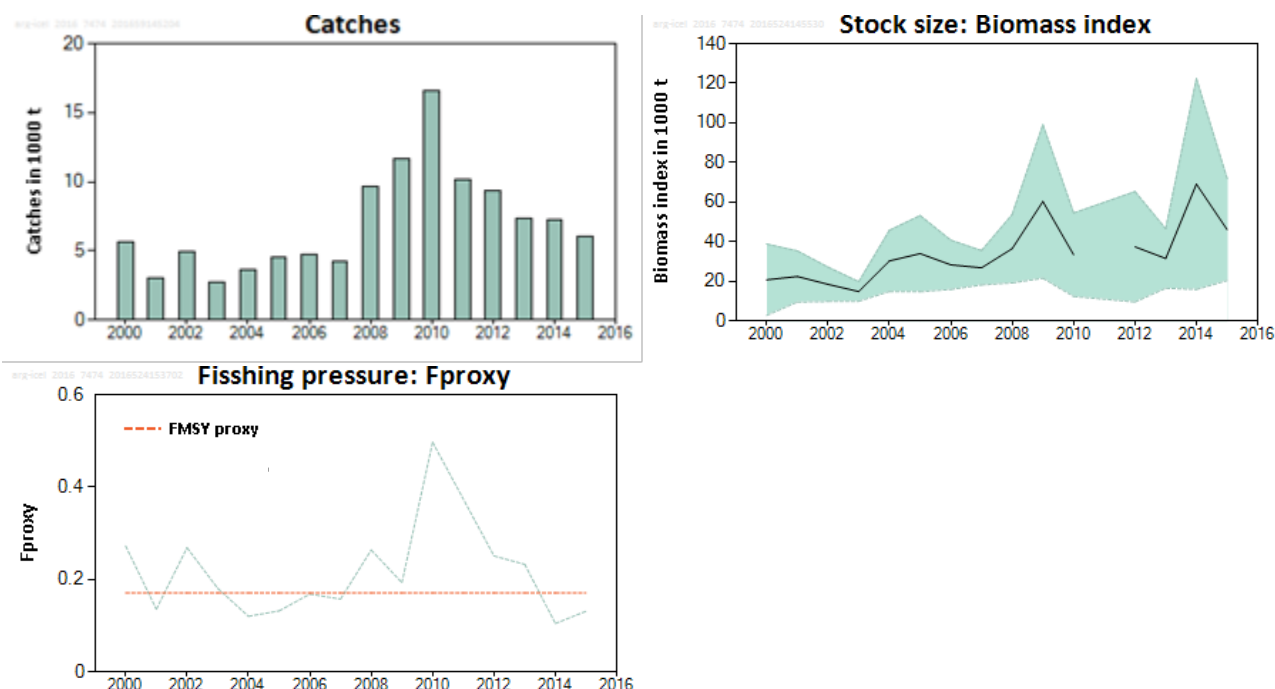


Figure 9.3.23.1 Greater silver smelt in Subarea 14 and Division 5.a. Top left: Catches in thousand tonnes. Top right: Biomass at depths greater than 400 m (from the Icelandic autumn survey). Bottom: Trends in F_{proxy} calculated as catch divided by survey biomass.

Stock and exploitation status

Table 9.3.23.1 Greater silver smelt in Subarea 14 and Division 5.a. State of the stock and fishery relative to reference points.

		Fishing pressure				Stock size			
		2013	2014	2015		2013	2014	2015	
Maximum sustainable yield	$F_{\text{MSY proxy}}$	✗	✓	✓ Below proxy		?	?	?	Undefined
Precautionary approach	$F_{\text{pa}}, F_{\text{lim}}$?	✓	✓ Below possible ref points		?	?	?	Undefined
Management plan	F_{MGT}	-	-	- Not applicable		-	-	-	Not applicable
Qualitative evaluation	-	↘	↘	↗ -		↘	↗	↘	Decreasing

Catch options

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

The advice is based on multiplying the reference F_{proxy} with the most recent index value. This value is constrained by an uncertainty cap of 20% compared to the previous catch advice.

The reference F_{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 9.3.23.2 Greater silver smelt in Subarea 14 and Division 5.a. For stocks in ICES data category 3, one catch option is provided.

Index A (2015)	46 114 t	
Reference F_{proxy} (2002–2007)	0.171	
Advice 2015	6465 t	
(Index A × Reference F_{proxy}) / Advice 2015	1.22	
Uncertainty cap	Applied	1.2
Discard rate	Negligible	
Precautionary buffer	Not applied	-
Catch advice *	7758 t	

*Advice 2015 × uncertainty cap.

Basis of the advice

Table 9.3.23.3 Greater silver smelt in Subarea 14 and Division 5.a. The basis of the advice.

Advice basis	Precautionary approach.
Management plan	There is no 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 species and the fisheries. The uncertainties of the survey index are high because the species is usually caught in the survey in few, but relatively large hauls.

Issues relevant for the advice

Last year's advice used the uncertainty cap on the biomass indicator. This year's used the uncertainty cap on the catch advice ((biomass index × reference F_{proxy}) / catch advice 2015). Both approaches result in the same catch advice.

Reference points

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

Table 9.3.23.4 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}	Not defined		
	$F_{\text{MSY proxy}}$	0.171	The harvest rate $F_{\text{MSY proxy}}$ from catch and survey data: (total catch) / (survey biomass) for the period 2002–2007 when no detrimental effects were observed.	ICES (2016a)
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 9.3.23.5 Greater silver smelt in Subarea 14 and Division 5.a. The basis of the assessment.

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	None
Other information	Last 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 9.3.23.6 Greater silver smelt in Subarea 14 and Division 5.a. History of ICES advice, the agreed TAC, and ICES estimates of landings. Weights are in thousand tonnes.

Year	ICES advice	Predicted catch corresp. to advice	ICES landings
2003	*		2.7
2004	*		3.6
2005	*		4.5
2006	*		4.8
2007	The fishery should not be allowed to expand unless it can be shown that it is sustainable		4.2
2008	Biennial		8.8
2009	Same advice as 2007		10.8
2010	Biennial		16.4
2011	Reduce exploitation rates to 2001–2007 levels		10.5
2012	No new advice, same as 2011		9.3
2013	F_{proxy} (2001–2007)	3.7	7.2
2014	No new advice, same as 2013		7.2
2015	F_{proxy} (2002–2007), 20% lowering of target	4	6.1
2016	Precautionary approach: $F_{\text{MSY proxy}}$ (2002–2007), capped index increase	6.5	
2017	Precautionary approach (same value as advised catches for 2016)	≤ 7.8	

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

History of catch and landings

Table 9.3.23.7 Greater silver smelt in Subarea 14 and Division 5.a. Catch distribution by fleet in 2015 as estimated by ICES.

Total catch	Commercial landings	Commercial discards
6056 t	100% trawl fisheries	Negligible
	6056 t	

Table 9.3.23.8 Greater silver smelt in Subarea 14 and Division 5.a. History of commercial official catches in Icelandic waters. Weights are in tonnes.

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

Summary of the assessment

Table 9.3.23.9 Greater silver smelt in Subarea 14 and Division 5.a. Assessment summary. Weights are in tonnes.

Year	Catch	Index	CV	Upper	Lower	F _{proxy}
2000	5657	20764	0.44	38794	2735	0.272
2001	3043	22426	0.29	35348	9503	0.136
2002	4960	18465	0.24	27151	9779	0.269
2003	2686	14826	0.17	19766	9886	0.181
2004	3637	30289	0.26	45724	14854	0.120
2005	4481	33956	0.29	53190	14722	0.132
2006	4775	28317	0.22	40749	15885	0.169
2007	4226	26832	0.17	35510	18155	0.157
2008	8778	36458	0.24	53751	19165	0.241
2009	10829	60278	0.33	99029	21526	0.180
2010	16428	33383	0.32	54452	12314	0.492
2011*	10515					
2012	9290	37413	0.38	65278	9548	0.248
2013	7154	31504	0.24	46509	16499	0.227
2014	7241	69073	0.39	122278	15867	0.105
2015	6056	46114	0.29	71873	20355	0.131

*No survey in 2011.

Sources and references

ICES. 2010. Report of the Benchmark Workshop on Deep-water Species (WKDEEP), 17–24 February 2010, Copenhagen, Denmark. ICES CM 2010/ACOM:38. 247 pp.

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ICES. 2016b. General context of ICES advice. *In* Report of the ICES Advisory Committee, 2016. ICES Advice 2016, Book 1, Section 1.2.

ICES. 2016c. Report of the Working Group on the Biology and Assessment of Deep-Sea Fisheries Resources (WGDEEP), 20–27 April 2016, ICES Headquarters, Copenhagen. ICES CM 2016/ACOM:17.