

Greater silver smelt (*Argentina silus*) in subareas 7–10 and 12, and in Division 6.b (other areas)

ICES advice on fishing opportunities

ICES advises that when the precautionary approach is applied, catches should be no more than 193 tonnes in each of the years 2020 and 2021.

Stock development over time

Since 2010 there has been a large reduction in catches. Landings from the stock have been low, typically under 50 tonnes. The survey index indicates a slight increase over the time-series but there has been a decline in the last two years.

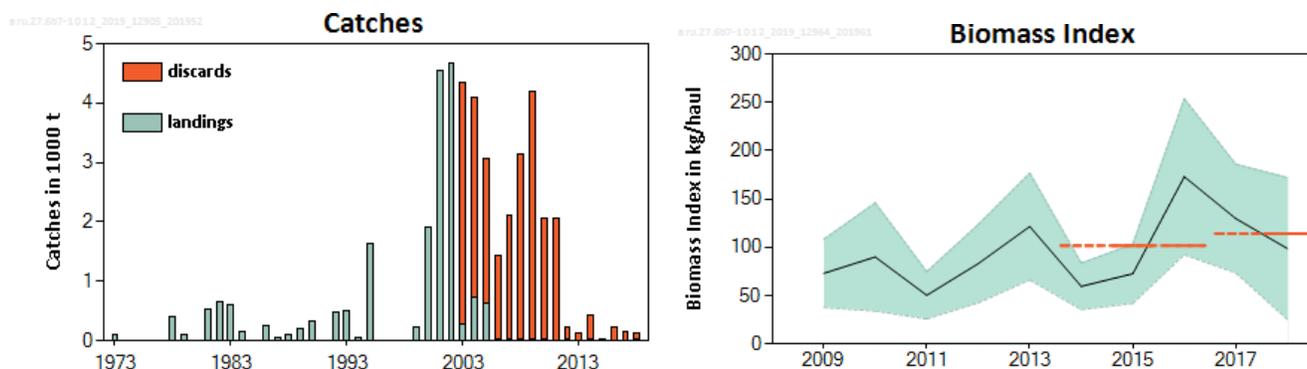


Figure 1 Greater silver smelt in subareas 7–10 and 12, and in Division 6.b. Summary of the stock assessment. Catch (left), discard estimates are only available since 2003. Biomass index (right) in kg haul⁻¹ from the Spanish Porcupine bank survey. The dashed orange lines indicate the average of the biomass index for 2014 to 2016 and for 2017 to 2018. The shaded areas on the biomass index plot represent 95% confidence intervals.

Stock and exploitation status

ICES cannot assess the stock and exploitation status relative to maximum sustainable yield (MSY) and precautionary approach (PA) reference points, because the reference points are undefined.

Table 1 Greater silver smelt in subareas 7–10 and 12, and in Division 6.b. State of the stock and fishery relative to reference points.

		Fishing pressure			Stock size					
		2016	2017	2018	2016	2017	2018			
Maximum sustainable yield	F_{MSY}	?	?	?	Unknown	$MSY B_{trigger}$?	?	?	Undefined
Precautionary approach	F_{pa}, F_{lim}	?	?	?	Unknown	B_{pa}, B_{lim}	?	?	?	Undefined
Management plan	F_{MGT}	—	—	—	Not applicable	B_{MGT}	—	—	—	Not applicable
Qualitative evaluation	-	?	?	?	Unknown	-	↗	↘	↘	Decreasing

Catch scenarios

ICES previously gave advice on landings for this stock. Because discard data are now available, the present advice is provided for catch.

The ICES framework for category 3 stocks was applied (ICES, 2012). The Spanish Porcupine bank survey was used as index for the stock development. The advice is based on a comparison of the two latest index values (index A) with the three preceding values (index B), multiplied by recent advice and divided by the retention rate (1 – discard rate). The index is estimated to have increased by less than 20% and thus the uncertainty cap was not applied. The stock status relative to candidate reference points is unknown. The precautionary buffer was applied in 2017, and therefore, was not applied again for the advice for 2020 and 2021. Discarding rate is 92% of total catch.

Table 2 Greater silver smelt in subareas 7–10 and 12, and in Division 6.b. The basis for the catch scenarios [^].

Index A (2017–2018)		114 kg haul ⁻¹
Index B (2014–2016)		102 kg haul ⁻¹
Index ratio (A/B)		1.12
Uncertainty cap	Not applied	-
Advised landings for 2018 and 2019		14 tonnes
Discard rate (2016–2018)		0.92
Precautionary buffer	Not applied	-
Catch advice *		193 tonnes
Landings corresponding to the catch advice **		16 tonnes
% Advice change ***		not calculated

[^] 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.

* [advised landings for 2018 and 2019] × [index ratio] × [1/(1 – discard rate)].

** [catch advice] × [1 – discard rate].

*** Previous advice was based on landings.

The present advice for catches is not comparable with the landings advice issued previously for this stock.

Basis of the advice

Table 3 Greater silver smelt in subareas 7–10 and 12, and in Division 6.b. The basis of the advice.

Advice basis	ICES 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 survey index used for the assessment does not cover the full stock area, but it does correspond to the area where the bulk of the cumulated catch in the past 30 years was taken. The survey covers water depths from 300 to 800 m, which is the main depth range of the species. The species is less abundant in southern areas (subareas 8, 9, and 10).

Prior to 2009, the two species, greater and lesser silver smelt, were not separated in the Spanish Porcupine Bank survey. However, since species were separately identified from 2009 onwards, the proportion of lesser silver smelt has been < 20%. The previous advice used the combined lesser and greater silver smelt index. The present advice uses only the greater silver smelt index.

ICES considers that the high landings of silver smelt seen in the early 2000s may have resulted from misreporting of fish species other than silver smelt. There is currently no directed fishery, and bycatches of greater silver smelt are discarded in fisheries for other species (primarily hake, monkfish, and megrim). In 2019, historical (2003 onwards) discard data became available from most countries involved in the fisheries that bycatch greater silver smelt in these areas.

Issues relevant for the advice †

This stock is classified as Category 4 in the [NEAFC categorization of deep-sea species/stocks](#) which implies that fisheries are primarily restricted to Coastal State exclusive economic zones (EEZs) and therefore management measures are not taken by NEAFC unless complementary to coastal state conservation and management measures.

The stock structure of greater silver smelt is uncertain. The subareas 7–10 and 12 and Division 6.b stock unit was defined in 2015 when ICES revised the advice units for the greater silver smelt. ICES provides separate advice for three other stock units (Subarea 14 and Division 5.a; subareas 1, 2, and 4 and Division 3.a; and divisions 5.b and 6.a).

Landings in Division 6.b and subareas 7–10 and 12 are small. Considerable discarding is known to occur in some fisheries in the Porcupine Bank outer shelf and upper slope fisheries for demersal and deep-water fish. These fisheries do not land greater silver smelt. Targeted fisheries for greater silver smelt that existed prior to 2006 have not operated significantly in these areas since then. It is considered more likely that variations in landings over time reflect market opportunities rather than fish abundance.

Reference points

No reference points are defined for this stock.

Basis of the assessment

Table 4 Greater silver smelt in subareas 7–10 and 12, and in Division 6.b. Basis of the assessment and advice.

ICES stock data category	3 (ICES, 2018).
Assessment type	Survey trends-based assessment (ICES, 2019).
Input data	Spanish Porcupine Bank survey.
Discards and bycatch	Included in the assessment.
Indicators	None.
Other information	This advice unit for greater silver smelt was defined in 2015. This stock has not been benchmarked.
Working group	Working Group on the Biology and Assessment of Deep-Sea Fisheries Resources (WGDEEP).

Information from stakeholders

There is no additional available information.

History of the advice, catch, and management

Table 5 Greater silver smelt in subareas 7–10 and 12, and in Division 6.b. ICES advice and official landings. All weights are in tonnes.

Year	ICES advice*	Catch corresponding to advice	EU TAC subareas 3 and 4*	EU TAC subareas 5–7	ICES landings
2003	No fisheries unless data collection on (by)catch, no expansion unless proven to be sustainable	-	1566	6247	288
2004	Biennial	-	1566	6247	722
2005	No fisheries unless accompanied by programmes to collect data on both target and bycatch fish	-	1311	5310	626
2006	Biennial	-	1311	5310	40
2007	The fishery should not be allowed to expand unless it can be shown that it is sustainable	-	1331	5311	36
2008	Biennial	-	1331	5311	20

† Version 2: NEAFC categorisation of deep-sea stocks added to section.

Year	ICES advice*	Catch corresponding to advice	EU TAC subareas 3 and 4*	EU TAC subareas 5–7	ICES landings
2009	Same advice as 2007	-	1331	5311	22
2010	Biennial	-	1278	5099	25
2011	The fishery should not be allowed to expand, and a reduction in catches should be considered	-	1176	4691	14
2012	No new advice, same as 2011		108	4316	36
2013	Reduce catches by 10%	31300	1028	4316	1
2014	No new advice, same as 2013	31300	1028	4316	22
2015	Precautionary approach	31300	1028	4316	5
2016	Precautionary approach	15^	-	4316	0
2017	Biennial	15^	-	3884	8
2018	Precautionary approach	≤ 14^	-	4661	36
2019	Precautionary approach (same landings advice 2018)	≤ 14^	-	4661	
2020	Precautionary approach	≤ 193			
2021	Precautionary approach (same catch advice 2020)	≤ 193			

* Until 2015 the advice was combined for subareas 1, 2, 4, 6, 7, 8, 9, 10, 12, and 14, and divisions 3.a and 5.b.

^ Advice for 2016–2019 was for landings.

History of the catch and landings

There are no landings reported from the NEAFC regulatory area.

Table 6 Greater silver smelt in subareas 7–10 and 12, and in Division 6.b. Catch distribution by fleet in 2018 as estimated by ICES.

Catch (2018)	Landings	Discards
140 tonnes	Trawl 100%	104 tonnes
	36 tonnes	

Table 7 Greater silver smelt in subareas 7–10 and 12, and in Division 6.b. History of the official total landings, landings by area and discards. All weights are in tonnes.

Year	Division 6.b	Subarea 7	Subarea 8	Subarea 9	Subarea 12	Total landings	Discards*
1973		103				103	
1974		0				0	
1975		0				0	
1976		0				0	
1977		1				1	
1978		409				409	
1979		103				103	
1980	13	0				13	
1981	525	0				525	
1982	0	666				666	
1983	4	595				599	
1984	0	163				163	
1985	0	0				0	
1986	0	258				258	
1987	0	50				50	
1988	0	100			0	100	

Year	Division 6.b	Subarea 7	Subarea 8	Subarea 9	Subarea 12	Total landings	Discards*
1989	0	200			0	200	
1990	300	24			0	324	
1991	5	9			0	14	
1992	221	254			0	475	
1993	3	505			6	514	
1994	20	39			0	59	
1995	1114	510			0	1624	
1996	0	10			1	11	
1997	0	12			0	12	
1998	0	0			0	0	
1999	178	50			0	228	
2000	1384	523			2	1909	
2001	130	4415			0	4545	
2002	30	4437	195		0	4662	
2003	126	119	43		0	288	4053
2004	23	47	23		629	722	3375
2005	4	58	202		362	626	2438
2006	0	40	0	0	0	40	1399
2007	0	35	0	1	0	36	2083
2008	9	0	10	1	0	20	3118
2009	0	20	0	2	0	22	4183
2010	0	23	0	2	0	25	2029
2011	0	12	1	1	0	14	2056
2012	0	3	0	2	31	36	203
2013	0	1	0	0	0	1	133
2014	20	1	1	0	0	22	398
2015	0	5	0	0	0	5	29
2016	0	0	0	0	0	0	240
2017	0	8	0	0	0	8	151
2018	0	32	4	0	0	36	104

* Discards by Spain and Netherlands from before the redefinition of the stock area (subareas 6, 7, and 8) from 2003 to 2014. Discard data from 2015 to 2018 are from Division 6.b and subareas 7–10 and 12.

Summary of the assessment

Table 8 Greater silver smelt in subareas 7–10 and 12, and in Division 6.b. Assessment summary. Biomass index from the Spanish Porcupine Bank survey for both greater and lesser silver smelt. Also given is the biomass index for *A.silus* only and the proportion between the two species. High and low refer to 95% confidence bounds.

Year	<i>Argentina sp.</i>			<i>Argentina silus</i>			Proportion of <i>A. silus/A. sphyrena</i>
	kg haul ⁻¹	Low	High	kg haul ⁻¹	Low	High	
2001	133.17	72.76	193.57				
2002	143.72	62.36	225.08				
2003	141.33	82.19	200.47				
2004	142.76	68.42	217.09				
2005	111.15	59.60	162.69				
2006	98.05	36.29	159.81				
2007	79.03	43.71	114.35				
2008	82.16	32.93	131.40				
2009	79.74	43.65	115.83	72.95	37.69	108.21	0.91
2010	97.39	41.19	153.59	89.97	34.02	145.91	0.92
2011	57.57	32.38	82.75	50.32	25.85	74.78	0.87
2012	93.52	51.51	135.53	83.02	42.52	123.53	0.89
2013	135.63	76.35	194.91	121.50	66.25	176.75	0.90
2014	75.59	48.41	102.77	59.57	35.53	83.61	0.79
2015	92.80	53.82	131.79	72.56	41.95	103.18	0.78
2016	199.00	109.49	288.51	172.94	92.32	253.55	0.87
2017	159.31	89.22	229.41	129.63	73.41	185.86	0.81
2018	112.36	38.57	186.16	98.72	25.44	172.00	0.88

Sources and references

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