

ECOREGION Barents Sea and Norwegian Sea
STOCK Cod in Subareas I and II (Norwegian coastal waters cod)

Advice for 2015

ICES advises as last year ([ICES, 2013](#)) on the basis of the Norwegian rebuilding plan, which requires access to the 2014 autumn survey results that will be available in December. If the spawning-biomass index in the 2014 autumn survey is lower than the index in 2013, the fisheries regulations should aim at a reduction of F in 2015 of at least 45% relative to 2009. If the survey index is higher than in 2013, the plan stipulates that measures taken in 2014 should continue in 2015.

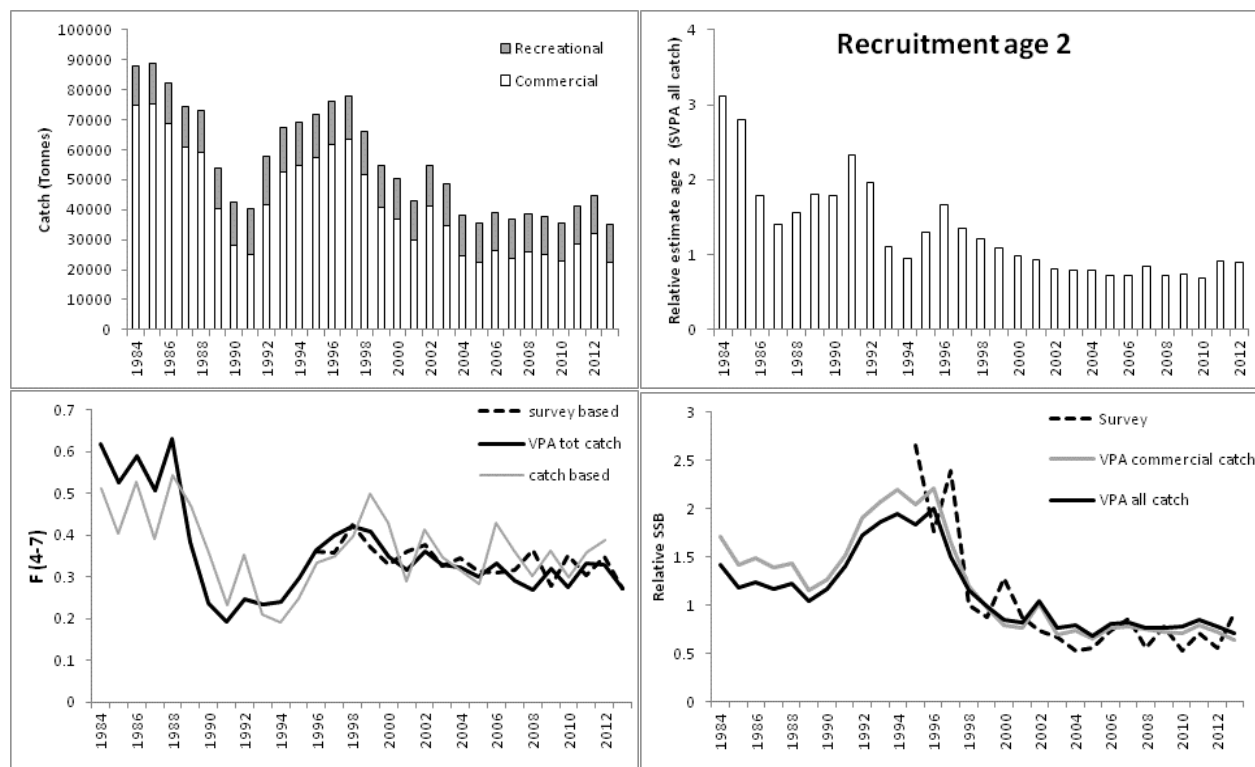


Figure 3.3.3.1 Cod in Subareas I and II (Norwegian coastal waters cod). Landings, recruitment, fishing mortality estimates, and relative SSB estimates (1 = average 1995–2013).

This is a trends-based assessment. The survey indicates that the SSB is close to its lowest value. Recruitment has remained low in recent years. F appears variable without a clear trend since 2000.

Management plans

A rebuilding plan agreed by the Norwegian authorities (Annex 3.3.3) was evaluated by ICES in 2010 ([ICES, 2010](#)). ICES considers the proposed plan to be provisionally consistent with the precautionary approach.

Scientific basis

Stock data category	3.0 (ICES, 2014a).
Assessment type	Based on survey trends.
Input data	Catch-at-age and an acoustic survey; commercial catches (landings, ages and length frequencies from catch sampling); one survey index (coastal survey, NCoast-Aco-4Q); annual maturity data from surveys; natural mortalities assumed, $M = 0.2$.
Discards and bycatch	Not included, considered negligible.
Indicators	None.
Other information	Scheduled to be benchmarked in January 2015.
Working group	Arctic Fisheries Working Group (AFWG).

Outlook for 2015

A trends-based assessment is provided for this stock. No fishing possibilities can be projected on this basis.

Rebuilding plan

The rebuilding plan (Annex 3.3.3) was put into operation in 2011. The plan specifies the following reductions in fishing mortality:

Action step ¹	1	2	3	4	5	6 and later
Reduction of F relative to F ₂₀₀₉	15%	30%	45%	60%	75%	keep F at or below 0.1

¹ A new step is initiated when the most recent survey index for SSB is lower than the index in the previous year (and at the same time the most recent estimate of F is above 0.10).

The spawning–stock biomass (SSB) index in the 2010 survey was below the index in the 2009 survey. Thus 2011 was step 1. This means that the regulation in 2011 was aimed at a 15% reduction of F relative to F₂₀₀₉. The 2011 survey gave a higher SSB index than in 2010, allowing the regulation for step 1 to continue in 2012. The 2012 survey resulted in a lower SSB index compared to 2011, and 2013 was therefore the step 2 where regulations should aim for F at least 30% below F₂₀₀₉. The 2013 survey gave increased SSB-index, allowing for the existing regulations to be continued in 2014. 2014 is still step 2.

The trend for the stock appears stable. Under these circumstances regulations should be put in place that reduce catches in proportion to the required reductions in F. If the 2014 SSB index is above the 2013 index, application of the rebuilding plan implies that the regulations should ensure that catch in 2015 is at least 30% below the 2009 value. If the SSB index in 2014 is lower than the index in 2013, the fisheries regulations should ensure a reduction of catch in 2015 of at least 45% relative to 2009 (step 3).

Management considerations

For 2013 the rebuilding plan specified a 30% reduction of F compared to 2009. For 2013 no additional regulations, supplementing those already in place in 2011 and 2012, have been communicated to ICES. According to the catch estimates the catches of coastal cod in 2013 was reduced by 30% compared to 2012, but only 10% compared to 2009. To obtain the reductions implied by the rebuilding plan, stronger restrictions are required in all areas where coastal cod is distributed.

Sources

- ICES. 2010. Request by the Norwegian ministry of fisheries and coastal affairs: Evaluation of a rebuilding plan for coastal cod. *In* Report of the ICES Advisory Committee, 2010. ICES Advice, 2010, Book 3, Section 3.3.3.1.
- ICES. 2013. Cod in Subareas I and II (Norwegian coastal waters cod). *In* Report of the ICES Advisory Committee, 2013. ICES Advice 2013, Book 3, Section 3.4.3.
- ICES. 2014a. Advice basis. *In* Report of the ICES Advisory Committee, 2014. ICES Advice 2014, Book 1, Section 1.2.
- ICES 2014b. Report of the Arctic Fisheries Working Group (AFWG), 23–29 April 2014, Lisbon, Portugal. ICES CM 2014/ACOM:05.

Table 3.3.3.1 Cod in Subareas I and II (Norwegian coastal waters cod). ICES advice, management, and landings.

Year	ICES Advice	Predicted catch corresp.to advice	Agreed TAC ¹	Official landings ³	ICES landings ²
1987	Not assessed		40		61
1988	Not assessed		40		59
1989	No advice		40		40
1990	No advice		40		28
1991	Included in TAC for Subareas I and II		40		25
1992	Shot forecast included in TAC for I and II		40		42
1993	Shot forecast included in TAC for I and II		40		53
1994	No advice		40		55
1995	No advice		40		57
1996	No advice		40		62
1997	No advice		40		63
1998	No advice		40		52
1999	No advice		40		41
2000	No advice		40		37
2001	Reduce F considerably	22	40		30
2002	catches should be reduced by the same proportion as for Northeast Arctic cod	13	40		41
2003	Reduce F considerably	8	40		35
2004	A recovery plan	0	20		24
2005	A recovery plan	0	21		22
2006	A recovery plan	0	21		26
2007	A recovery plan	0	21		23
2008	A recovery plan	0	21		26
2009	Zero catch and a recovery plan	0	21		25
2010	Zero catch and a recovery plan	0	21		23
2011	Same advice as last year	0	21*		29
2012	Rebuilding plan, action dependent on autumn survey	-	21*		32
2013	Rebuilding plan, action dependent on autumn survey	-	21*		22
2014	Rebuilding plan, action dependent on autumn survey	-	21*		
2015	Rebuilding plan, action dependent on autumn survey	-			

Weights in thousand tonnes.

¹ These TACs have been added to the Norwegian TAC of Northeast Arctic cod.

² Estimated according to otolith type, does not include estimated recreational catches.

³ No official landings.

* Additional regulations were introduced to meet the objectives of the recovery plan, while the 21 000 t were still included in the combined TAC for coastal cod and Northeast Arctic cod.

Annex 3.3.3 Rebuilding plan

The rebuilding plan, as communicated to ICES by the Norwegian Ministry of Fisheries and Coastal Affairs, states:

“The overarching aim is to rebuild the stock complex to full reproductive capacity, as well as to give sufficient protection to local stock components. Until a biologically founded rebuilding target is defined, the stock complex will only be regarded as restored when the survey index of spawning stock in two successive years is observed to be above 60 000 tons¹. Importantly, this rebuilding target will be redefined on the basis of relevant scientific information. Such information could, for instance, include a reliable stock assessment, as well as an estimate of the spawning stock corresponding to full reproductive capacity.

Given that the survey index for SSB does not increase, the regulations will aim to reduce F^2 by at least 15 per cent annually compared to the F estimated for 2009. If, however, the latest survey index of SSB is higher than the preceding one – or if the estimated F for the latest catch year is less than 0.1 – the regulations will be unchanged.

Special regulatory measures for local stock components will be viewed in the context of scientific advice. A system with stricter regulations inside fjords than outside fjords is currently in operation, and this particular system is likely to be continued in the future.

The management regime employed is aiming for improved ecosystem monitoring in order to understand and possibly enhance the survival of coastal cod. Potential predators are – among others – cormorants, seals and saithe.

When the rebuilding target is reached, a thorough management plan is essential. In this regard, the aim will be to keep full reproductive capacity and high long-term yield.”

¹The average survey index in the years 1995–1998.

² Ages 4–7.