

Northern Shrimp in Division 3M

Advice September 2020 for 2021










Recommendation

The stock has increased from very low levels since 2014 and is now above Blim.

There are indications of improved recruitment in the 2020 survey data. These small shrimp could potentially add to the fishable stock in 2021 and 2022. Considering the uncertainty about the future recruitments and the response of the resource to resumed exploitation, Scientific Council advises that the catch in 2021 should not exceed the 2009 level (5 448 tonnes).

Management objectives

No explicit management plan or management objectives defined by the Commission. Convention general principles are applied. Advice is based on qualitative evaluation of biomass indices in relation to historic levels, and provided in the context of the precautionary approach framework (FC Doc. 04/18).

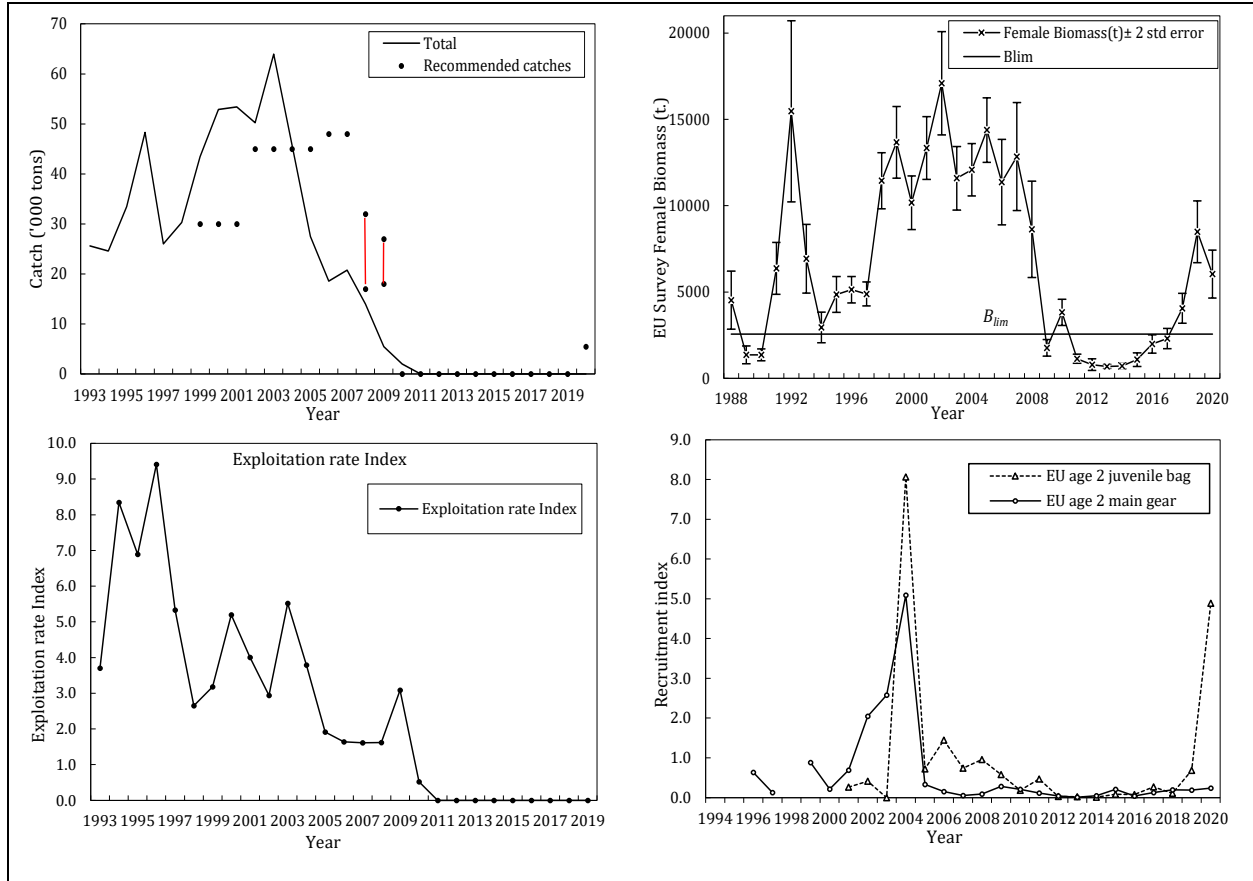
Convention objectives	Status	Comment/consideration	
Restore to or maintain at B_{msy}		Stock above B_{lim} . B_{msy} is unknown.	 OK
Eliminate overfishing		No fishery during 2011 – 2019. Small direct fishery possible in 2020.	 Intermediate
Apply Precautionary Approach		B_{lim} defined. No fishing mortality reference point defined	 Not accomplished
Minimise harmful impacts on living marine resources and ecosystems		VME closures in effect, sorting grids mandatory	 Unknown
Preserve marine biodiversity		Cannot be evaluated	

Management unit

The Northern Shrimp stock on Flemish Cap is considered to be a separate population.

Stock status

The stock has increased since 2014, and in 2020 it has a very low probability (<2.5%) of being below B_{lim} . Recruitment has been poor during the last decade; however, with an overall increasing trend. There are indications of improved recruitment in 2020. Preliminary information from 2020 indicates very low fishing effort, and therefore very low exploitation rate, in the first half of the year



Reference points

Scientific Council considers that a female survey biomass index of 15% of its maximum observed level provides a proxy for B_{lim} (SCS Doc. 04/12).

Projections

Quantitative assessment of risk at various catch options is not possible for this stock at this time.

Assessment

No analytical assessment is available. Evaluation of stock status is based upon fishery and research survey data.

The next assessment will take place prior to the NAFO Annual Meeting in September 2021.

Human impact

Mainly fishery related mortality and low bycatch in other fisheries. Other sources (e.g. pollution, shipping, oil-industry) are considered minor.

Biological and Environmental Interactions

Multispecies models (Pérez-Rodríguez et al. 2016, Pérez-Rodríguez and D. González-Troncoso 2018) suggest that predation by cod and redfish, together with fishing, were the main factors driving the shrimp stock to the collapse after 2007. In the most recent years, decreasing redfish and cod stocks have likely resulted in reduced predation mortality on shrimp, consistent with a period of increase in the shrimp stock.

Results of modelling suggest that, in unexploited conditions, cod and redfish would be expected to be a highly dominant component of the system, and high shrimp stock sizes like the ones observed in the 1998 – 2007 period would not be a stable feature in the Flemish Cap.

Fishery

This fishery is effort-regulated. The effort allocations were reduced by 50% in 2010 and a moratorium was imposed in 2011. The fishery was reopened in 2020. Fishing effort and catches have been close to zero in the first half of 2020. Recent catches and agreed effort by the NAFO Commission were as follows:

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
NIPAG	2 000	0	0	0	0	0	0	0	0	0	0 ¹
STATLANT 21	1976	0	0	0	0	0	0	0	0	0	
Effort (Agreed Days)	5227	0	0	0	0	0	0	0	0	0	2640
SC Recommended Catches (tonnes)	ndf	ndf	ndf	ndf	ndf	ndf	ndf	ndf	ndf	ndf	5448

¹ preliminary catch during the first half of 2020

Effects of the fishery on the ecosystem

The fishery was closed to directed fishing beginning from 2011 to 2019.

Special comment

In September 2019, the Commission asked the SC to advise on the possible sustainable management methods for northern shrimp in div. 3M, including quota, fishing effort, periods or other technical measures. In its response, SC recommends that the management of 3M shrimp be converted from the existing “effort regulation” to “catch regulation” in line with all other stocks in the NAFO Regulatory Area. Full detail of the response is available in SCS Doc. 19-023.

Source of Information

SCR Doc. 20/051