Northern Shrimp in Divisions 3LNO

Advice September 2016 for 2017

Recommendation for 2017

No directed fishery as the stock is below B_{lim}.

Management objectives

No explicit management plan or objectives defined by Fisheries Commission. General convention objectives (GC Doc. 08/3) 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 below B_{lim}
Eliminate overfishing	🟢	No directed fishery
Apply Precautionary Approach	🟡	B_{lim} is defined. No fishing mortality reference point defined
Minimise harmful impacts on living marine resources and ecosystems	🟢	No directed fishery
Preserve marine biodiversity	⚪	Cannot be evaluated

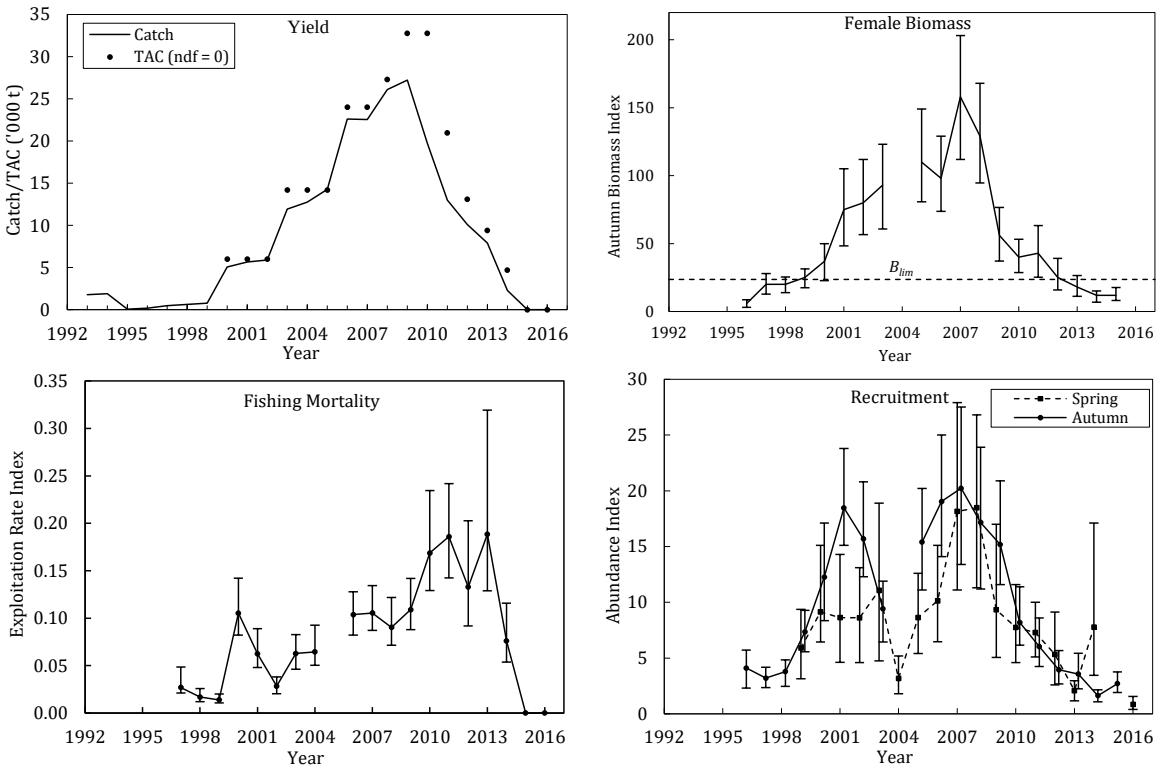
🟢 OK
🟡 Intermediate
🔴 Not accomplished
⚪ Unknown

Management Unit

The stock in Div. 3LNO is assessed and managed as a discrete population (see special comment).

Stock Status

The stock has declined since 2007, and in 2015 the risk of being below B_{lim} is greater than 95%. Given expectations of poor recruitment, the stock is not expected to increase in the near future.



Reference points

Scientific Council considers that a female survey biomass index of 15% of its maximum observed level provides a proxy for B_{lim} (23 700) (SCS Doc. 04/12). B_{lim} was updated from 19 330 to 23 700 as a result of revision of the series due to the incorporation of the new version of Ogmap.

Projections:

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

Assessment

Based upon a qualitative evaluation of trends in stock biomass, fishing mortality proxy and recruitment. Input data are research survey indices and fishery catches (NIPAG 2016).

Next full assessment is planned for 2017.

Human impact

Mainly fishery related mortality has been documented. Other sources (e.g. pollution, shipping, oil-industry) are considered minor.

Biological and Environmental Interactions

Both stock development and the rate at which changes might take place can be affected by changes in predation, in particular by cod, which has been estimated to consume large amounts of shrimp. The size of the cod stocks in Div. 2J3KL and Div. 3NO have increased, but remain at low levels . Some other groundfish (e.g. redfish) which consume shrimps are known to have increased, but the impact on the shrimp stock has not been quantified.

Temperature in the stock area had been warming up to 2011 but was lower than average in 2014-2015. Effects of temperatures on shrimp distribution, recruitment, growth and survival are poorly understood.

Fishery

The fishery, until 2014, was a directed bottom trawl fishery and there is little or no bycatch of shrimp in other trawl fisheries. The fishery in Div. 3LNO is regulated by quota.

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Enacted TAC[1]	24029	27306	32767	32767	20971	13108	9393	4697	ndf	ndf
STATLANT 21	22315	26097	27236	19745	13013	10099	7919	2282	0	
NIPAG[2]	23570	25407	25900	20536	12900	10108	8647	2289	0	

[1] Includes autonomous TAC as set by Denmark (in respect of Faroes and Greenland).
[2] NIPAG catch estimates have been updated using various data sources (see p. 13, SCR Doc 14/048).

Effects of the fishery on the ecosystem

No specific information available. General impacts of fishing gears on the ecosystem should be considered. An area of Divs. 3LNO has been closed to protect sponge, seapens and coral.

Special Comments

Genetic analysis has been completed. Shrimp in Div. 3LNO are genetically distinct from those in Div. 3M and the Gulf of Maine, but not from those further north. Additional work is ongoing to investigate the contribution of stocks north of Div. 3L to the production of Div. 3LNO shrimp.

Sources of information

SCR Doc. 14/048, 15/048, /055; http://www.dfo-mpo.gc.ca/Library/352955.pdf