Thorny skate in Divisions 3LNO and Subdivision 3Ps   Advice June 2020 for 2021-2022

Recommendation for 2021-2022

The stock has been stable at recent catch levels (approximately 3 511 tonnes, 2015 - 2019). However, given the low resilience of this species and higher historic stock levels, Scientific Council advises no increase in catches.

Management objectives

No explicit management plan or management objectives defined by the Commission. Convention General Principles are applied.

| Convention objectives	Status	Comment/consideration
Restore to or maintain at B_{msy}	🟡	B_{msy} unknown, stock at low level
Eliminate overfishing	🟡	F_{msy} unknown, fishing mortality is low
Apply Precautionary Approach	🟢	B_{lim} defined from survey indices
Minimise harmful impacts on living marine resources and ecosystems	🟡	No specific measures, general VME closures apply
Preserve marine biological diversity	⚪	Cannot be evaluated

🟢 OK
🟡 Intermediate
🔴 Not accomplished
⚪ Unknown

Management unit

The management unit is confined to NAFO Div. 3LNO, which is a portion of the stock that is distributed in NAFO Div. 3LNO and Subdivision 3Ps.

Stock status

The stock is currently above B_{lim}. The probability that the current biomass is above B_{lim} is >95%. Total survey biomass in Divs 3LNOPs has remained stable since 2007 but is still lower than the levels observed at the end of the 1980s. Recruitment in 2017 was above average but declined to below average in 2018 and was average in 2019. Fishing mortality is currently low.
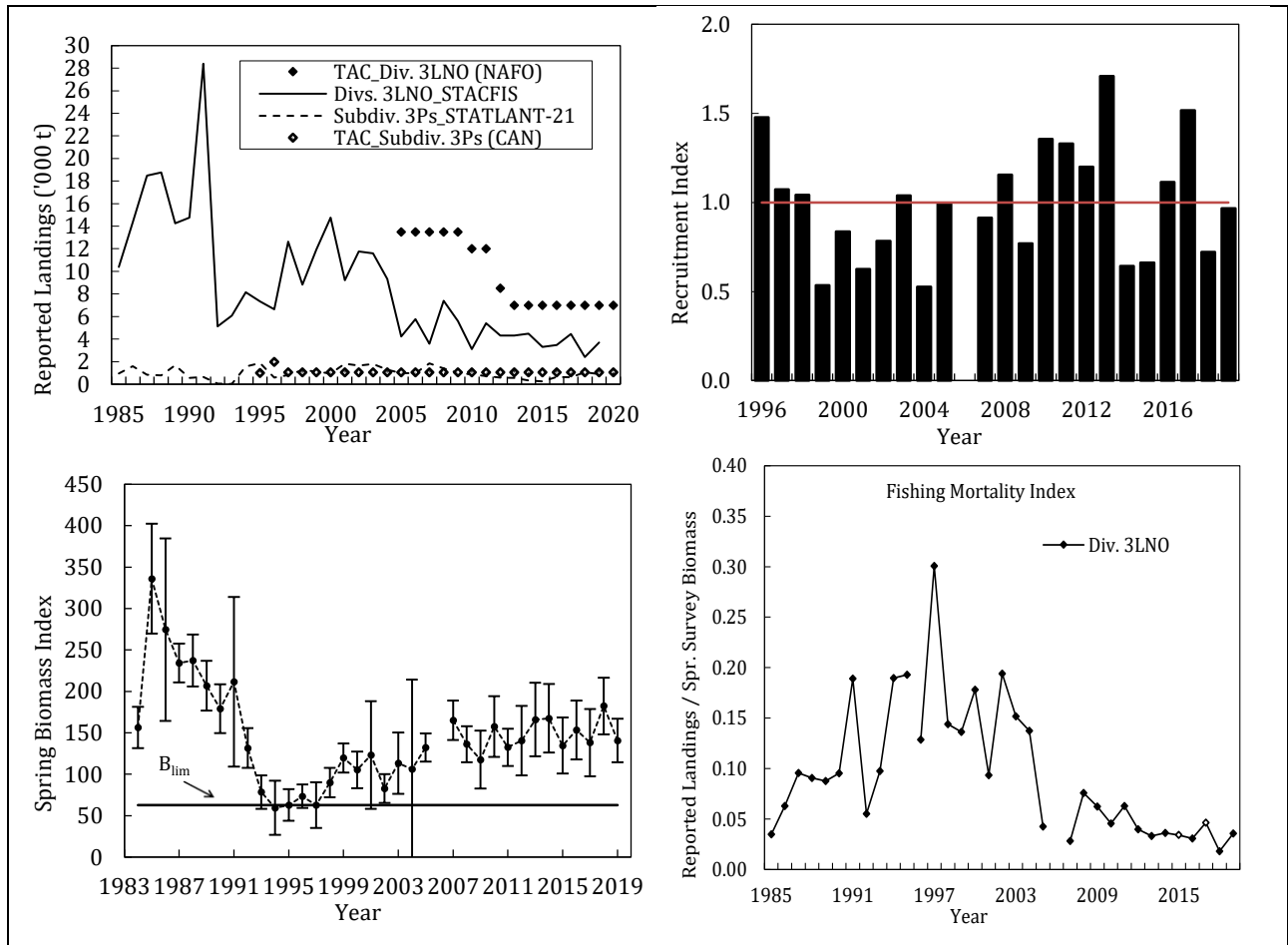
Reference points

B_{lim} defined from survey indices as B_{loss} (NAFO SCS 15/12)

Assessment

Based upon a qualitative evaluation of stock biomass trends and recruitment indices. The assessment is considered data limited and, as such, associated with a relatively high uncertainty. Input data are research survey indices and fishery data. The next full assessment of this stock will be in 2022.

Human impact

Mainly fishery related mortality has been documented. Mortality from other human sources (e.g. pollution, shipping, oil-industry) are undocumented.

Biology and Environmental interactions

Thorny skate are found over a broad range of depths (down to 840 m) and bottom temperatures (-1.7 - 11.5ºC). Thorny skate feed on a wide variety of prey species, mostly on crustaceans and fish. Recent studies have found that polychaete worms and shrimp dominate the diet of thorny skates in Div. 3LNO, while hyperiids, snow crabs, sand lance, and euphausiids are also important prey items.

The Grand Bank (3LNO) EPU is currently experiencing low productivity conditions and biomass has declined across multiple trophic levels and stocks since 2014.

Fishery

Thorny skate is caught in directed gillnet, trawl and long-line fisheries. In directed thorny skate fisheries, Atlantic cod, monkfish, American plaice and other species are landed as bycatch. In turn, thorny skate are also caught as bycatch in gillnet, trawl and long-line fisheries directing for other species. The fishery in NAFO division 3LNO is regulated by quota. Catches are well below the TAC because Canada has not been fishing on this stock.

Recent catch estimates and TACs ('000 tonnes) are:

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Div. 3LNO:										
TAC	12	8.5	7	7	7	7	7	7	7	7
STATLANT 21	5.5	4.3	4.4	4.5	3.3	3.5	4.2	1.5	3.7	
STACFIS	5.4	4.3	4.4	4.5	3.4	3.5	4.5	2.4	3.7	

Effects of the fishery on the ecosystem

No specific information is available. General impacts of fishing gears on the ecosystem should be considered.

Special comments

The life history characteristics of thorny skate result in low rates of population growth and are thought to lead to low resilience to harvesting if the stock becomes depleted to low levels.

Sources of Information

SCR Doc. 14/23.15/40,20/04,10,14,41; SCS Doc. 20/07,09,13