

Thorny skate in Divisions 3LNO and Subdivision 3Ps







Advice June 2024 for 2025-2026


Recommendation for 2025 and 2026


No new survey information is available to determine stock status, however, given the low level of thorny skate catch in recent years (average 3 460 t, 2019 - 2023), it is unlikely that there have been major changes to the state of the stock. Given the low resilience to fishing mortality 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. General principles from the *Convention on Cooperation in the Northwest Atlantic Fisheries* are applied.

Convention Principle	Status	Comment
Restore to or maintain at Bmsy		Bmsy and Blim undefined, stock at low level
Eliminate Overfishing (Stock)		Flim undefined, F is low
Eliminate Overfishing (Ecosystem)		Total EPU catches < 2TCI
Apply Precautionary Approach		No reference points defined
Minimize harmful impacts on living marine resources and ecosystems		Directed fishery, VME closures in effect, Effectiveness of bycatch regulations uncertain
Preserve marine biodiversity		Cannot be evaluated

 OK

 Intermediate

 Not accomplished

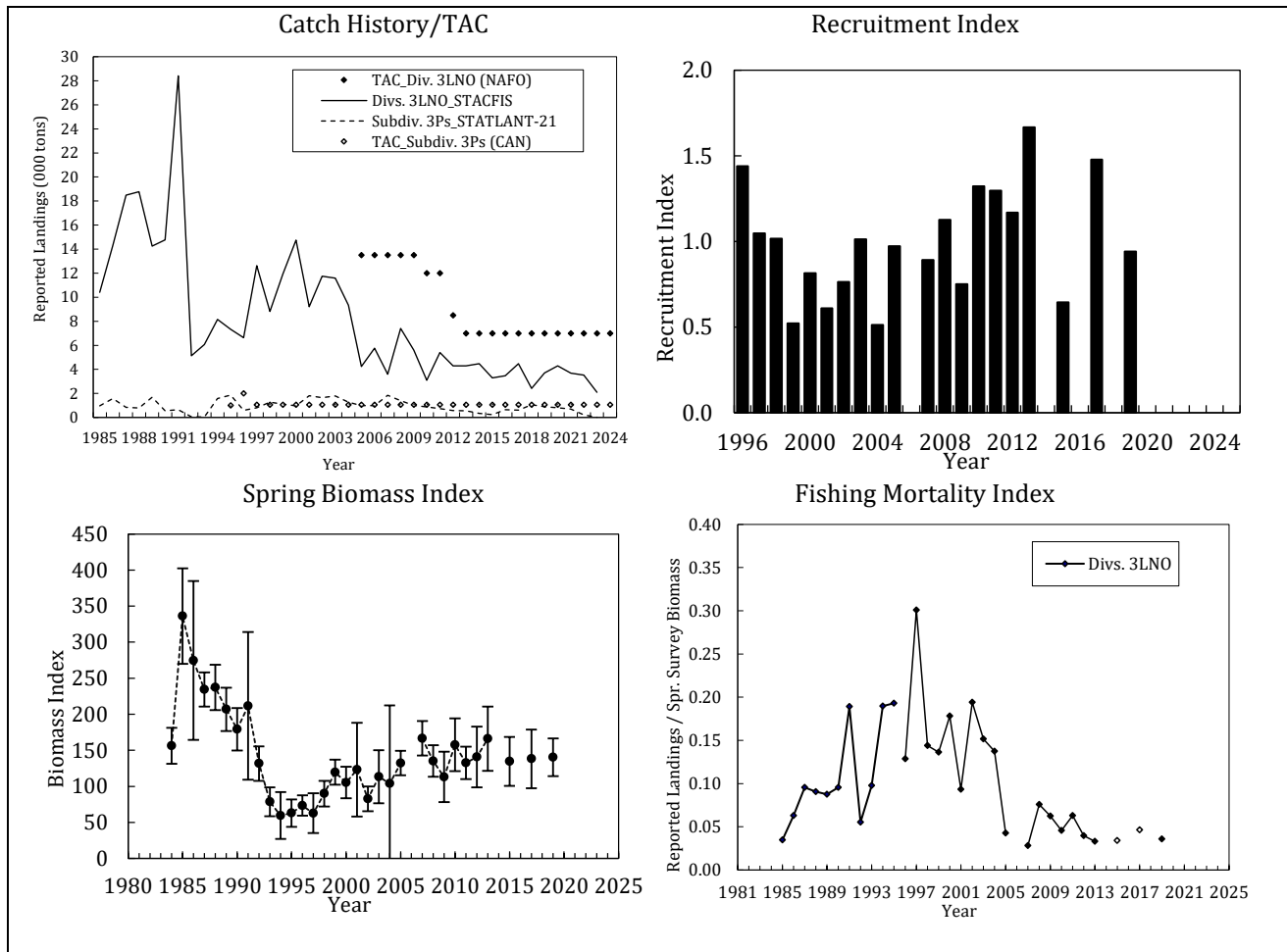
 Unknown

Management unit

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

Stock status

The stock was above B_{lim} in 2019. No new survey information is available to determine stock status. However, due to the longevity of the species and the low level of catch in recent years, it is unlikely that there have been major changes to the state of the stock. Recruitment is currently unknown. Fishing mortality is currently unknown but thought to be low.



Reference points

There are no accepted reference points for this stock. The previously used B_{lim} is no longer applicable.

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. Due to the lack of conversion factors in Canadian surveys, and incomplete or missing surveys, survey data after 2019 were not considered in evaluation of stock status.

The next full assessment of this stock will be in 2026.

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 - 11.5°C). 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 Divisions 3LNO, while hyperiids, snow crabs, sand lance and euphausiids are also important prey items.

The Grand Bank (3LNO) Ecosystem Production Unit (EPU) is currently experiencing low productivity conditions, with EPU biomass well below pre-collapse levels (pre-1990s). Rebuilding was observed since the 1990s, but declines across multiple trophic levels and stocks occurred after 2014. While positive signals have been observed since these declines, biomass has yet to return to the early-mid 2010s level.

Ecosystem sustainability of catches

The impact of bottom fishing activities on VMEs in the NRA was last assessed in 2021. The risk of Significant Adverse Impacts (SAIs) on sponge and large gorgonian VMEs was assessed to be low, while this risk for sea pen VMEs has been assessed as intermediate. The risks of SAIs on small gorgonian, black coral, bryozoan and sea squirt VMEs were assessed as high. Areas within Divisions 3LNOPs have been closed to bottom fishing to protect VMEs.

3LNOPs thorny skate is included in the benthivore guild of the Grand Bank (3LNO) Ecosystem Production Unit (EPU). Other NAFO managed stocks in this guild within the EPU include 3LNO yellowtail flounder, 3LNO American plaice, 3NO witch flounder and 3LNO shrimp. There is no TCI information for the Southern Newfoundland (3Ps) EPU. The 3LNO Catch/TCI in 2023 was below the 2TCI ecosystem reference point (3LNO Benthivore Catch₂₀₂₃/TCI=0.65).

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 Divisions 3LNO is regulated by quota.

Recent catch estimates and TACs are:

Divisions 3LNO:	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
TAC	7	7	7	7	7	7	7	7	7	7
STATLANT 21	3.3	3.5	4.2	1.5	3.7	4.0	4.0	NA ¹	NA ¹	
STACFIS	3.4	3.5	4.5	2.4	3.7	4.3	3.7	3.5	2.1	

¹NA - In 2022-2023, STATLANT 21 information is incomplete

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 fishing mortality.

Sources of Information

SCR Doc. 24/007, 008, 037, 038; SCS Doc. 24/06, 08, 09, 11.