Report on Ecosystem Sustainability of Catches

Since 2005 the Grand Bank (3LNO) and the Flemish Cap (3M) Ecosystem Production Units (EPUs) have shown aggregate catch levels by functional guild which are consistent with the productivity of the EPUs and the prevention of high risk of ecosystem overfishing.

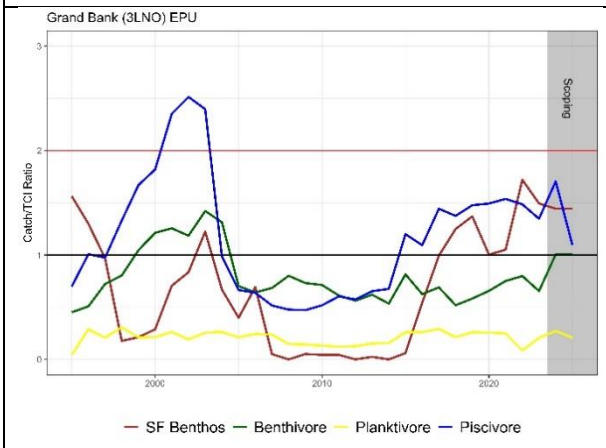
Scoped catch levels for 2024-2025 remain below the 2TCI Ecosystem Reference Point, but piscivore guild catches in the Flemish Cap (3M) are scoped to be near the 2TCI boundary.

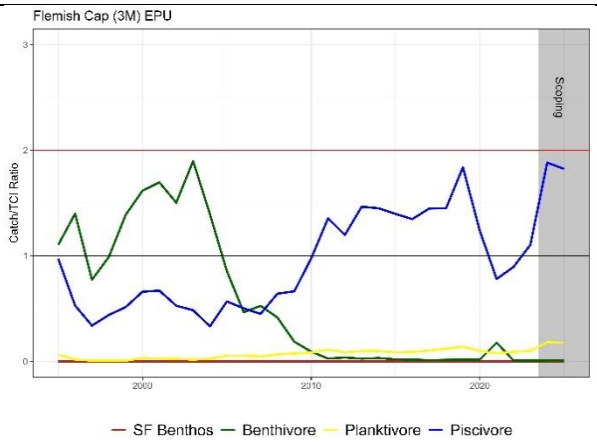
Approach:

Total Catch Index (TCI): This index is an indicator of the level of aggregated catch for a given functional guild (aggregate of species) that is consistent with the current productivity of the ecosystem (ecosystem sustainability). The comparison of aggregate catches with TCI is informative of the risk of ecosystem overfishing.

NAFO has adopted 2TCI as an ecosystem reference point to inform on ecosystem overfishing (EO).

Analysis includes reported catches up to 2023, and scoping of likely catches for 2024-2025, assuming the SC recommended catch levels for 2025.





Summary:

During the 1960-1995 period, Ecosystem Production Units (EPUs) in the Newfoundland and Labrador, and Flemish Cap bioregions experienced sustained catch levels consistent with ecosystem overfishing.

Since 2005 aggregated catches for all functional guilds have been below the 2TCI Ecosystem Reference Point in the Grand Bank (3LNO) and the Flemish Cap (3M) EPUs.

The catch levels for 2023 indicate an intermediate risk of ecosystem overfishing on both the Flemish Cap (3M) and the Grand Bank (3LNO) EPUs.

All catch levels are consistent with preventing a high risk of ecosystem overfishing.

The scoping exercise indicates that catch levels in 2024-2025 would be below 2TCI, and consistent with an intermediate risk of ecosystem overfishing for both EPUs, but the piscivore guild catches in the Flemish Cap (3M) are scoped to be near the 2TCI boundary.

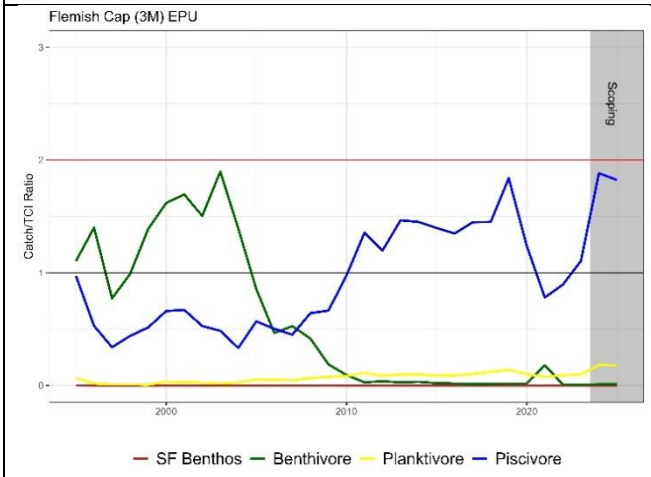
Risk of ecosystem overfishing:

Catch > 2TCI: high risk of ecosystem overfishing

Catch between 1 and 2 TCI: intermediate risk of ecosystem overfishing

Catch < TCI: low risk of ecosystem overfishing

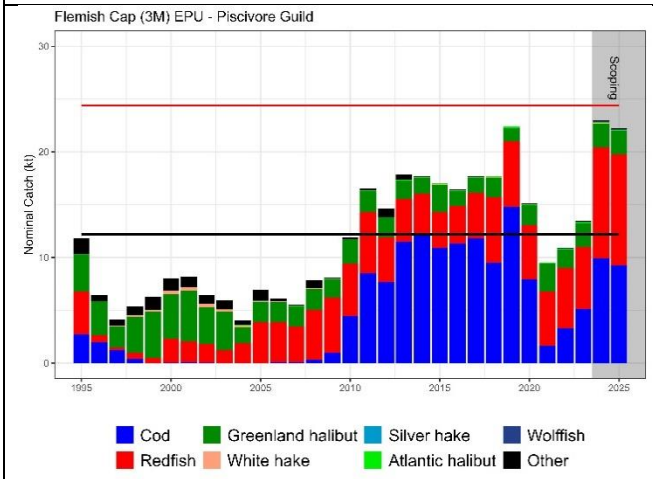
Flemish Cap (3M) Ecosystem Production Unit (EPU)



Overview

2023 catches for all functional guilds were below 2TCI, indicating that fishing levels have been consistent with preventing a high risk of ecosystem overfishing.

Piscivore guild catches for 2024-2025 are scoped to be near the 2TCI Ecosystem Reference Point.



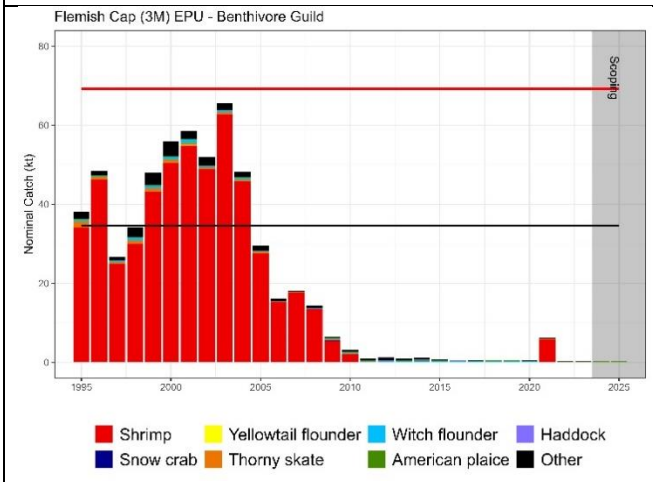
Piscivores Guild: intermediate risk of EO

Current 2TCI=24kt

Catches are dominated by redfish, Greenland halibut and Atlantic cod.

Redfish (3M), Greenland halibut (2+3KLMNO) and Atlantic cod (3M) stocks are managed by NAFO.

Catches for 2024-2025 are scoped to be near the 2TCI Ecosystem Reference Point.



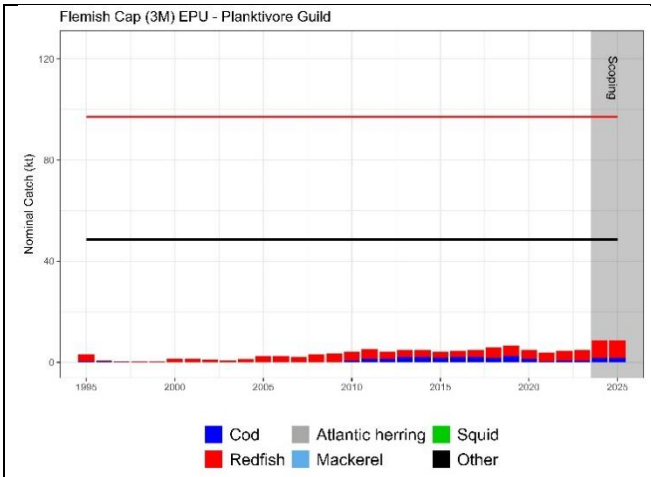
Benthivores Guild: low risk of EO

Current 2TCI=69kt

Catches are dominated by shrimp.

Shrimp (3M) stock is managed by NAFO.

Catches for 2024-2025 are scoped to be below TCI.



Planktivore Guild: low risk of EO

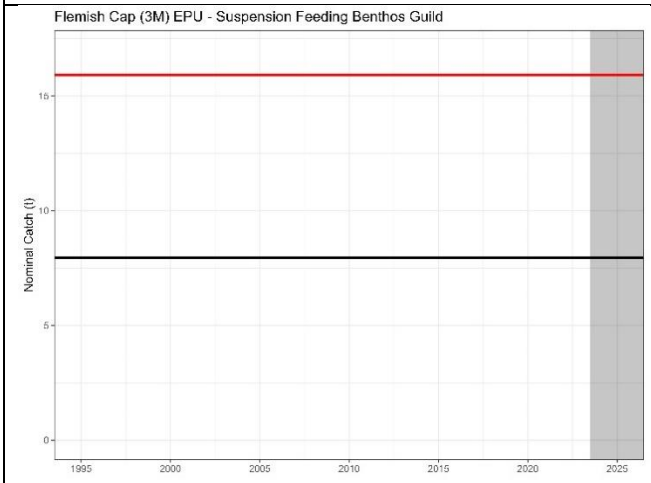
Current 2TCI=97kt

There are no fisheries directed to planktivores in this EPU.

Catches are dominated by younger ages of Atlantic cod and redfish.

A fraction of Atlantic cod and redfish catches is mapped to this functional guild to account for the planktivore production of these stocks during the early part of their life histories.

Catches for 2024-2025 are scoped to be below TCI.

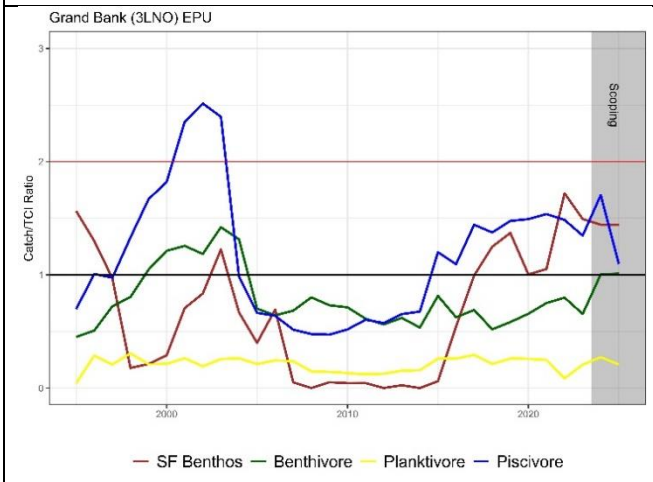


Suspension Feeding Benthos Guild: low risk of EO

Current 2TCI=159kt

There are no fisheries directed to Suspension Feeding Benthos in this EPU.

Grand Bank (3LNO) Ecosystem Production Unit (EPU)



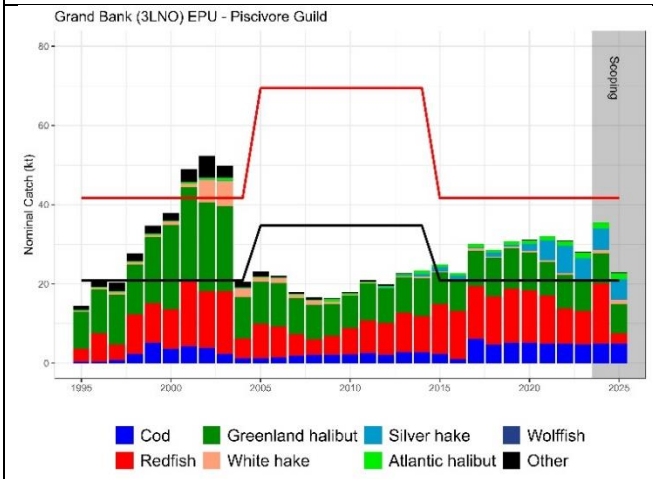
Overview

2023 catches for all functional guilds were below 2TCI, indicating that fishing levels have been consistent with preventing a high risk of ecosystem overfishing.

Catches for Piscivores and Suspension Feeding Benthos were between 1 and 2 TCI, indicating an intermediate risk of ecosystem overfishing.

Catches for Benthivores and Planktivores were below TCI, indicating a low risk of ecosystem overfishing.

Piscivore, Suspension Feeding Benthos and Benthivore guild catches for 2024-2025 are scoped to be between 1 and 2 TCI.



Piscivores Guild: intermediate risk of EO

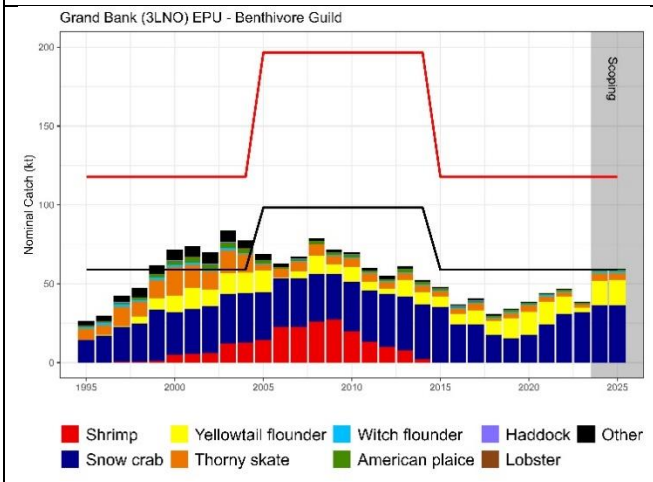
Current 2TCI=42kt

Catches are dominated by redfish, Greenland halibut and Atlantic cod.

Redfish (3LN and 3O stocks), Greenland halibut (2+3KLMNO) and Atlantic cod (3NO -moratorium-) stocks are managed by NAFO, while the Atlantic cod (2J3KL) stock is managed by Canada.

Catches of silver hake are noticeably increasing since 2018, likely linked to ecosystem changes related to warming trends.

Catches for 2024-2025 are scoped to be between 1 and 2 TCI.



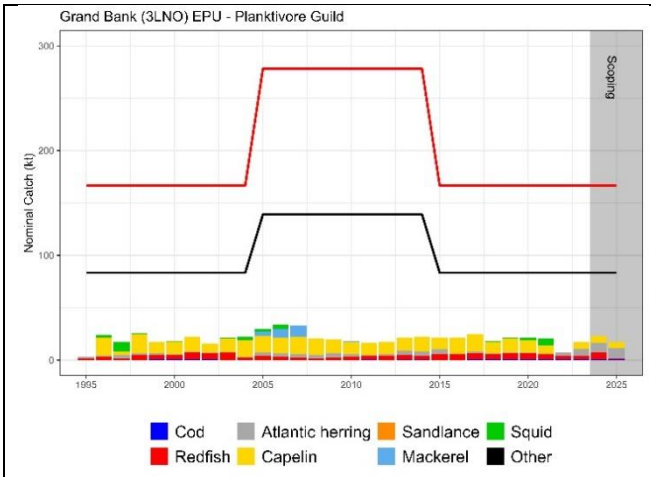
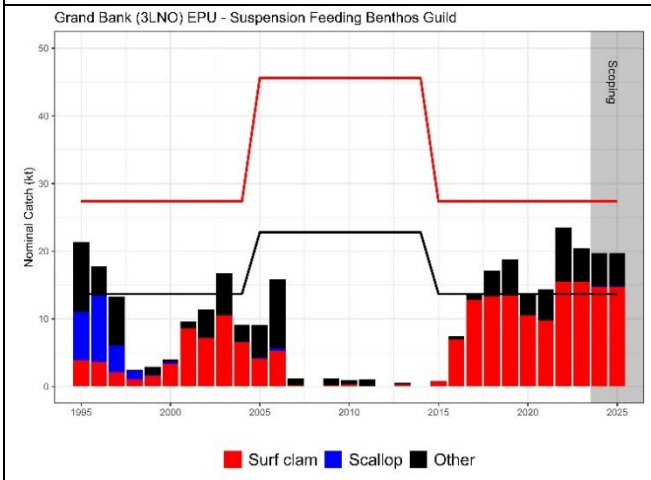
Benthivores Guild: low risk of EO

Current 2TCI=118kt

Catches are dominated by yellowtail flounder and snow crab.

Yellowtail flounder (3LNO) is managed by NAFO, while the snow crab (3LNO) is managed by Canada.

Catches for 2024-2025 are scoped to be near TCI.

	**Planktivore Guild: low risk of EO** Current 2TCI=167kt Catches are dominated by capelin (2J3KL). Capelin (2J3KL) is a stock managed by Canada. A fraction of Atlantic cod and redfish catches is mapped to this functional guild to account for the planktivore production of these stocks during early part of their life histories. Catches for 2024-2025 are scoped to be below TCI.
	**Suspension Feeding Benthos Guild: intermediate risk of EO** Current 2TCI=27kt Catches are dominated by surf clam. The surf clam fishery is managed by Canada. Catches for 2024-2025 are scoped to be between 1 and 2 TCI.

v) Support the Secretariat in developing a centralized data repository using ArcGIS online to host the data and data-products for scientific advice (request #5a).

Commission Request 5: *In relation to the habitat impact assessment component of the Roadmap (VME and SAI analyses), the Commission requests that Scientific Council to:*

Support the Secretariat in developing a centralized data repository using ArcGIS online to host the data and data-products for scientific advice.

Scientific Council Responded:

A data sub-group of WG-ESA was convened to address Commission Request 5(a). Discussions focused on four key areas of development, (i) production of 37 separate standard data layers, (ii) data management, (iii) ArcGIS online testing, and (iv) advancing standardized analysis and reporting tools. The ArcGIS data repository is expected to be fully operational in 2026.

A data sub-group of WG-ESA was convened to address Commission Request 5(a). Discussions focussed on four key areas of development, (i) production of 37 separate standard data layers, which builds upon the existing list of standard data layers for inclusion on a NAFO hosted ArcGIS online portal, (ii) data management, to develop a workflow for data management within ArcGIS online platform taking into account the requirements for metadata, file organization, file naming protocol, the format of the workflow itself, individual roles and responsibilities, (iii) ArcGIS online testing, to include the configuration and testing of the NAFO-hosted ArcGIS