



SFA 26A (BROWNS BANK NORTH) SCALLOPS (*PLACOPECTEN MAGELLANICUS*) UPDATE IN 2025

CONTEXT

The Fisheries Management Branch of Fisheries and Oceans Canada (DFO) has requested that the scallop fishing area (SFA) 26A (Browns Bank North) [Sea Scallop \(*Placopecten magellanicus*\)](#) stock be assessed relative to reference points that are consistent with the DFO Precautionary Approach, and provide harvest advice based on various potential catch levels for the 2026 fishery.

This Fisheries Science Response is from the regional peer review meeting of February 12, 2026 on Stock Status Update of Offshore Scallop (*Placopecten magellanicus*): SFAs 26A (Browns Bank North) and 27A (Georges Bank 'a').

SCIENCE ADVICE

Status

- The median biomass estimate in 2025 was 3,863 t (meats) for fully-recruited scallop; the probability the stock was above the limit reference point (LRP; 2,000 t) was greater than 0.99.

Trends

- Fully-recruited biomass has decreased since 2023, but remains above the historical low in 2017.
- The median recruit biomass estimate in 2025 was 321 t, which is below the long-term median (1994–2024) of 354 t. Recruit biomass has been stable near the long-term median since 2017.
- The estimated proportional exploitation rate was around 0.05 and below the long-term median from 2020–2023, but increased above the long-term median to 0.09 in 2024 and was higher than recent years (2017–2023).
- The estimated proportional natural mortality has varied without trend between 0.1–0.5 throughout the time series (1994–2025). In 2025, the estimated proportional natural mortality increased to 0.33 from 0.16 in 2024.

Ecosystem and Climate Change Considerations

- Rising bottom temperatures, ocean acidification, and aggregations of predators in areas of high scallop density affect scallop physiology, growth and natural mortality.

Stock Advice

- Based upon preliminary analysis of the 2025 fishery and DFO Maritimes Offshore Scallop Survey data, an interim total allowable catch (TAC) of 275 t (meats) was set in December 2025 for the 2026 SFA 26A fishery.
- The interim TAC of 275 t is estimated to result in an exploitation rate of 0.08 and an expected 20% decrease in biomass.
- While catch scenarios ranging from 0–375 t for 2026 are expected to result in a decrease in fully-recruited biomass for the stock, there is a probability of less than 0.01 that fully-recruited biomass will decrease below the LRP.

BASIS FOR ASSESSMENT**Assessment Details****Year Assessment Approach was Approved**

2024 (Keith et al. 2025b)

Assessment Type

Interim Year Update

Most Recent Assessment Date

1. Last Full Assessment: 2025 (DFO 2025c)
2. Last Interim-Year Update: 2024 (DFO 2024)

Stock Assessment Approach

1. Broad category: Single stock assessment model
2. Specific category: Delay difference, Biomass dynamics, State-space

Science advice is provided for this stock using a new spatially explicit stock assessment model (SEAM) that integrates both fishery and DFO Maritimes Offshore Scallop Survey (hereafter referred to as the 'survey') data (McDonald et al. 2021, Keith et al. 2025b).

Stock Structure Assumption

The offshore Sea Scallop fisheries conducted on Browns Bank SFA 26 were split into SFA 26A (Browns Bank North) and SFA 26B (Browns Bank South) in 1998 based on productivity and historical fishing patterns (Figures A1 and A2). SFA 26A was identified as being more productive, while SFA 26B is less productive and has separate management measures. Greater biomass densities are generally found on the northern and southeastern portions of the surveyed area in SFA 26A (Figures 3 and 4).

Reference Points

- Limit reference point (LRP): 2,000 t.
- Upper stock reference (USR): Not yet determined.
- Removal reference (RR): Not yet determined.
- Target reference point (TRP): Not yet determined.

Candidate reference points for SFA 26A have been developed and considered based on maximum sustainable yield (MSY) simulations (DFO 2025b, Keith et al. 2025a). The LRP of 2,000 t was adopted in 2025, and corresponds to $0.4B_{MSY}$ (biomass at maximum sustainable yield).

Data

- DFO Maritimes Offshore Scallop Survey Data (1994–2025)
- Commercial data (1994–2025)

Proportional exploitation rates represent the exploitation over a survey year (June–May) and are reported under the preceding calendar year (e.g., the 2024 value reflects exploitation from June 2024–May 2025).

In 2020, the survey was cancelled due to challenges associated with the COVID-19 pandemic. For 2020 and 2021, the median growth rate was used in the model, while the remainder of the inputs for 2020 were estimated by the model (Keith et al. 2025b).

ASSESSMENT

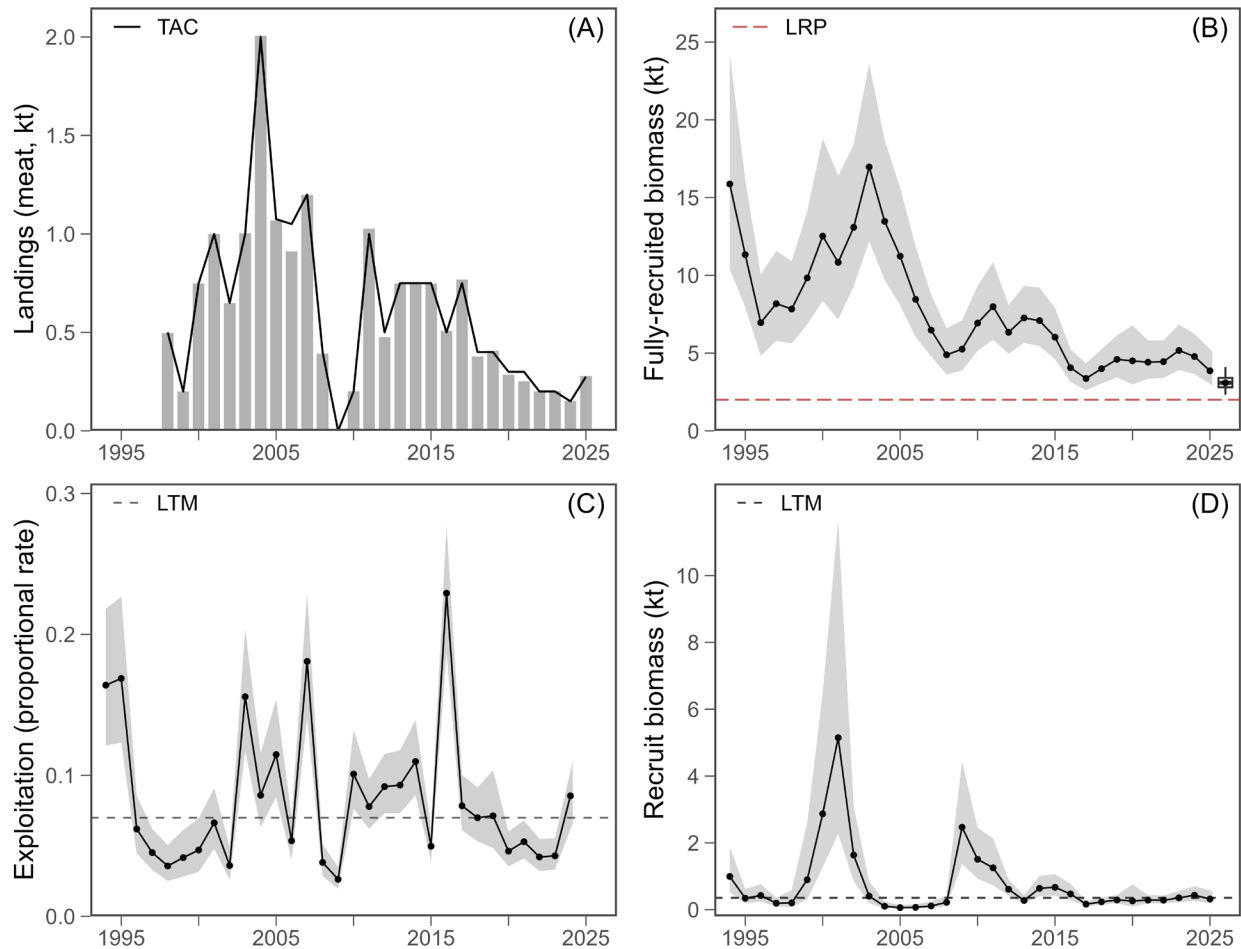


Figure 1. (A) Annual landings of scallop meats (kilotonnes, kt) from scallop fishing area (SFA 26A) between 1998 and 2025. The black solid line represents total allowable catch (TAC). Note that prior to 1998, landings from SFA 26A were combined with SFA 26B. (B) Mean model predicted biomass estimates (kt) for fully-recruited scallops (black solid line) in relation to the limit reference point (LRP) of 2,000 t (red dashed line). The grey shaded region represents the upper and lower 95% confidence intervals. The forecasted fully-recruited biomass for 2026, assuming a catch of 275 t, is displayed as a box plot with median (black dot, •), 50% confidence intervals (white box), and 95% confidence intervals (black whiskers). (C) Estimated proportional exploitation rate (black solid line) in relation to long-term median (1994–2023, LTM) exploitation rate (grey dashed line). The shaded region represents the upper and lower 95% confidence intervals. Proportional exploitation rates represent the exploitation over a survey year (June–May) and are reported under the preceding calendar year (e.g., the 2024 value reflects exploitation from June 2024–May 2025). (D) Mean model predicted biomass estimates (kt) for recruit scallops (black solid line) in relation to long-term median (1994–2024, LTM) recruit biomass (grey dashed line). The grey shaded region represents the upper and lower 95% confidence intervals.

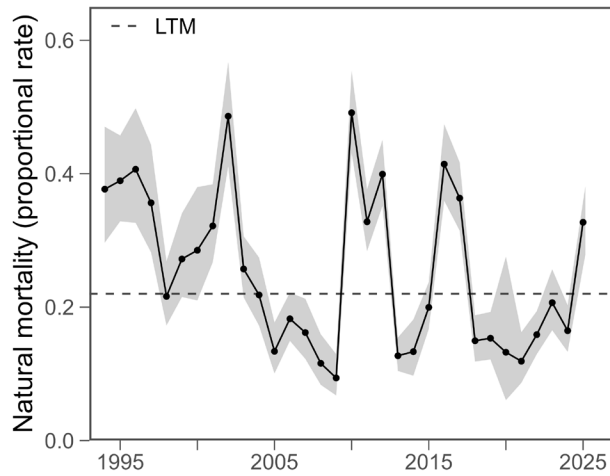


Figure 2. Estimated proportional natural mortality (black solid line), in relation to long-term median (1994–2024, LTM) natural mortality rates (grey dashed line). The grey shaded region represents the upper and lower 95% confidence intervals.

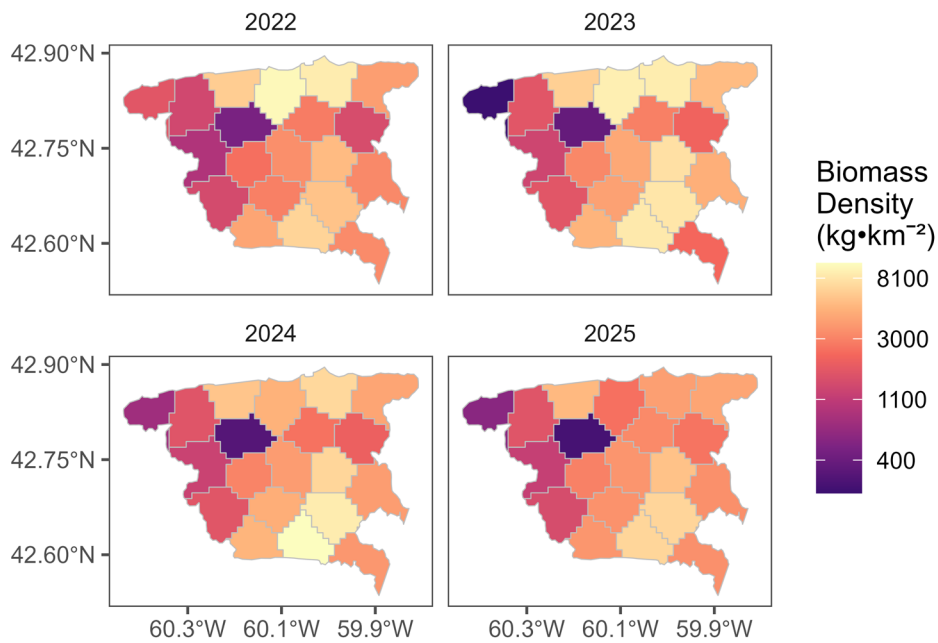


Figure 3. Model-estimated biomass densities ($\text{kg}\cdot\text{km}^{-2}$) of fully-recruited scallops across the scallop fishing area 26A model domain from 2022 to 2025.

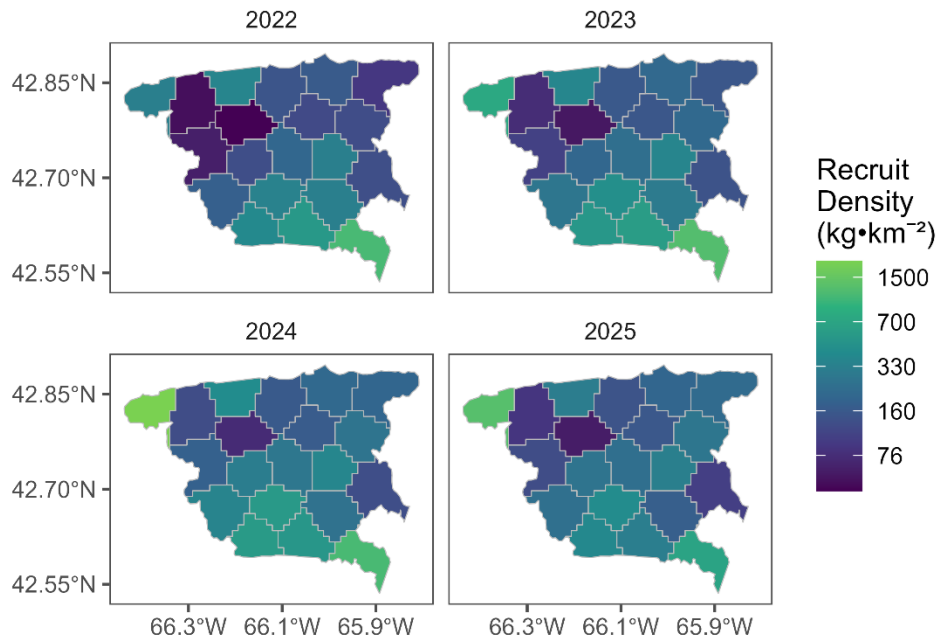


Figure 4. Model-estimated biomass densities ($\text{kg}\cdot\text{km}^{-2}$) of recruit scallops across the scallop fishing area 26A model domain from 2022 to 2025.

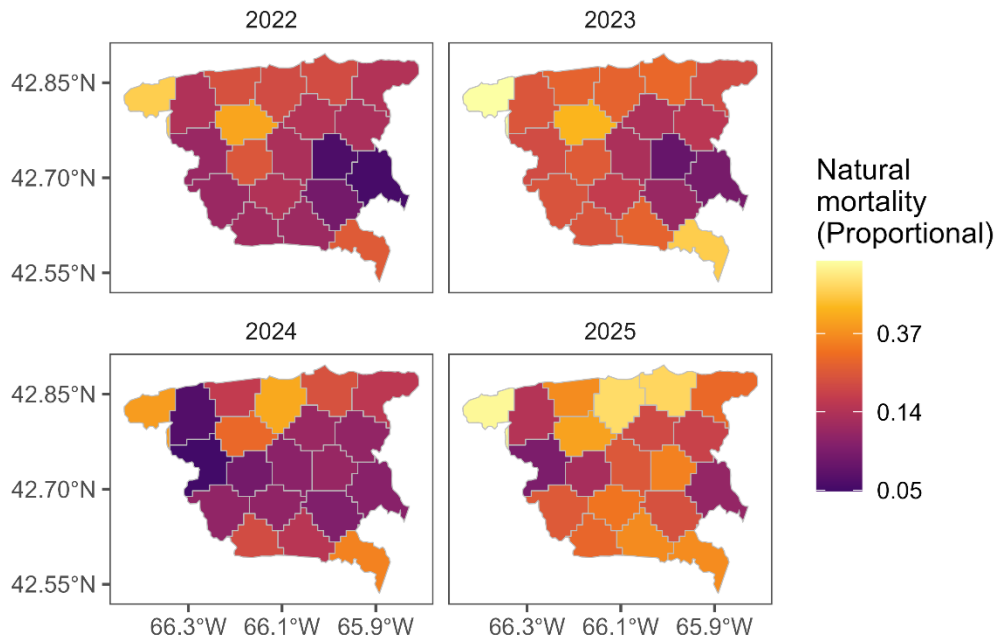


Figure 5. Model-estimated proportional natural mortality across the scallop fishing area 26A model domain from 2022 to 2025.

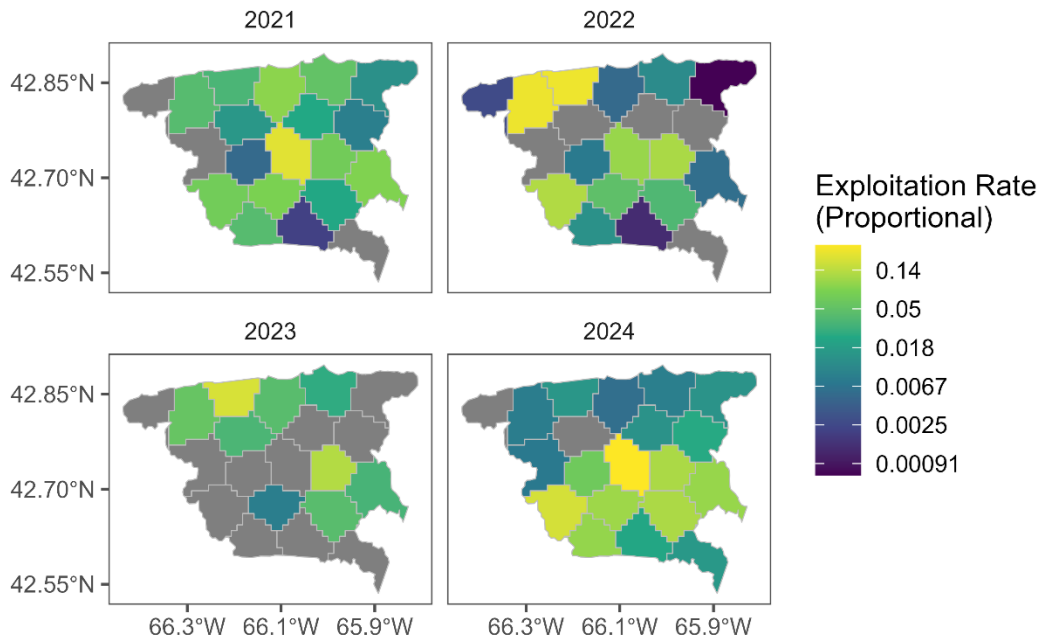


Figure 6. Model-estimated proportional exploitation rates across the scallop fishing area 26A model domain from 2021 to 2024. Proportional rates represent the exploitation over a survey year (June–May) and are reported under the preceding calendar year (e.g., the 2024 value reflects exploitation from June 2024–May 2025). Grey polygons indicate an exploitation rate of zero.

Stock Status and Trends

Fully-recruited Biomass

The modelled median fully-recruited biomass has decreased since 2023, but remains above the historical low in 2017 (Figure 1B). Although biomass has remained above the LRP throughout the time series, current levels are relatively low compared to the elevated values seen between 2000–2005 and the record high in 2003. The spatial distribution of biomass has been relatively stable since 2022, with higher densities on the northern and southeastern edges of the model domain, and lower densities towards the west (Figure 3).

Recruit Biomass

Since 2017, the modelled median recruit biomass has remained relatively close to the long-term median of 354 t. The last large recruitment event occurred between 2009 and 2011 (Figure 1D). The spatial distribution of recruit biomass has been relatively stable since 2022 with higher recruitment occurring in locations with higher fully-recruited biomass, such as the southeastern edge of the model domain (Figure 4).

Natural Mortality

The estimated proportional natural mortality has fluctuated over the time series, with elevated values occurring approximately every 5–7 years. The 2025 estimate of 0.33 is a substantial increase from 0.16 in 2024. The 2025 estimate is comparable to levels observed in 2017, and is above the long-term median of 0.22 (Figure 2). Since 2022, natural mortality has generally been higher in the northwestern portion of the model domain (Figure 5).

Fishing Mortality

Estimated proportional exploitation rates have fluctuated without any clear trend for most of the time series. Exploitation rates decreased from a historical high in 2016, and were comparably low until increasing to 0.09 in the most recent year (Figure 1C). The spatial distribution of exploitation has varied since 2022 (Figure 6). In 2024, proportional exploitation rates were highest in the middle and south of the bank.

Current Status

The 2025 median biomass estimate of 3,863 t is above the LRP with a greater than 0.99 probability.

History of Landings & Total Allowable Catch (TAC)

Scallop landings have been monitored for Browns Bank (SFA 26) since 1990. The current monitoring structure began in 1998 (Figure 1A), when Browns Bank was divided into SFA 26A (Browns Bank North) and SFA 26B (Browns Bank South) for quota allocation purposes (DFO 2025a). Table 1 shows the total annual landings, and associated TACs (pre-quota reconciliation), for SFA 26A since the separation of Browns Bank.

Table 1: Pre-quota reconciliation total allowable catch (TAC), scallop landings (meats, weight in tonnes), and effort (in hour-metres) by calendar year for scallop fishing area 26A from 1998 to 2025. In 2009, the TAC was set to 0, thus no fishing occurred from January to December of that year. The landings values shown are those used in the model and are based on logbook data available to DFO Science.

Year	TAC	Landings	Effort
1998	500	498	32,598
1999	200	200	11,435
2000	750	748	27,400
2001	1,000	999	22,248
2002	650	649	11,026
2003	1,000	1,003	17,948
2004	2,000	2,007	58,115
2005	1,075	1,068	34,017
2006	1,050	912	41,094
2007	1,200	1,198	44,279
2008	400	393	35,246
2010	200	201	8,706
2011	1,000	1,027	38,532
2012	500	476	19,291
2013	750	748	19,163
2014	750	747	21,730
2015	750	749	36,107
2016	500	508	27,409
2017	750	768	28,388
2018	400	377	16,657
2019	400	407	18,076
2020	300	285	19,656

Year	TAC	Landings	Effort
2021	300	251	18,608
2022	200	200	8,879
2023	200	202	6,393
2024	150	152	5,041
2025	275	278	16,211

Ecosystem and Climate Change Considerations

Sea scallops are largely sedentary molluscs and are susceptible to climate change stressors such as rising bottom temperatures and ocean acidification which affect scallop physiology and growth (Rheuban et al. 2018); however, direct climate change research for SFA 26A or other Scotian Shelf stocks is limited. As a result, potential effects are inferred from findings in other regions. Shifts in predator distributions and increasing predator abundance in northern waters may also present emerging risks. Aggregations of predators in areas of high scallop density may contribute to increases in natural mortality, particularly for pre-recruit (less than 85 mm shell height) sized scallops (Elnor and Jamieson 1979, Barbeau and Scheibling 1994, Wong and Barbeau 2005). High densities of predators and dead scallops (clappers) observed in other regions reinforce the need for continued monitoring of the distribution and abundance of predators.

Projections

The projected fully-recruited scallop biomass for 2026 is 3,090 t. This projection accounts for fisheries removals (24 t) occurring after the survey in 2025, and assumes:

- a catch of 275 t (the interim TAC),
- that growth will be unchanged from 2025 (1.1), and
- that proportional natural mortality will be unchanged from 2025 (0.33).

Catch scenarios ranging from 0 t to 375 t are presented in Table 2. The 2026 projections indicate that biomass is expected to decrease under all catch scenarios. The probability of biomass decline (i.e., projected biomass being below current biomass) ranges between 0.87 with no catch, 0.94 for a catch of 275 t, and 0.95 for a catch of 375 t. The expected change in biomass varies from -14% with no catch to -22% for a catch of 375 t. All catch scenarios presented indicate a probability of less than 0.01 that biomass will be below the LRP. Catch of 275 t (the 2026 interim TAC) is projected to result in a proportional exploitation rate of 0.08, and an expected 20% decrease in fully-recruited biomass from 2025 to 2026. The exploitation rates reported for the various catch scenarios are calculated for the 2026 calendar year using the projected 2026 removals (they do not include the post-survey catch from 2025).

Table 2. Decision table for the limit reference point (LRP) for 1–year projections using catch scenarios ranging from 0 t to 375 t for scallop fishing area 26A. Potential catches in 2026 are evaluated in terms of the expected exploitation rate (proportional) and change in fully-recruited biomass, the probability of a decline in biomass, and the probability that the biomass will be below the LRP. These probabilities account for uncertainty in the biomass forecasts.

Catch (t)	Exploitation Rate	Probability of Biomass Decline	Expected Change in Biomass (%)	Probability biomass will be below LRP
0	0.00	0.87	-14	< 0.01
25	0.01	0.88	-15	< 0.01
75	0.02	0.90	-16	< 0.01
125	0.04	0.91	-17	< 0.01
175	0.05	0.92	-18	< 0.01
225	0.07	0.93	-19	< 0.01
275	0.08	0.94	-20	< 0.01
325	0.10	0.95	-21	< 0.01
375	0.11	0.95	-22	< 0.01

SOURCES OF UNCERTAINTY

The modelled natural mortality terms are informed by survey clapper indices, however there are additional sources of mortality that may not be captured with a clapper-informed index. These sources of mortality include predation that does not result in clappers along with incidental and discard mortality from the fishery (Hubley et al. 2014).

The basis for the science advice to DFO Fisheries Management for 2026 assumes the current year (2025) estimate of natural mortality and the median growth. If growth and/or natural mortality differ from these estimates in 2026, the biomass projections (and consequent decision table probabilities) would be affected.

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SOURCES OF INFORMATION

Barbeau, M.A., and Scheibling, R.E. 1994. [Behavioral mechanisms of prey size selection by sea stars \(*Asterias vulgaris* Verrill\) and crabs \(*Cancer irroratus* Say\) preying on juvenile sea scallops \(*Placopecten magellanicus* \(Gmelin\)\)](#). Journal of Experimental Marine Biology and Ecology. 180(1): 103–136.

- DFO. 2024. [Stock status update of Browns Bank North scallops \(*Placopecten magellanicus*\) for the 2024 Fishing Season](#). DFO Can. Sci. Advis. Sec. Sci. Resp. 2024/022.
- DFO. 2025a. [Integrated Fisheries Management Plan: Offshore scallop, Maritimes Region, Fisheries and Oceans Canada](#).
- DFO. 2025b. [Science Advice on Reference points for Scallop Fishing Areas 25, 26, and 27B](#). DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2025/049.
- DFO. 2025c. [SFA 26A \(Browns Bank North\) Sea Scallop \(*Placopecten magellanicus*\) Stock Assessment in 2024](#). DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2025/050.
- Elnor, R.W., and Jamieson, G.S. 1979. [Predation of sea scallops, *Placopecten magellanicus*, by the rock crab, *Cancer irroratus*, and the American lobster, *Homarus americanus*](#). Journal of the Fisheries Research Board of Canada. 36(5): 537–543.
- Hubley, P.B., Reeves, A., Smith, S.J., and Nasmith, L. 2014. [Georges Bank 'a' and Browns Bank North scallop \(*Placopecten magellanicus*\) stock assessment](#). DFO Can. Sci. Advis. Sec. Res. Doc. 2013/079: vi + 58 p.
- Keith, D., Keyser, F., McDonald, R., Pearo Drew, T., and Sameoto, J.A. 2025. [Stock Assessment Framework for Scallop Fishing Areas 25, 26, and 27B: Reference Points](#). DFO Can. Sci. Advis. Sec. Res. Doc. 2025/083. iv + 60 p.
- Keith, D.M., Keyser, F., McDonald, R., Pearo Drew, T., and Sameoto, J.A. 2025b. [Stock Assessment Framework for Scallop Fishing Areas 25, 26, and 27B: Stock Assessment Models for SFAs 25A and 26A](#). DFO Can. Sci. Advis. Sec. Res. Doc. 2025/066. v + 122 p.
- McDonald, R.R., Keith, D.M., Sameoto, J.A., Hutchings, J.A., and Flemming, J.M. 2021. [Explicit incorporation of spatial variability in a biomass dynamics assessment model](#). ICES Journal of Marine Science. (fsab192) 78(9): 3265-3280.
- Rheuban, J.E., Doney, S.C., Cooley, S.R., and Hart, D.R. 2018. [Projected impacts of future climate change, ocean acidification, and management on the US Atlantic sea scallop \(*Placopecten magellanicus*\) fishery](#). PLOS ONE. 13(9): e0203536.
- Wong, M.C., and Barbeau, M.A. 2005. [Prey selection and the functional response of sea stars \(*Asterias vulgaris* Verrill\) and rock crabs \(*Cancer irroratus* Say\) preying on juvenile sea scallops \(*Placopecten magellanicus* \(Gmelin\)\) and blue mussels \(*Mytilus edulis* Linnaeus\)](#). Journal of Experimental Marine Biology and Ecology. 327(1): 1–21.

APPENDIX

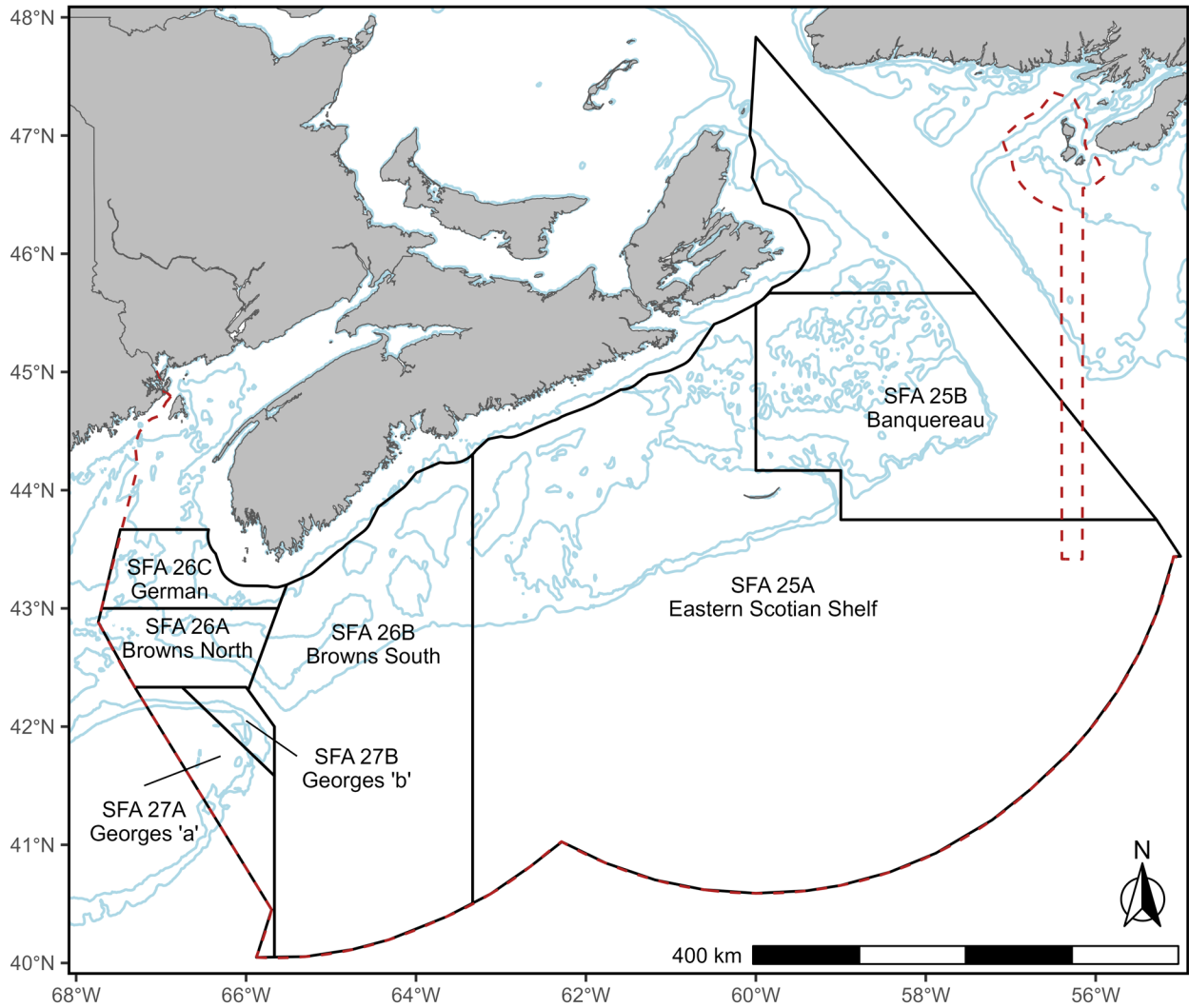


Figure A1. Offshore scallop fishing areas (SFAs) 25–27 used for management purposes in the DFO Maritimes Region. Bathymetry is shown as 50 m contours (blue lines), SFAs are outlined in black, and the Exclusive Economic Zone (EEZ) boundary is indicated by a red dashed line.

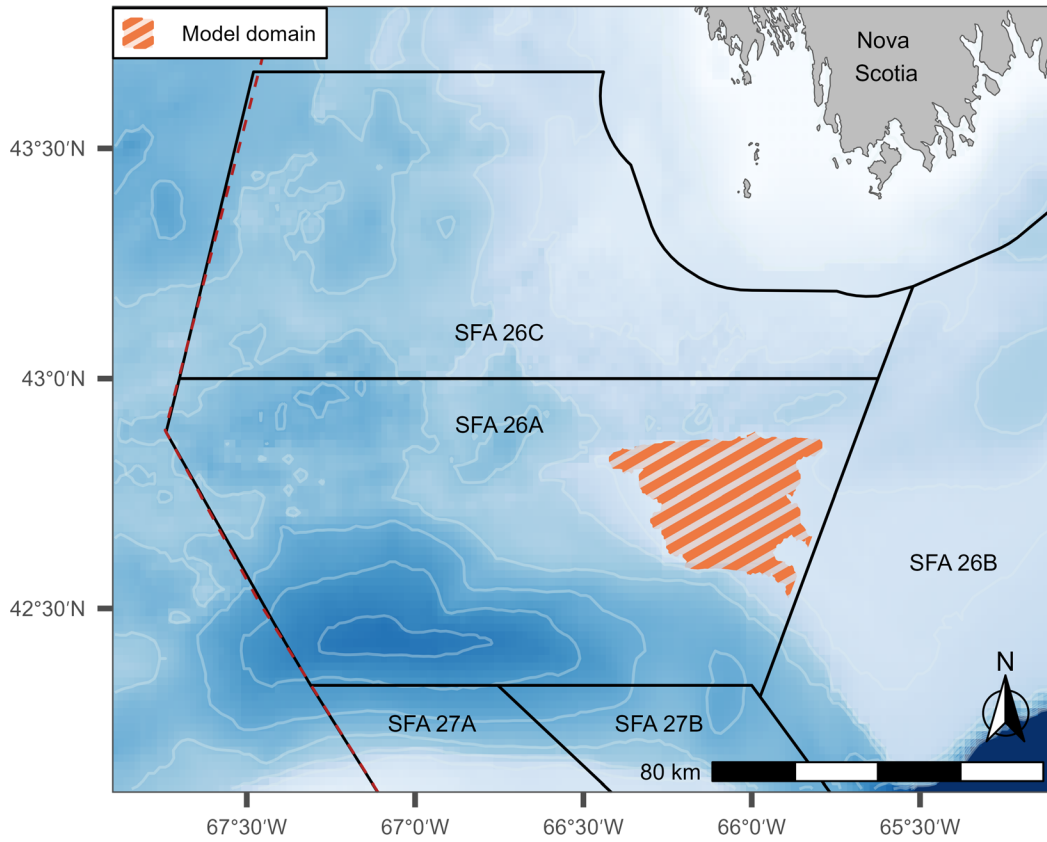


Figure A2. Location of scallop fishing area (SFA) 26A (Browns Bank North) and the spatial extent of the model domain (orange striped polygon) used for monitoring and management in the Maritimes Region. Bathymetry is shown as blue shading with 50 m contours (white lines). SFAs are outlined in black. Portions of adjacent SFAs are also shown, including SFA 26B (Browns Bank South), SFA 26C (German Bank), and the northern sections of SFA 27A (Georges Bank 'a') and SFA 27B (Georges Bank 'b').

THIS REPORT IS AVAILABLE FROM THE:

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ISSN 1919-3769
ISBN 978-0-660-99358-4 Cat. No. Fs70-7/2026-017E-PDF

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Correct Citation for this Publication:

DFO. 2026. SFA 26A (Browns Bank North) Scallops (*Placopecten magellanicus*) Update in
2025. DFO Can. Sci. Advis. Sec. Sci. Resp. 2026/017.

Aussi disponible en français :

*MPO. 2026. Mise à jour de l'état du stock de pétoncle géant (Placopecten magellanicus) dans
la ZPP 26A (nord du banc de Browns) en 2025. Secr. can. des avis sci. du MPO. Rép. des
Sci. 2026/017.*