



WESTERN COMPONENT POLLOCK (*POLLACHIUS VIRENS*) HARVEST CONTROL RULE UPDATE IN 2025

CONTEXT

The Fisheries Management Branch of Fisheries and Oceans Canada (DFO) has requested an update of the harvest control rule for the 2026 fishing year for the Western Component Pollock management area.

This Fisheries Science Response is from the regional peer review of December 2-3, 2025, on the Update of the Harvest Control Rule for Western Component (DFO Statistical Unit Areas 4Xopqrs5Yb5Zc) Pollock.

SCIENCE ADVICE

Status

- The smoothed survey spawning stock biomass, a secondary indicator of stock status, is above the upper stock reference (USR), suggesting that the stock is in the healthy zone.

Trends

- Since the most recent assessment in 2022 when the lower reference points (LRP) and USR were determined, the survey spawning stock biomass has remained above the LRP.
- The survey spawning stock biomass has increased each year since 2022.
- The fishery catch has decreased for the first time since 2020.
- Estimated relative harvest rate has decreased to 0.13 in 2024.

Ecosystem and Climate Change Considerations

- The mechanism behind how environmental variables or changing ocean conditions impact Western Component Pollock productivity is not well understood (i.e., differences in growth and recruitment cycles). However, simulation testing of the current harvest control rule during the Management Strategy Evaluation process accounted for some, but not all of these uncertainties.

Stock Advice

- The smoothed survey spawning stock biomass is 28,368 mt, suggesting that the stock is in the healthy zone (LRP=14,350 mt, USR=22,960 mt). Based on the available estimate of population biomass, the catch advice for WC Pollock as generated by the harvest control rule for fishing year 2026–2027 is 2,999 mt.
- Although Science has not provided catch advice for the 4Xmn portion of the Western Component management unit, it is recommended that the removal of any Eastern

Component total allowable catch be limited to that area to avoid exceeding F in the western portion.

BASIS FOR ASSESSMENT

Assessment Details

Year Assessment Approach was Approved

2022 (Andrushchenko et al. In prep. b¹)

Assessment Type

Interim year update

Most Recent Assessment Date

1. Last full assessment: 2022 (DFO 2023)
2. Last interim year update: 2024 (DFO 2025)

Assessment Approach

3. Broad category: Full Management Strategy Evaluation (MSE)
4. Specific category: Statistical catch-at-age

Stock Structure Assumption

Pollock in NAFO Divisions 4VWX5 comprise two population components: a slower-growing Eastern Component comprising Divisions 4VW and DFO statistical unit areas 4Xmn, and a faster-growing Western Component (WC) comprising 4Xopqrs and Canadian portions of NAFO Subarea 5, 5Yb and 5Zc (Andrushchenko et al. In prep a²). It is unclear whether the difference in growth constitutes a delineation of two genetically diverse stock components, or if this is an environmentally driven difference. The stock structure assumption used by DFO Science (4Xopqrs+5Yb+5Zc) differs from the DFO Resource Management (4X5YbZc) spatial areas for Western Component Pollock (DFO 2023, Andrushchenko et al. In prep a²).

¹ Andrushchenko, I., Y. Yin, C. M. Clark, R. M. Martin, and T. J. Barrett. In Prep b. Western Component Pollock Management Strategy Evaluation – Population Modeling, Operating Model Conditioning and Reference Points. DFO Can. Sci. Advis. Sec. Res. Doc.

² Andrushchenko, I., R. Martin, P. Doherty, A. Debertin, Q. McCurdy, E. MacEachern, D. S. Clark, and C. M. Clark. In prep a. Western Component Pollock - Data Inputs. DFO Can. Sci. Advis. Sec. Res. Doc.

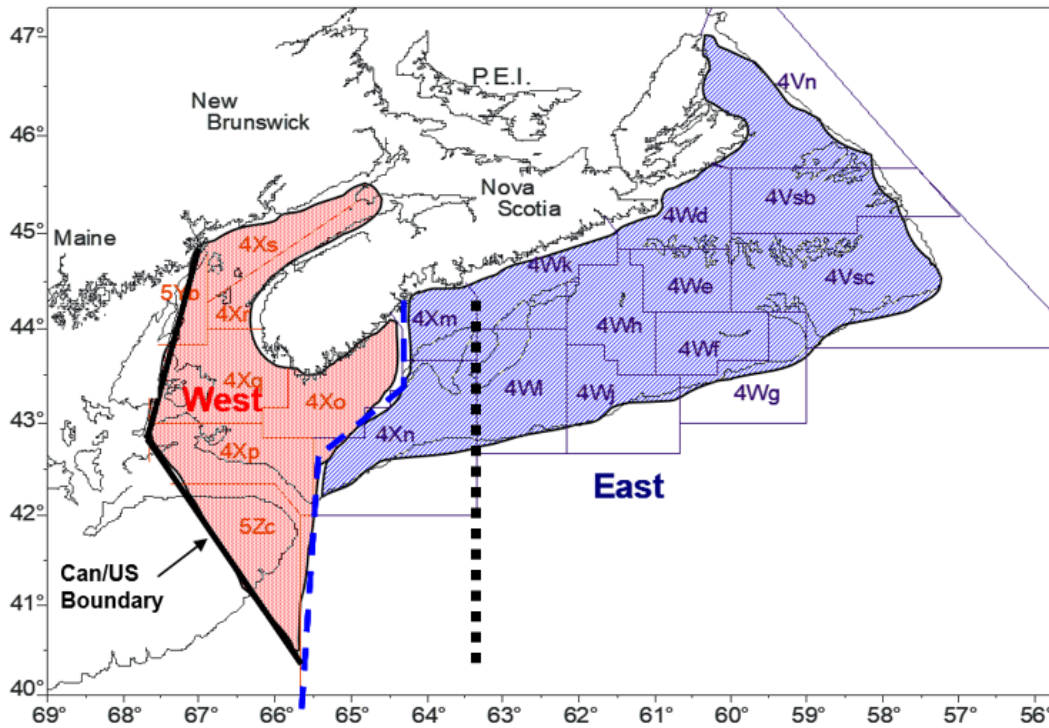


Figure 1. Canadian Pollock science assessment unit showing the Western (4Xopqrs5) and Eastern Components (4VW+4Xmn). Dashed blue line separates Western and Eastern Components for Science Assessment, solid line is the Canada/USA international boundary, dashed black line separates Western and Eastern Components for Management purposes.

Reference Points

- Limit reference point (LRP): 14,350 mt (0.2 of B_0)
- Upper stock reference (USR): 22,960 mt (0.32 of B_0)
- Removal reference (RR): 0.187 (when stock is above the USR; $F_{40\%SPR}$)

Harvest Control Rule

The application of the selected management procedure involves a ramp-based harvest control rule (HCR) where the fishing mortality (F) across the cautious zone increases gradually from 0.04 (critical zone) to 0.187 (healthy zone), with an interannual limit on change of 15% when in the cautious zone and 20% when in the healthy zone. In the critical zone, the limit is 50%. The population biomass (“proxy biomass index”) is estimated each year by adjusting a three-year geometric mean of available bottom trawl and acoustic biomass values by the model-generated index-specific catchability (q). The q -adjusted biomass determines F and the accompanying total allowable catch (TAC) using the ramp-based HCR.

Data

Population model:

- Maritimes Summer Ecosystem Research Vessel Survey bottom trawl data in 4Xopqrs5Y and 4Xmn (1983-2021) and 5Z (1989-1990; 2011-2021)

Maritimes Region

- Maritimes Summer Ecosystem Research Vessel Survey acoustic index (2012; 2016-2020)
- Canadian fishery data (1982-2020)
- HCR update:
- Bottom trawl index up to 2025, acoustic index up to 2024.
- Canadian fishery data available to the end of the 2024–2025 fishing year.

ASSESSMENT

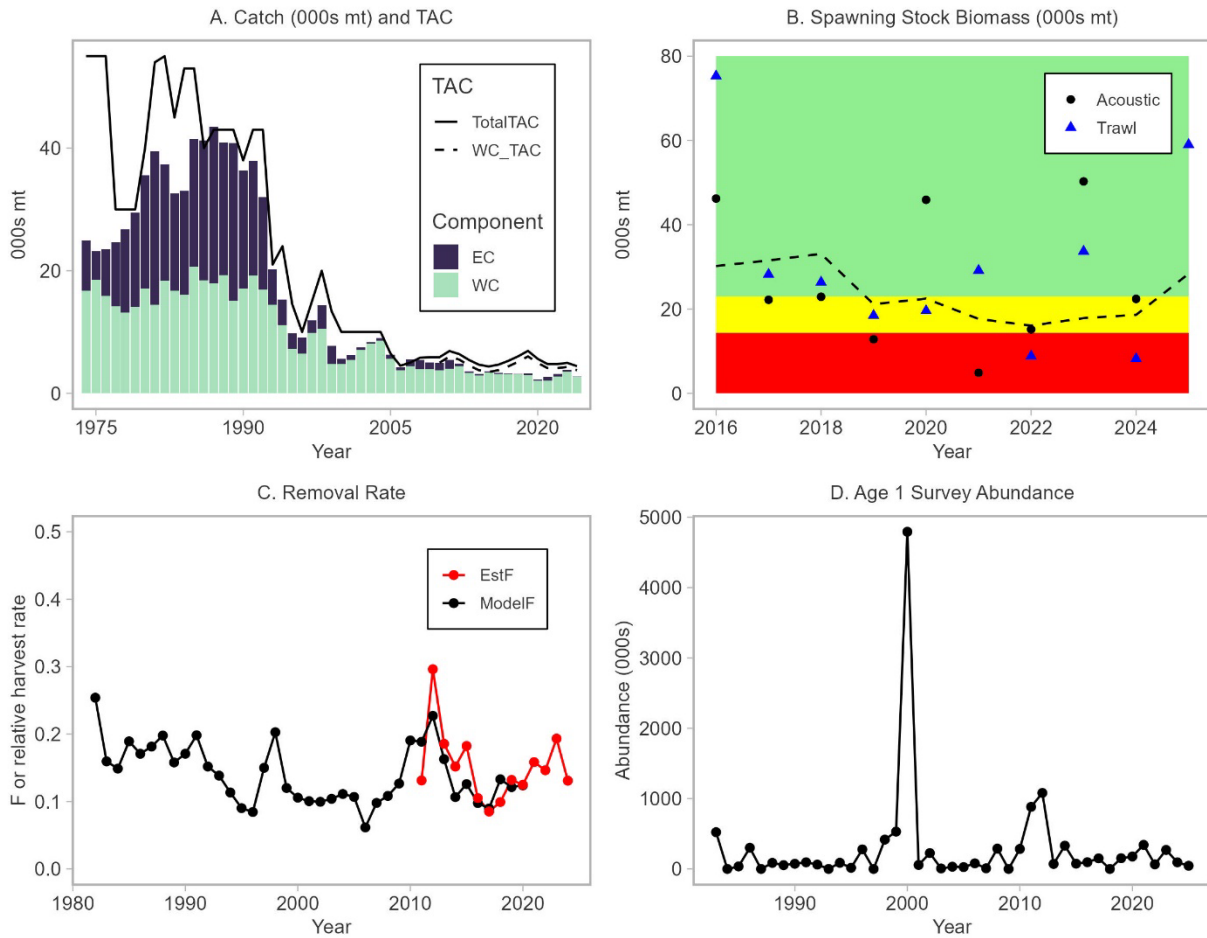


Figure 2. (A) Catch and total allowable catch (TAC) in Eastern Component (EC) and Western Component (WC) management areas, (B) spawning stock biomass (SSB; dashed line) in relation to the limit reference point (LRP) as denoted by the line between the red and yellow blocks (14.35 kt) and upper stock reference (USR) as denoted by the line between the yellow and green blocks (22.96 kt), (C) fishing mortality (F; distinguished as model-estimated F, represented by black line, and estimated relative harvest rate, represented by red line, for 2011–2024), (D) Maritimes Summer Ecosystem Research Vessel Survey bottom trawl Age 1 abundance index.

Stock Status and Trends

Spawning Stock Biomass

The most recent model estimate of spawning stock biomass (SSB) in 2020 is 21,711 mt (DFO 2023). The most recent smoothed survey spawning stock biomass, a secondary indicator of stock status, is 28,368 mt and is based on the available survey SSB between 2023 and 2025. Acoustic survey estimate of SSB was not available for 2025.

Removal Rate

Fishing mortality varied historically, with the high levels observed in the early 2010s decreasing to 0.124 at the time of the last MSE (DFO 2023). Between model runs, the relative harvest rate

is estimated using mean survey biomass estimates, with the current year's relative harvest rate estimated at 0.13.

Recruitment

The population model shows alternating periods of high and low recruitment for Western Component Pollock throughout the time series, with the stock undergoing a period of low recruitment with an annual average of 4.7 million recruits from 2016–2020 (DFO 2023). Based on the abundance of small fish in the bottom trawl survey, the stock has been in a period of high recruitment since 2020.

Natural Mortality

Natural mortality is understood to change over time, particularly for ages 5–7 and 8+ (Andrushchenko et al. In prep b¹). As a result, a statistical catch-at-age population model was accepted in the 2022 modelling framework where natural mortality was estimated in three temporal blocks for ages 5+ (1994–2000, 2000–2010, and 2011–2020, Andrushchenko et al. In prep b¹). There is no evidence of a substantial change in total mortality from 2011–2020 levels.

Current Outlook

The q-adjusted survey spawning stock biomass index is above the upper stock reference (USR), suggesting that the stock is in the healthy zone. In 2025, the proxy SSB was 125% of the USR.

History of Landings and Total Allowable Catch

Historically, landings of Pollock reached 40,000 mt and were harvested equally between the Eastern and Western components. However, after the mid-1990s, removals of Pollock from the Eastern Component all but disappeared, while those from the Western Component decreased to below 10,000 mt. Since the MSE in 2011, catches of Western Component Pollock have remained below 4,500 mt, with 2,637 mt caught in the 2024 fishing year against a TAC of 3,768 mt (Table 1).

Table 1. Landings and TAC for Western Component (WC) and Eastern Component (EC) Pollock since 2010 based on the management year (April–March). Landings for the 2025 management year not available until end of the management year (March 2026) are denoted by NA. Five-year averages of annual landings are presented for 2010–2014 and 2015–2019. WC total allowable catch (TAC) value includes 700 mt allocated to 4Xmn.

Years	WC Landings (mt)	EC Landings (mt)	WC TAC (mt)	EC TAC (mt)
2010–2014	3,707	690	4,962	900
2015–2019	3,199	117	4,564	900
2020	2,032	158	4,959	660
2021	2,064	567	4,107	660
2022	2,703	426	4,107	660
2023	3,527	290	4,309	660
2024	2,637	142	3,768	660
2025	NA	NA	3,308	660

Ecosystem and Climate Change Considerations

The impact of environmental variables or changing ocean conditions on Western Component Pollock productivity is not well understood. Although a clear link has not been identified, the cause of slow growth experienced since 2011 is likely ecosystem-based (DFO 2023). It is also unclear whether the difference in growth that delineates the Western and Eastern components is due to an environmentally driven effect (DFO 2023). Finally, there appear to be patterns in the recruitment of Western Component Pollock that are caused by something other than the spawning stock biomass from which it was produced. Simulation testing of the HCR during the MSE process accounted for this recruitment pattern in the projections.

Projections

Projections were last performed in 2022 during the modelling framework and are planned to be completed again after five years in 2027 (Andrushchenko et al. In prep b¹, DFO 2023).

Harvest Control Rule Outputs

The smoothed survey spawning stock biomass index is 28,368 mt, suggesting that the stock is in the healthy zone (LRP=14,350 mt, USR=22,960 mt). Based on the available estimate of population biomass, the catch advice for Western Component Pollock for fishing year 2026–

2027 is 2,999 mt. This represents an increase of 15% from the previous fishing year's TAC and is equivalent to relative harvest rate of 0.11.

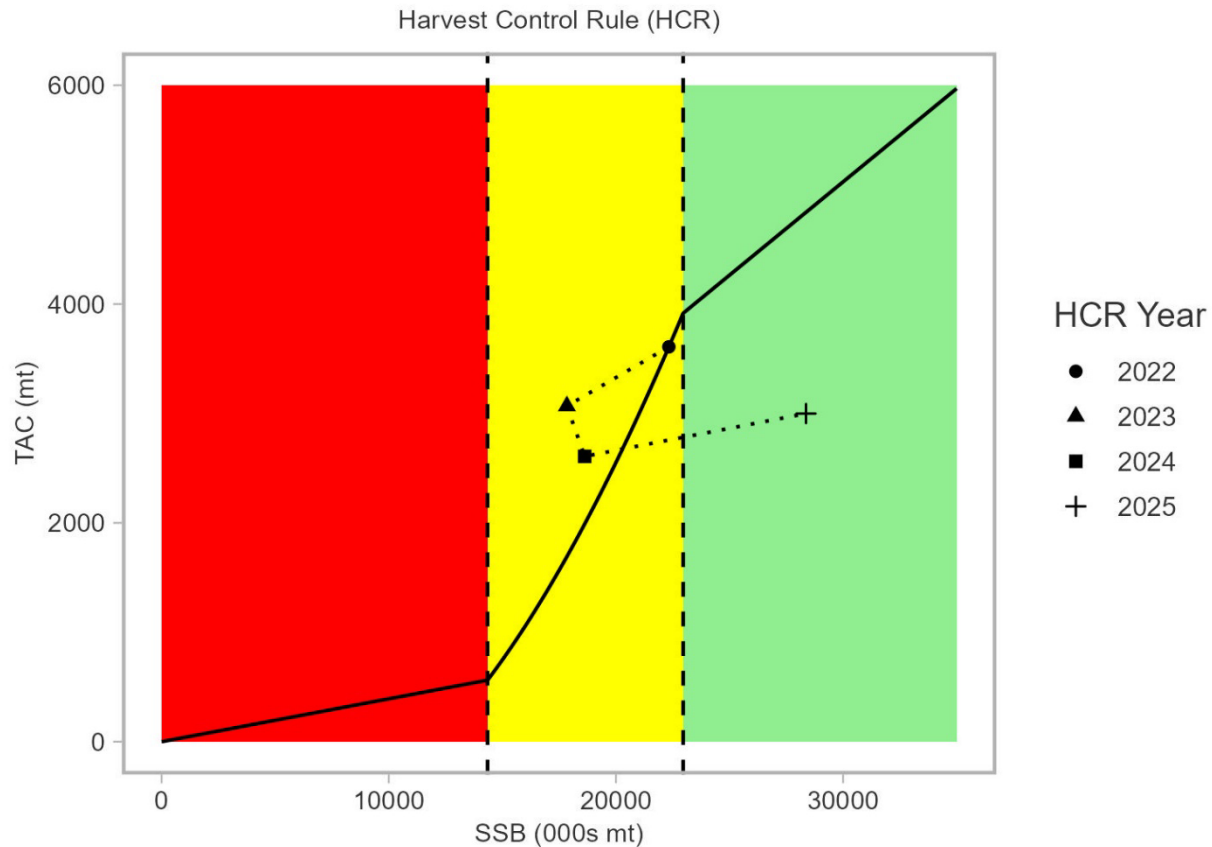


Figure 3. Harvest control rule (HCR) and application since 2022.

Evaluation of Exceptional Circumstances

A review of available data determined that no exceptional circumstances have occurred, so a higher-level review has not been triggered for 2026 (DFO 2023).

SOURCES OF UNCERTAINTY

The HCR uses all available acoustic and bottom trawl biomass indices in the terminal three years. The 2025 acoustic index was not calculated in time for this assessment and is missing from the calculation. Its inclusion would have changed the three-year geometric mean of the surveys, though the extent or direction is unclear. An additional uncertainty identified during the CSAS review for this document is that uncertainty in stock status is not calculated as part of the HCR Update.

LIST OF MEETING PARTICIPANTS

Name	Affiliation
Irene Andrushchenko (Lead)	DFO Science, Maritimes Region
Melanie Barrett	DFO Science, Maritimes Region
Tim Barrett	DFO Science, Maritimes Region
Lindsay Beazley	DFO Science, Maritimes Region
Lottie Bennett	DFO Science, Maritimes Region
Eric Brundson	DFO Science, Maritimes Region
Kathryn Cooper-MacDonald	DFO Resource Management, Maritimes Region
Dwayne D'entremont	DFO Science, Maritimes Region
Jamie Emberley	DFO Science, Maritimes Region
Darrell Frotten	DFO Science, Maritimes Region
Kyle Gillespie	DFO Science, Maritimes Region
Michelle Greenlaw	DFO Science, Maritimes Region
Danni Harper	DFO Science, Maritimes Region
Nathan Hebert	DFO Science, Maritimes Region
Brad Hubley	DFO Science, Maritimes Region
Kelly Kraska	DFO Science, Maritimes Region
Chantelle Layton	DFO Science, Maritimes Region
Ryan Martin	DFO Science, Maritimes Region
Selvan Mohan	DFO Science, National Capital Region
Shannan Murphy	DFO Science, Maritimes Region
Claire Mussells	DFO Science, Maritimes Region
Corinne Pomerleau	DFO Science, Maritimes Region
Catriona Regnier-McKellar	DFO Science, Maritimes Region
Daniel Ricard	DFO Science, Gulf Region

Maritimes Region

Name	Affiliation
Jennifer Saunders	DFO Resource Management, Maritimes Region
Tiffany Small	DFO Science, Maritimes Region
Priyanka Varkey	DFO Science, Maritimes Region
Yanjun Wang	DFO Science, Maritimes Region
Emily Way-Nee	DFO Science, Maritimes Region
Yihao Yin	DFO Science, Maritimes Region

SOURCES OF INFORMATION

DFO. 2023. [Western Component \(4Xopqrs5\) Pollock Management Strategy Evaluation, Stock Status, and Advice](#) DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2023/037.

DFO. 2025. [Western Component Pollock \(*Pollachius virens*\) Harvest Control Rule Update in 2024](#) DFO Can. Sci. Advis. Sec. Sci. Resp. 2025/012.

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Center for Science Advice (CSA)
Maritimes Region
Fisheries and Oceans Canada
Bedford Institute of Oceanography
1 Challenge Dr. PO Box 1006
Dartmouth, Nova Scotia B2Y 4A2

E-Mail: DFO.MaritimesCSA-CASMaritimes.MPO@dfo-mpo.gc.ca

Internet address: www.dfo-mpo.gc.ca/csas-sccs/

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