



SNOW CRAB (*CHIONOECETES OPILIO*) STOCK ASSESSMENT IN THE ESTUARY AND NORTHERN GULF OF ST. LAWRENCE (AREAS 13–17, 12A, 12B, 12C AND 16A) IN 2025

CONTEXT

Fisheries Management, Fisheries and Oceans Canada (DFO), has requested advice on the status of snow crab stocks in the Estuary and northern Gulf of St. Lawrence ([Integrated Fisheries Management Plan](#)).

This Fisheries Science Advisory Report is from the regional peer review meeting of February 10–12, 2026, on the Estuary and Northern Gulf of St. Lawrence (Areas 13-17, 12A, 12B, 12C and 16A) Snow Crab (*Chionoecetes opilio*) Stocks Assessment in 2025. Additional publications from this meeting will be posted on the [Fisheries and Oceans Canada \(DFO\) Science Advisory Schedule](#) as they become available.

SCIENCE ADVICE

Status

- In 2025, the value of the combined index was below the historical average for areas 17, 16 and 14, and above the historical average for areas 15, 13, 12C and 16A. The lack of reference points for these stocks prevents the assessment of their status under the precautionary approach (PA).
- According to the stock status indicator, Area 12A is expected to be in the Cautious zone of the PA in 2025.
- Even in the absence of one of the two indicators used to determine stock status under the PA, the post-season survey indicator suggests that the stock in Area 12B remains in the Critical zone.

Trends

- The value of the combined index has increased in areas 15, 14, 13, 12A and 12C, is stable in areas 16 and 16A, and is decreasing in Area 17.
- The number of recruits per unit effort is increasing in areas 15, 14, 13, 16A and 12C, is stable in areas 16 and 12B, and is declining in areas 17 and 12A.
- The number of pre-recruits per unit effort is comparable to the historical average in areas 17, 16, 15, 14, 13, 12A and 12C, and below the historical average in areas 12B and 16A.
- According to the post-season surveys, the average size of legal-size crabs is small in areas 17, 16, 14, 13 and 12C, but comparable to the historical average in areas 15, 12B and 16A and above the historical average in Area 12A.

Ecosystem and Climate Change Considerations

- In general, warming waters in recent years have reduced the suitable thermal habitat for adults and juveniles in the westernmost areas, while habitat gains have been observed in the easternmost areas.
- Variations in water temperature could have cumulative effects on the distribution, productivity, growth and size at terminal moult of snow crab in the coastal waters of the Estuary and northern Gulf of St. Lawrence.

Stock Advice

- Stock status varies among areas; however, the results for all areas indicate that recruitment to the fishery could remain stable or increase in the coming years, except for Area 12B, where no signs of improvement have been observed. In the short term, legal-size crabs remain small in a number of areas.
- Under the proposed harvest decision rule, potential removals during the 2026 fishing season are 1,002–1,194 t for Area 17, 2,416–2,883 t for Area 16, 555–609 t for Area 15, 394–434 t for Area 14, 262–292 t for Area 13, 113–136 t for Area 12A, 282–306 t for Area 12C and 369–402 t for Area 16A. Given that Area 12B remains in the Critical zone, no potential removals have been determined for this area.

BASIS FOR ASSESSMENT

Assessment Details

Year Assessment Approach was Approved

The assessment approach was revised during this peer review (Loboda et al. in prep.¹).

Assessment Type

Full Assessment

Most Recent Assessment Date

1. Last Full Assessment: February 2025 (DFO 2025)

Stock Assessment Approach

1. Broad category: Index-based (trends in empirical indices only)
2. Specific category: Index-based (including fishery-dependent and fishery-independent indices)

Stock Structure Assumption

Based on an assessment of biological (e.g., recruitment and growth) and physical (temperature, salinity and substrate) factors limiting the distribution and dispersal of snow crab, the division of the Estuary and northern Gulf of St. Lawrence into six biological production units was previously proposed (Sainte-Marie et al. 2005). However, a genetic study of Atlantic populations revealed

¹ Loboda, S., Cervello, G., Ollier, A. et Lévesque, I. In prep. Stock Status of Snow Crab (*Chionoecetes opilio*) in the St. Lawrence Estuary and Northern Gulf (Areas 13 to 17, 12A, 12B, 12C and 16A) in 2025. DFO Can. Sci. Advis. Sec. Res. Doc.

no spatial structure in the Northwest Atlantic as a whole (Puebla et al. 2008). Despite these findings, assessment units continue to be aligned with the fisheries management areas.

Reference Points

	Area								
	17	16	15	14	13	12A	12B	12C	16A
Limit Reference Point (LRP)	N/A	N/A	N/A	N/A	N/A	2	2	N/A	N/A
Proposed Upper Stock Reference (USR)	N/A	N/A	N/A	N/A	N/A	4	4	N/A	N/A
Removal Reference (RR)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Target Reference Point (TRP)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Harvest Decision Rule

A new quantitative harvest decision rule was proposed during this peer review and consists of two steps.

The first step aims to establish a relationship between recommendations on potential catch levels from the previous science advice and the combined stock status indicator. Based on this relationship, projected removals in 2026 are based on the value of the combined index observed in 2025.

The second step incorporates adjustments to projected removals based on additional variables, including the average size of legal-size crabs and the number of pre-recruits per unit effort observed in the post-season survey, as well as the thermal habitat index for adult crabs. A detailed description of the methodological approach is provided in Loboda et al. (in prep.¹).

Data

- Commercial landings (1983–2025)
- Commercial fishery logbooks (catches, effort, fishing positions: 1984–2025)
- Catch per unit effort (CPUE; number of crabs per trap) from post-season surveys of commercial traps (1998*–2025); *the first year of the survey varies by area
- Abundance indices from trawl surveys conducted in Sainte-Marguerite Bay (1989–2025), the Estuary and the Lower North Shore (1992–2025)
- At-sea and dockside sampling (carapace width and condition: 1996–2025)
- Bottom water temperature recorded in the Atlantic Zone Monitoring Program (AZMP; 1990–2025)

Male crab indices are organized into several categories. Males are first classified as juveniles or adults based on whether they have completed the terminal moult. Juveniles are subsequently subdivided by size, with pre-recruits defined as individuals measuring more than 78 mm. Legal-size adults (≥ 95 mm) are categorized by carapace condition: legal-size individuals with carapace conditions 1 and 2 are classified as recruits, while those with carapace conditions 3, 4 and 5 are categorized as crabs left by the fishery.

The combined index is calculated using standardized catch per unit effort (CPUE) from the commercial fishery and the CPUE observed in post-season surveys of legal-size males (≥ 95 mm).

Data changes: A modification was made to the CPUE time series derived from the post-season surveys in areas 13, 14, 15, 12C and 16A in order to incorporate the early years of the series. The inclusion of these additional years was made possible by standardizing the older data with the more recent data following a change in trap type. Details of the revised standardization methodology are provided in Loboda et al. (in prep.¹).

ASSESSMENT

Stock Status and Trends in Area 17

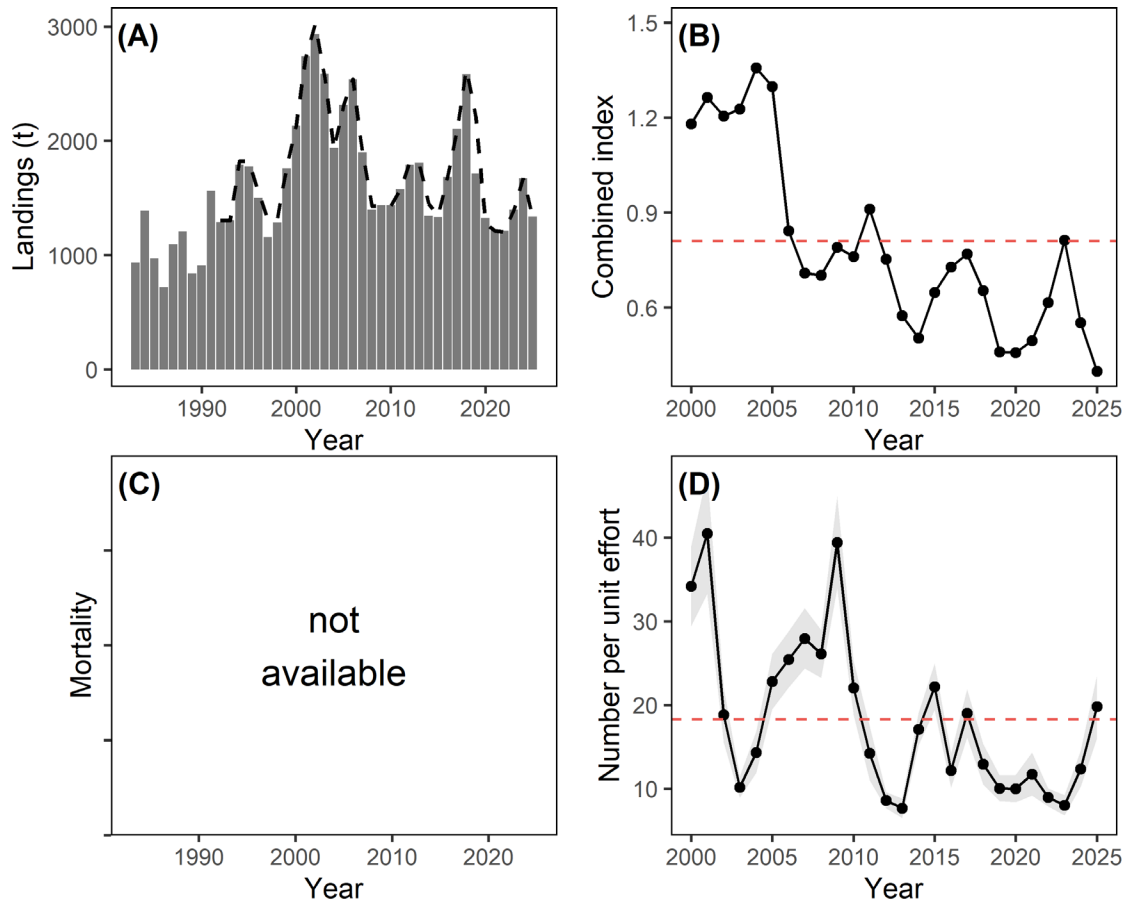


Figure 1. Area 17: (A) landings (grey bars) and total allowable catch (TAC; black dashed line); (B) combined index and historical average (red dashed horizontal line); (C) fishing mortality (data not available); and (D) average number of pre-recruits per unit effort ($\pm$ 95% confidence interval) in the post-season survey and the historical average (red dashed horizontal line).

Quebec Region

Assessment of the Estuary and Northern Gulf of St. Lawrence Snow Crab Stocks in 2025

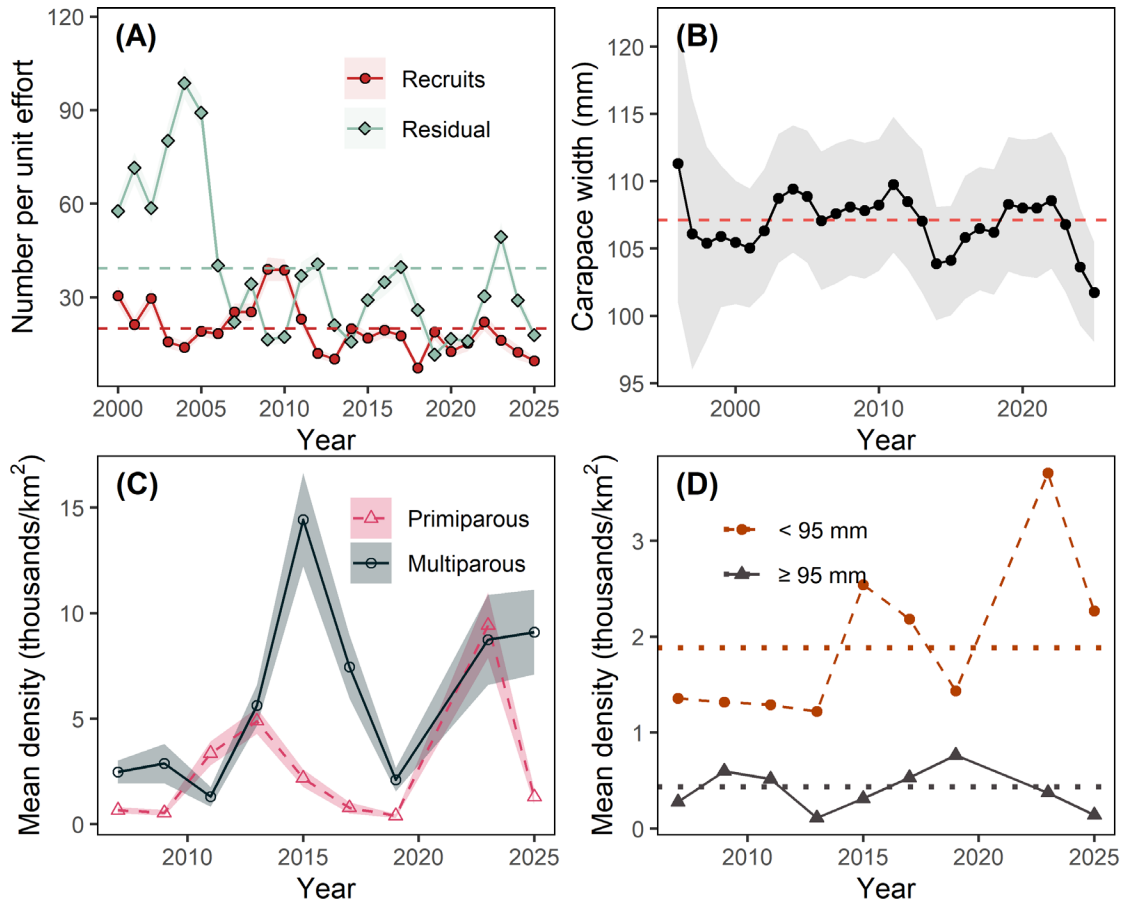


Figure 2. Area 17: (A) average numbers of recruits (red) and crabs left by the fishery (LF [green]; $\pm$ 95% confidence interval) per unit effort derived from the post-season surveys, with their corresponding historical averages (dashed horizontal lines); (B) average carapace width of legal-size male crabs caught during the post-season survey ($\pm$ standard deviation) and the historical average (red dashed horizontal line); (C) densities (in thousands per km²; annual average $\pm$ standard deviation) of primiparous (pink dashed line) and multiparous females (solid black line), based on the DFO trawl survey conducted in the St. Lawrence Estuary; and (D) densities of adolescent males < 95 mm (orange dotted line) and $\geq$ 95 mm (solid grey line), with their corresponding historical averages (horizontal dotted lines), based on the DFO trawl survey in the St. Lawrence Estuary.

Landings

After increasing for two consecutive years, landings declined in 2025 (-20%) to 1,337 t (TAC: 1,335 t; Figure 1A).

Stock Status and Trends

The combined index declined between 2024 and 2025 to its lowest value in the time series (Figure 1B).

Recruitment

The abundance index for pre-recruits increased for a second consecutive year in 2025 (+60%), returning to the historical average (Figure 1D).

Abundance and Size

The number of recruits per unit effort declined for a third consecutive year (-23%). The number of crabs left by the fishery followed a similar trend, declining by 38% in 2025 (Figure 2A). The average size of commercial crabs decreased for a third consecutive year and, in 2025, reached its lowest value since 1996, at 102 mm, compared with a historical average of 107 mm (Figure 2B).

The decline in the abundance of primiparous females observed in 2024 in the post-season survey was confirmed by the 2025 trawl survey (Loboda et al. 2026; Figure 2C). The density of multiparous females remained stable and high in 2025 (Figure 2C). The abundance of juveniles under 95 mm remains high in 2025, while that of juveniles over 95 mm is very low (Figure 2D).

Current Status

The combined index reached its lowest value in the time series. This sharp decline reflects reductions in the number of crabs left by the fishery and in recruits per unit effort, as well as a decrease in the average size of commercial crabs. However, the high abundance of juveniles measuring 62–95 mm observed since 2023 could lead to increased recruitment to the fishery in the short term.

Stock Status and Trends in Area 16

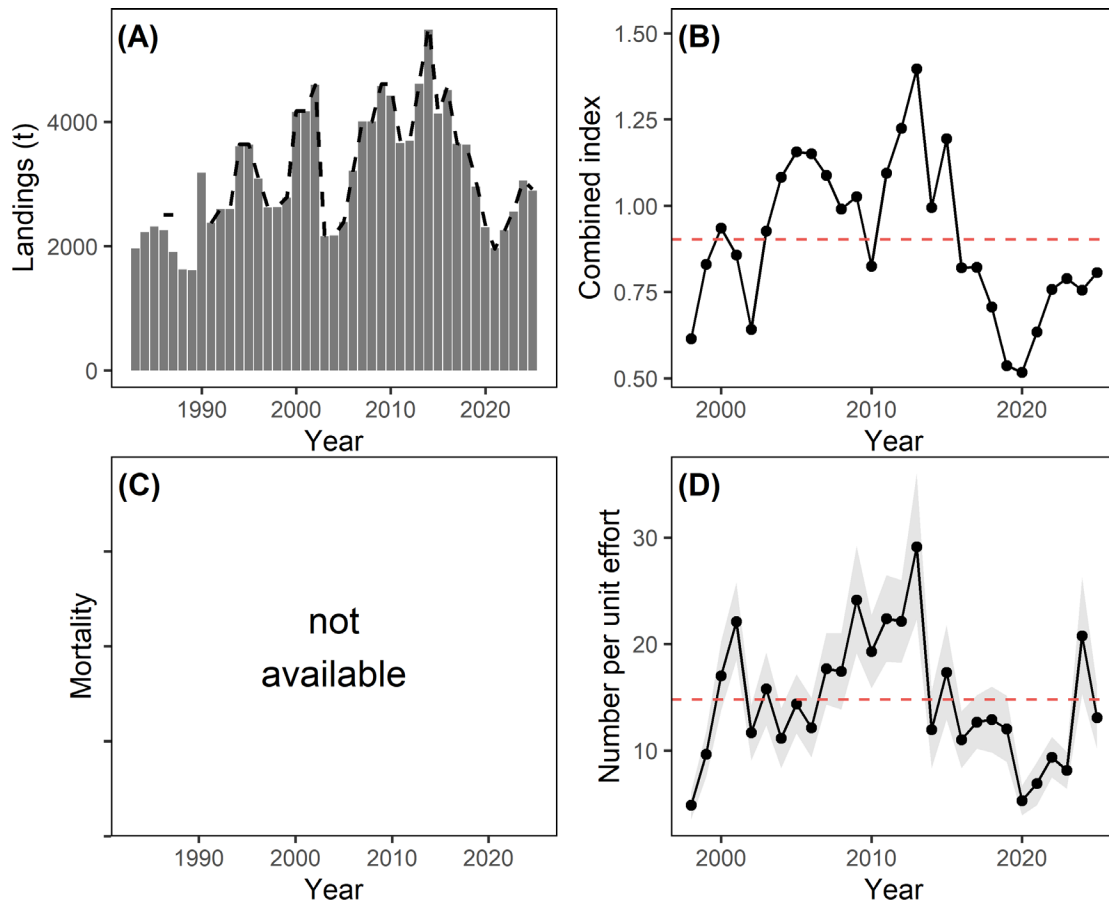


Figure 3. Area 16: (A) landings (grey bars) and total allowable catch (TAC; black dashed line); (B) combined index and historical average (red dashed horizontal line); (C) Fishing mortality (data not available); and (D) average number of pre-recruits per unit effort ($\pm 95\%$ confidence interval) based on the post-season survey, and the historical average (red dashed horizontal line).

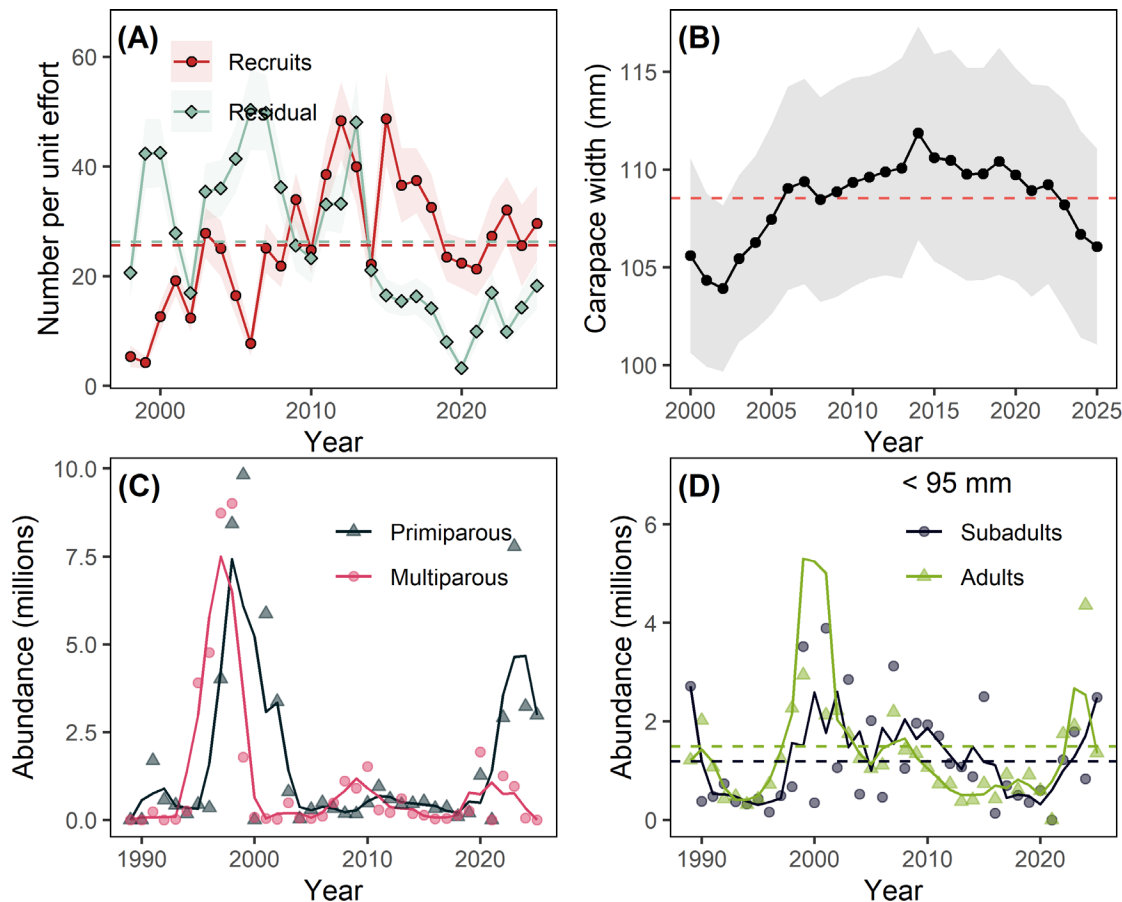


Figure 4. Area 16: (A) numbers of recruits (red) and crabs left by the fishery (LF) (green; $\pm 95\%$ confidence interval) per unit effort estimated from the post-season surveys, with their corresponding historical averages (dashed lines); (B) average carapace width ($\pm$ standard deviation) of legal-size male crabs measured in the post-season survey and the historical average (red dashed line); (C) abundance (in millions), three-year moving average (lines) and raw data (points) for primiparous (pink) and multiparous (black) female snow crabs; and (D) abundance (in millions), three-year moving average (lines) and raw data (points) for male < 95 mm adolescents (in black) and adults (in green), in the DFO trawl survey in Sainte-Marguerite Bay near Sept-Îles.

Landings

After three consecutive years of increases, landings decreased by 5% in 2025 to 2,890 t, with a TAC of 2,914 t (Figure 3A).

Stock Status and Trends

The combined index has remained stable and slightly below the historical average over the past four years (Figure 3B).

Recruitment

The number of pre-recruits per unit effort over the past two years is comparable to the historical average (Figure 3D).

Abundance and Size

Based on post-season surveys, the number of recruits per unit effort and crabs left by the fishery have remained stable over the past four years and are close to and below the historical average, respectively (Figure 4A). The average carapace width of legal-size adult males has continued its decline, which began in 2021, and remains below the historical average (Figure 4B).

No primiparous females were caught during the DFO trawl survey in Sainte-Marguerite Bay in 2025, confirming that the pulse of primiparous females has subsided (Figure 4C). The abundance of multiparous females declined sharply in 2024, remained stable at a high level in 2025. The abundance of sublegal-size adults (62–95 mm), which had been high since 2022, decreased in 2025. In contrast, the abundance of sublegal-size adolescents (62–95 mm) increased in 2025, reaching high levels (Figure 4D).

Current Status

The combined index and abundance index for pre-recruits are stable. However, commercial crabs are small on average. Trawl survey results continue to indicate that adolescents are present in large numbers, suggesting potential increased recruitment to the fishery in the medium term.

Stock Status and Trends in Area 15

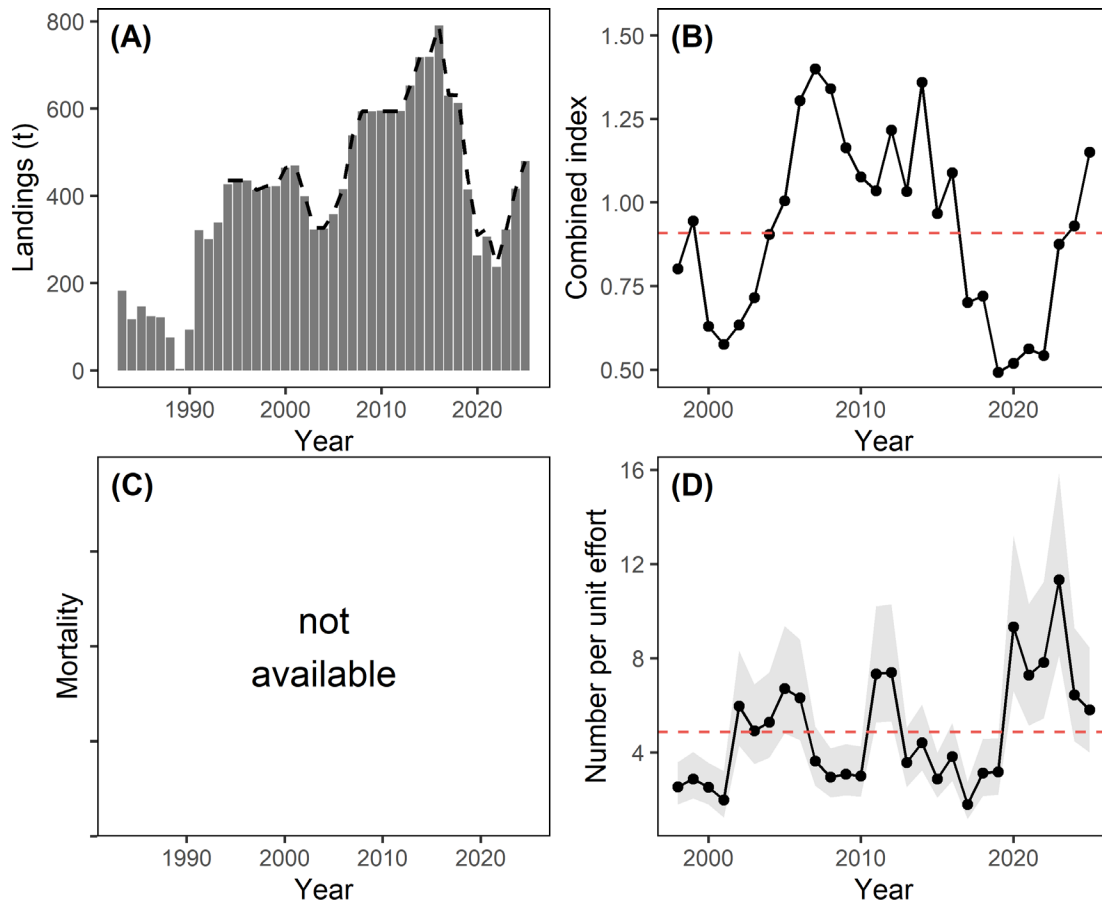


Figure 5. Area 15: (A) landings (grey bars) and total allowable catch (TAC; black dashed line); (B) combined index and historical average (red dashed horizontal line); (C) fishing mortality (data not available); and (D) average number of pre-recruits per unit effort ($\pm 95\%$ confidence interval) in the post-season survey and the historical average (red dashed horizontal line).

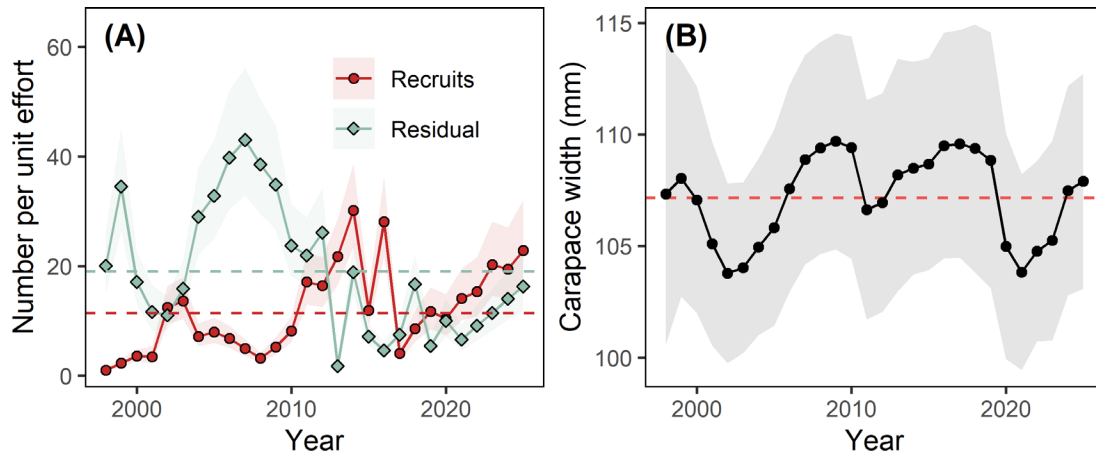


Figure 6. Area 15: (A) average numbers of recruits (red) and crabs left by the fishery (LF [green]; $\pm$ 95% confidence interval) per unit effort estimated from post-season surveys, with their corresponding historical averages (dashed horizontal lines); and (B) average carapace width of legal-size male crabs caught in the post-season survey ($\pm$ standard deviation) and the historical average (red dashed horizontal line).

Landings

After reaching a low of 237 t in 2022, landings continue to increase (+15%), reaching 479 t in 2025 (TAC: 478 t; Figure 5A).

Stock Status and Trends

For the third consecutive year, the combined index has increased and is now above the historical average (Figure 5B).

Recruitment

The number of pre-recruits per unit effort has been decreasing since 2023 but has remained above the historical average since 2020 (Figure 5D).

Abundance and Size

The number of recruits per unit effort observed in the post-season survey has been increasing since 2017 and, in 2025, reached one of the highest values in the time series (Figure 6A). The number of crabs left by the fishery has been rising since 2021 and is comparable to the historical average (Figure 6A). The average size of commercial-size males has been increasing since 2021, reaching a level comparable to the historical average (Figure 6B).

Current Status

All indicators are positive for the Area 15 stock, and the high abundance of pre-recruits suggests that recruitment to the fishery could remain stable over the next few years.

Stock Status and Trends in Area 14

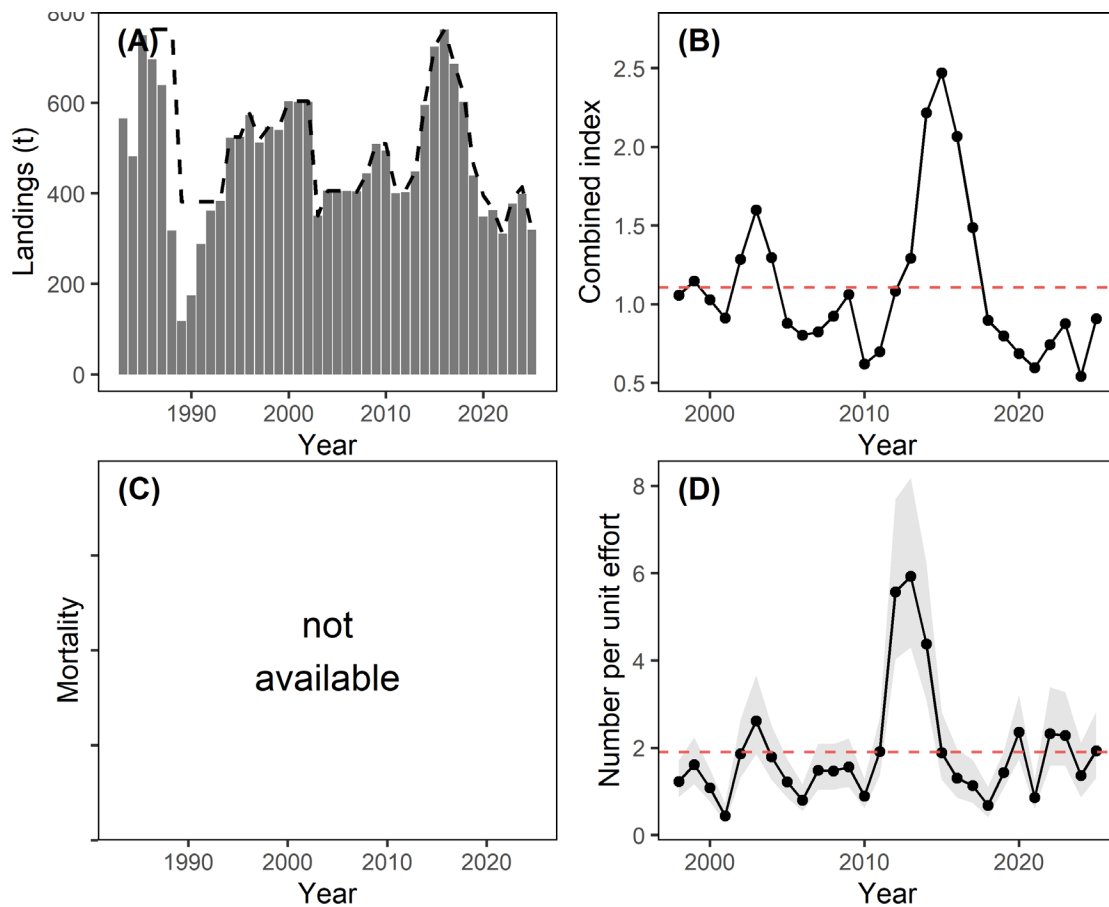


Figure 7. Area 14: (A) landings (grey bars) and total allowable catch (TAC; black dashed line); (B) combined index and historical average (red dashed horizontal line); (C) fishing mortality (data not available); and (D) average number of pre-recruits per unit effort ($\pm 95\%$ confidence interval), in the post-season survey and the historical average (red dashed horizontal line).

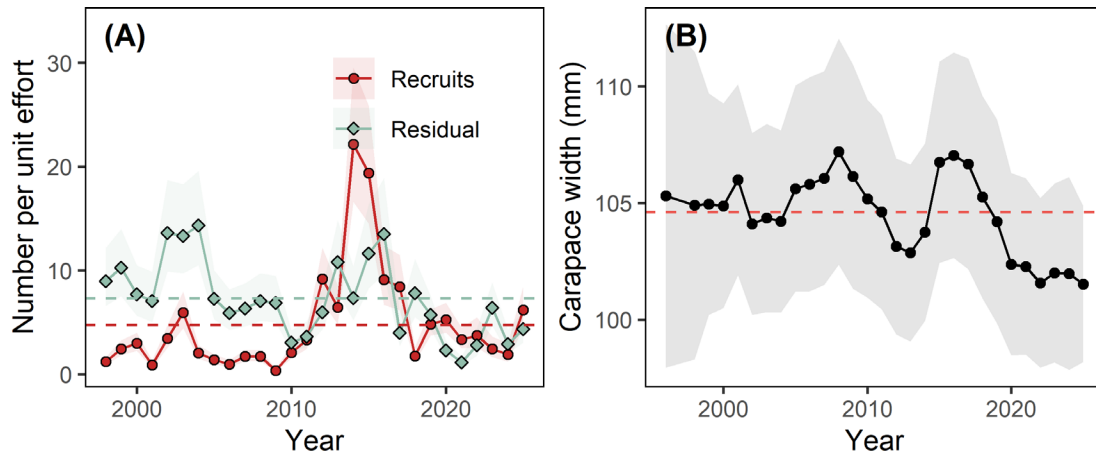


Figure 8. Area 14: (A) average numbers of recruits (red) and crabs left by the fishery (LF [green]; $\pm$ 95% confidence interval) per unit effort estimated from post-season surveys, with their corresponding historical averages (dashed horizontal lines); and (B) average carapace width of legal-size male crabs caught in the post-season survey ($\pm$ standard deviation) and the historical average (red dashed horizontal line).

Landings

Landings decreased by 20% in 2025, reaching 319 t (TAC: 319 t; Figure 7A).

Stock Status and Trends

After reaching its lowest value in 2024, the combined index increased in 2025 but remains below the historical average (Figure 7B).

Recruitment

The number of pre-recruits per unit effort has remained stable at the historical average since 2019 (Figure 7D).

Abundance and Size

According to the post-season surveys, the number of recruits per unit effort and crabs left by the fishery increased in 2025 and are, respectively, close to and below the historical averages (Figure 8A). Since 2020, the average size of commercial crabs has been stable, at the lowest level observed in the time series (Figure 8B).

Current Status

Although most indicators are increasing, the size of legal-size crabs remains small. The abundance index for pre-recruits suggests that recruitment to the fishery may remain stable over the next few years.

Stock Status and Trends in Area 13

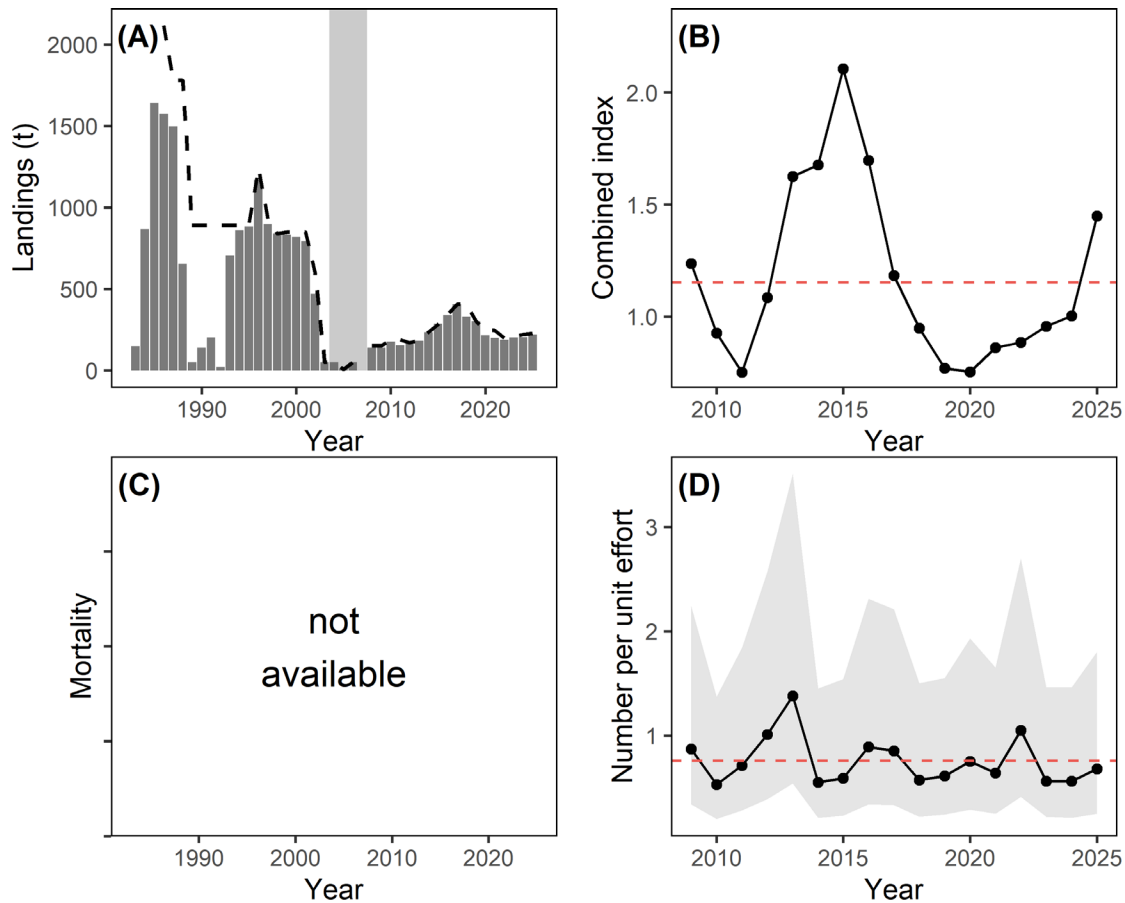


Figure 9. Area 13: (A) landings (grey bars) and total allowable catch (TAC; black dashed line), with the vertical grey area indicating the moratorium period; (B) combined index and historical average (red dashed horizontal line); (C) fishing mortality (data not available); and (D) average number of pre-recruits per unit effort ($\pm$ 95% confidence interval) in the post-season survey and the historical average (red dashed horizontal line).

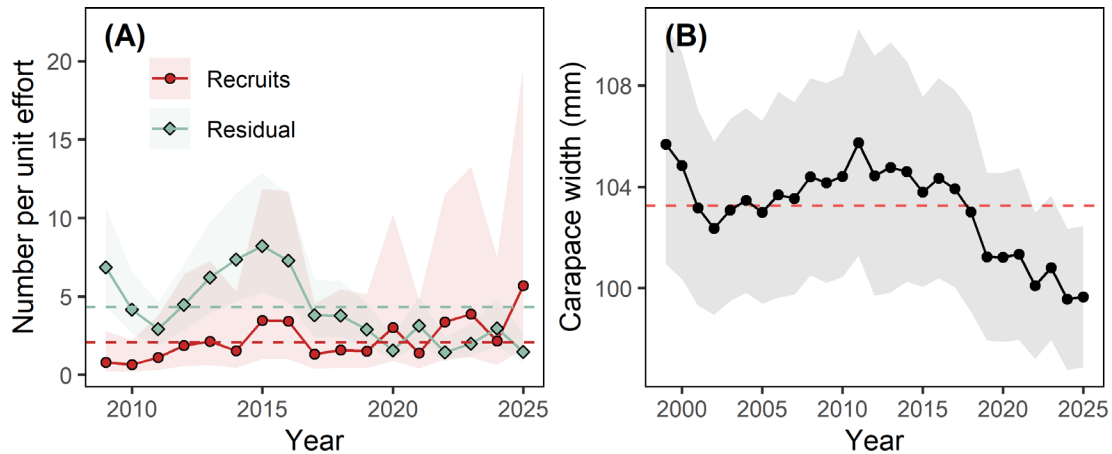


Figure 10. Area 13: (A) average numbers of recruits (red) and crabs left by the fishery (LF [green]; $\pm$ 95% confidence interval) per unit effort estimated from post-season surveys, with their corresponding historical averages (dashed horizontal lines); and (B) average carapace width of legal-size male crabs caught in the post-season survey ($\pm$ standard deviation) and the historical average (red dashed horizontal line).

Landings

Since 2020, landings have remained relatively stable and were 207 t in 2025 (TAC: 227 t; Figure 9A).

Stock Status and Trends

After reaching its lowest value in 2020, the combined index increased steadily, exceeding the historical average in 2025 (Figure 9B).

Recruitment

The number of pre-recruits per unit effort has been stable since 2023 and is close to the historical average (Figure 9D).

Abundance and Size

According to the post-season survey, the number of recruits per unit effort increased sharply in 2025, reaching the highest value in the time series (Figure 10A). The number of crabs left by the fishery per unit effort has remained below the historical average since 2017 (Figure 10A). Since 2019, the average size of commercial crabs has remained low and below the historical average (Figure 10B).

Current Status

Although the combined index is increasing, the size of legal-size crabs remains low. The abundance indices for pre-recruits and recruits suggest that recruitment to the fishery may remain stable over the next few years.

Stock Status and Trends in Area 12A

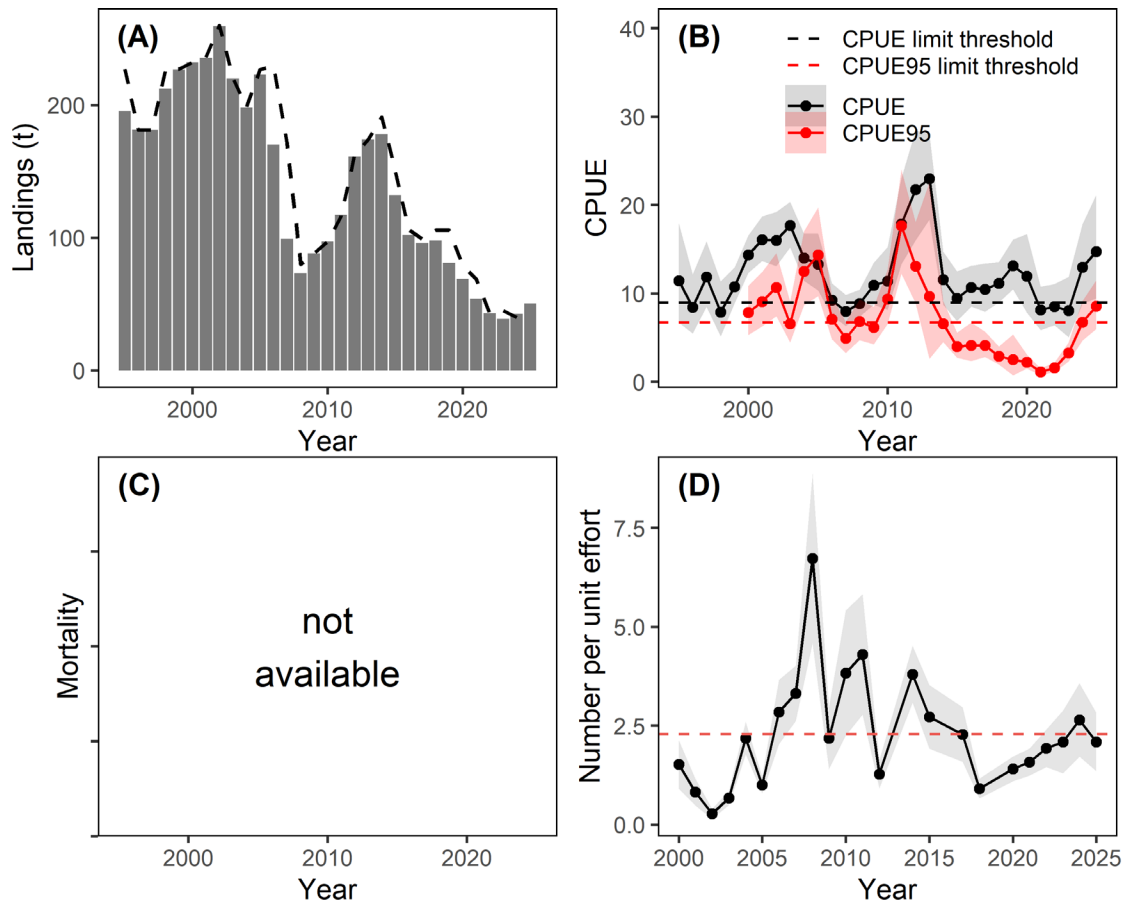


Figure 11. Area 12A: (A) landings (grey bars) and total allowable catch (TAC; black dashed line); (B) commercial CPUE and CPUE95 from the post-season survey ($\pm 95\%$ confidence interval), with their corresponding limit thresholds (horizontal dashed lines); (C) fishing mortality (data not available); and (D) average number of pre-recruits per unit effort ($\pm 95\%$ confidence interval) in the post-season survey and the historical average (red dashed horizontal line).

Assessment of the Estuary and Northern Gulf of St. Lawrence Snow Crab Stocks in 2025

Quebec Region

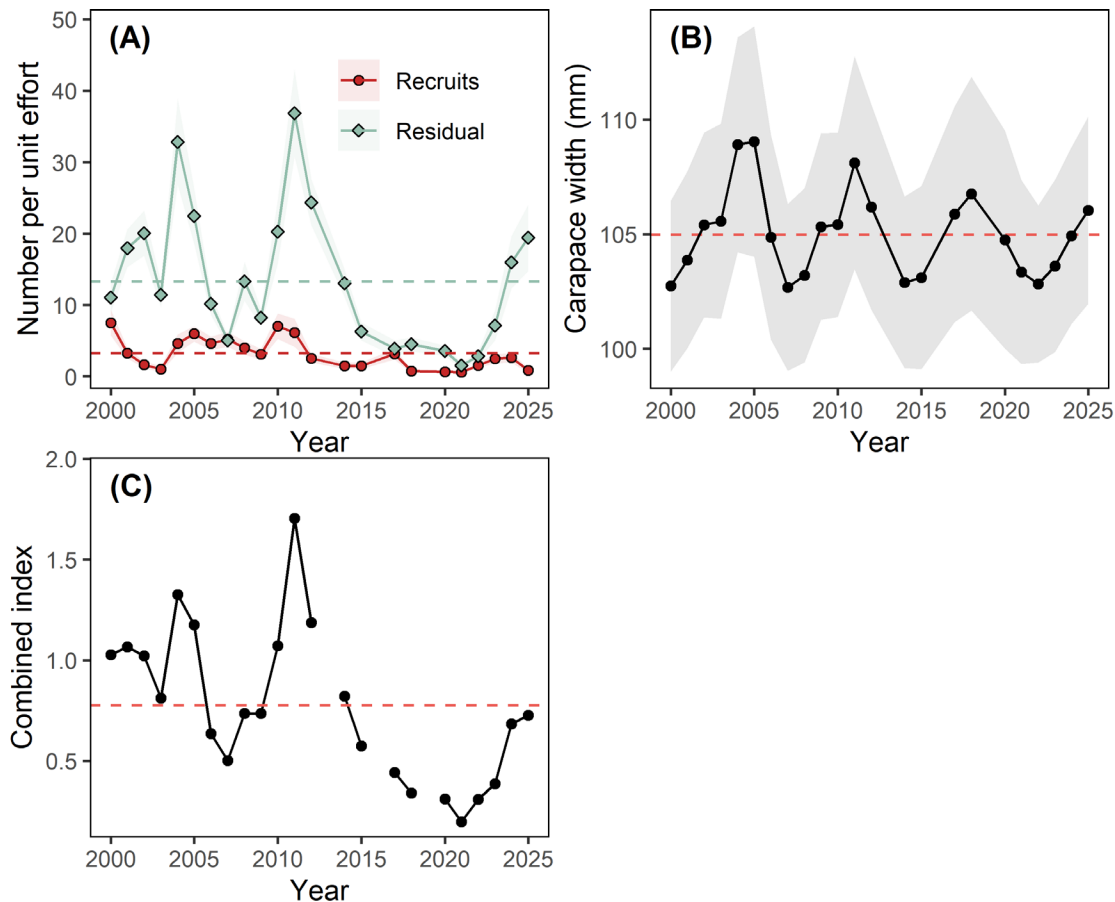


Figure 12. Area 12A: (A) average numbers of recruits (red) and crabs left by the fishery (LF [green]; $\pm$ 95% confidence interval) per unit effort estimated from post-season surveys, with their corresponding historical averages (dashed horizontal lines); (B) average carapace width of legal-size male crabs caught during the post-season survey ($\pm$ standard deviation) and the historical average (red dashed horizontal line); and (C) combined index and historical average (red dashed horizontal line).

Landings

After reaching their lowest level in 2023 (39 t), landings increased for a second consecutive year (+19%), totalling 50 t in 2025 and thereby exceeding the TAC of 44 t (Figure 11A).

Stock Status Indicator

The standardized CPUE for the commercial fishery and for the 2025 post-season survey both increased and exceeded their respective limit thresholds, with probabilities of 100% and 93% (Figure 11B). According to the indicator weighting system (Loboda et al. 2026), this yields a final score of 3, placing the stock in the Cautious zone of the PA for a second consecutive year, after a decade in the Critical zone.

The combined index increased slightly in 2025 but remains below the historical average (Figure 12C).

Recruitment

The pre-recruit abundance index declined in 2025 after five consecutive years of increase and is now close to the historical average (Figure 11D).

Abundance and Size

In 2025, for the fourth consecutive year, the number of crabs left by the fishery per unit effort increased and is now above the historical average (Figure 12A). However, the number of recruits per unit effort declined and remains below the historical average (Figure 12A). The average size of legal-size males continued to increase in 2025 and is above the historical average (Figure 12B).

Current Status

As a whole, the stock status indicators show that a biomass of crabs left by the fishery has built up, partly as a result of low removals over the past three years, allowing the stock to remain in the Cautious zone after a decade in the Critical zone.

Stock Status and Trends in Area 12B

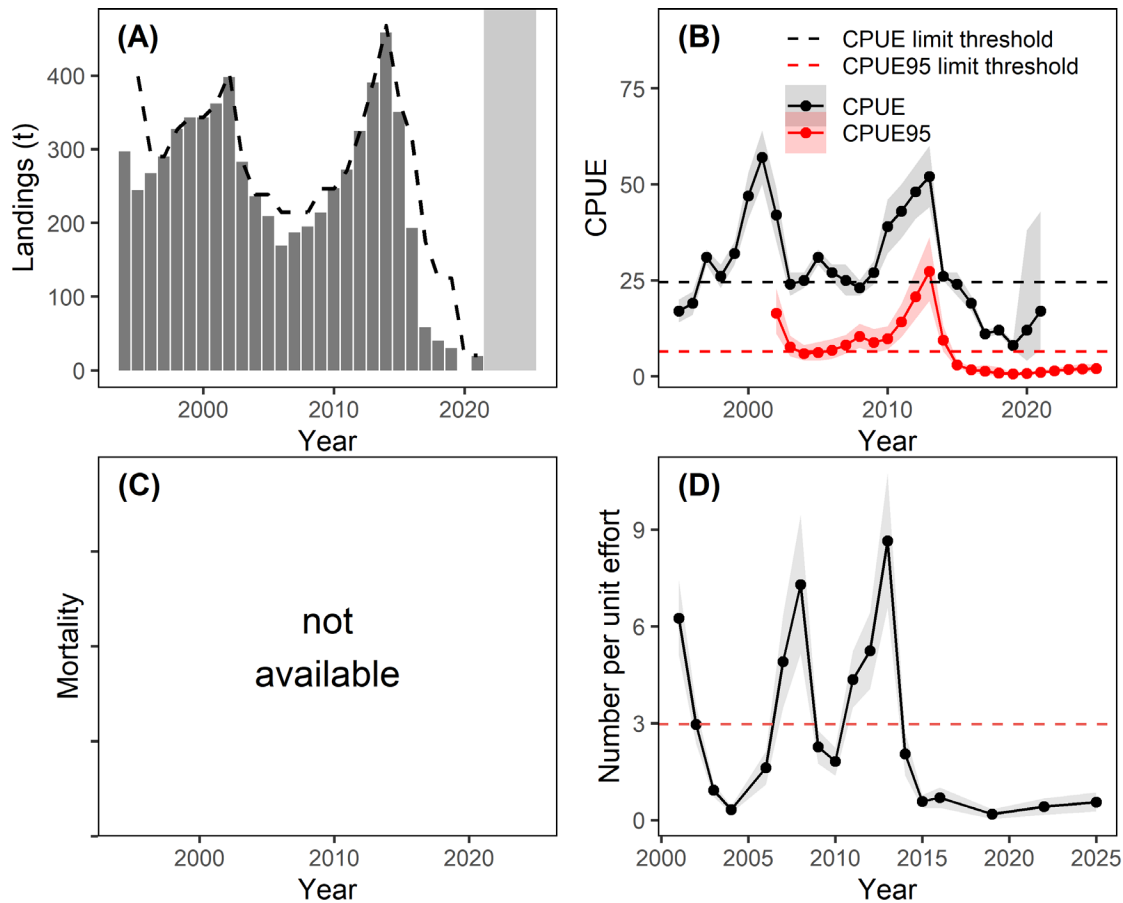


Figure 13. Area 12B: (A) landings (grey bars) and total allowable catch (TAC; black dashed line), with the light grey vertical area indicating the moratorium period; (B) CPUE from the commercial fishery and CPUE95 from the post-season survey ($\pm 95\%$ confidence interval), with their corresponding limit thresholds (horizontal dashed lines); (C) fishing mortality (data not available); and (D) average number of pre-recruits per unit effort in the post-season survey ($\pm 95\%$ confidence interval) and the historical average (red dashed horizontal line).

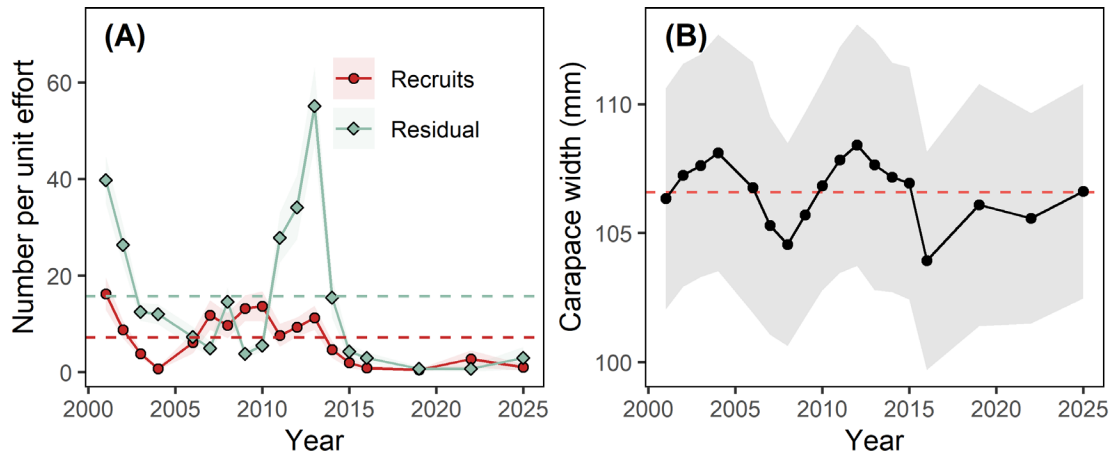


Figure 14. Area 12B: (A) average numbers of recruits (red) and crabs left by the fishery (LF [green]; $\pm$ 95% confidence interval) per unit effort estimated from post-season surveys, with their corresponding historical averages (dashed horizontal lines); and (B) average carapace width of legal-size male crabs caught during the post-season survey ($\pm$ standard deviation) and the historical average (red dashed horizontal line).

Landings

After peaking at more than 400 t in 2014, landings declined steadily through 2021 (Figure 13A). A moratorium has been in place since 2022.

Stock Status Indicator

The standardized CPUE values from both the commercial fishery and post-season surveys declined sharply in 2014 and have remained below their respective thresholds since 2015 (Figure 13B). In 2025, the commercial fishery indicator was unavailable, while the post-season survey indicator remained below the threshold, with a probability of 100%. According to the indicator weighting system (Loboda et al. 2026), this yields an incomplete final score of 1 owing to the absence of commercial CPUE data, placing the stock in the Critical zone. Nevertheless, all available evidence indicates no improvement in the status of the stock since 2021, and the stock remains in the Critical zone.

Recruitment

The abundance index for pre-recruits has remained at historically low levels since 2015 (Figure 13D).

Abundance and Size

In 2025, the numbers of both crabs left behind by the fishery and recruits per unit effort remained historically low, showing no improvement since the moratorium was implemented in 2022 (Figure 14A). The average size of commercial males is comparable to the historical average (Figure 14B).

Current Status

All the indicators from the 2025 post-season survey show no evidence of improvement in stock status since 2015, despite the moratorium initiated in 2022. Even in the absence of one of the two indicators used to assess stock status under the PA, the available evidence suggests that the stock remains in the Critical zone.

Stock Status and Trends in Area 12C

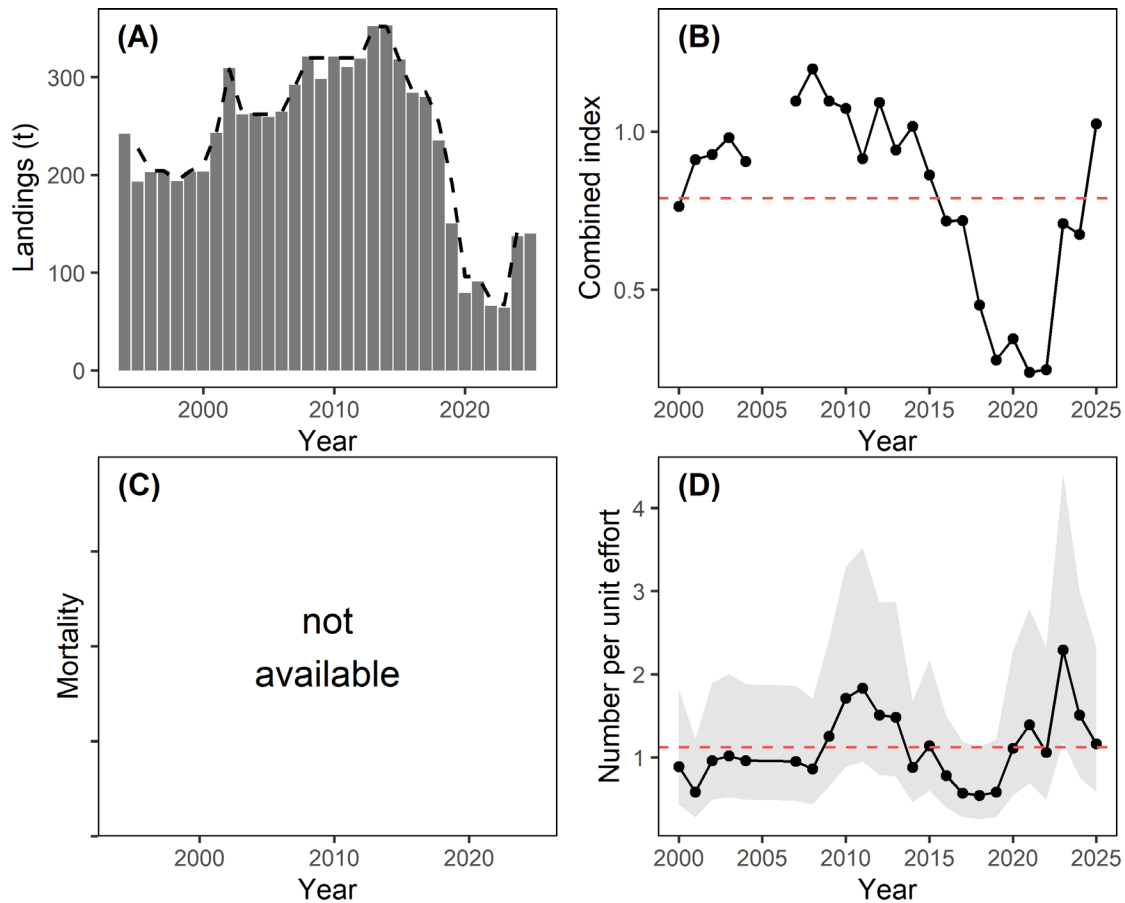


Figure 15. Area 12C: (A) landings (grey bars) and total allowable catch (TAC; black dashed line); (B) combined index and historical average (red dashed horizontal line); (C) fishing mortality (data not available); and (D) average number of pre-recruits per unit effort ($\pm 95\%$ confidence interval) in the post-season survey, with the corresponding historical average (red dashed horizontal line).

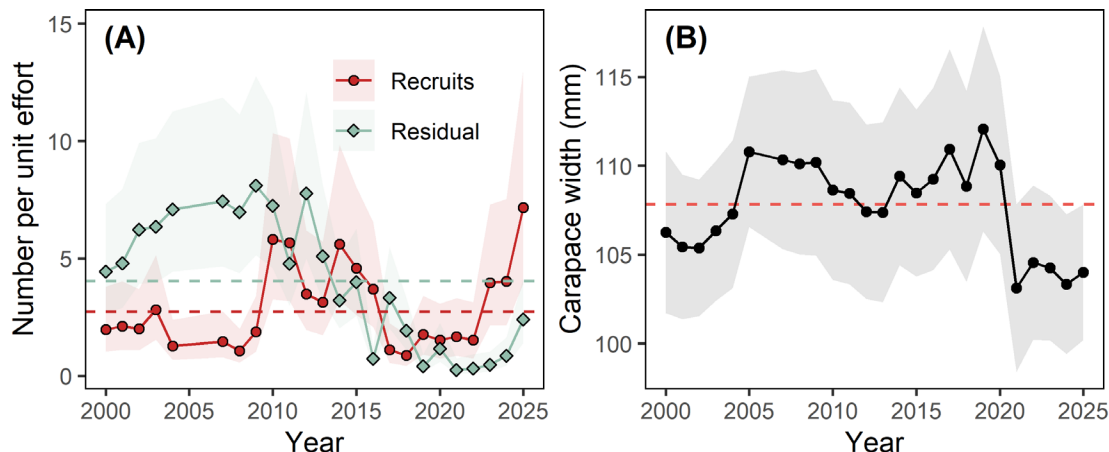


Figure 16. Area 12C: (A) average numbers of recruits (red) and crabs left by the fishery (LF [green]; $\pm$ 95% confidence interval) per unit effort estimated from the post-season surveys, with their corresponding historical averages (dashed horizontal lines); and (B) average carapace width of legal-size male crabs caught in the post-season survey ($\pm$ standard deviation) and the historical average (red dashed horizontal line).

Landings

Landings declined sharply beginning in 2015, reaching a historical low of 64 t in 2023 (Figure 15A). Landings then increased in 2024 and remained stable in 2025 (140 t, with a TAC set at 142 t).

Stock Status Indicator

After reaching its lowest values in the time series between 2019 and 2022, the combined index is increasing and above the historical average (Figure 15B).

Recruitment

After peaking in 2023, the number of pre-recruits per unit effort declined to a value close to the historical average (Figure 15D).

Abundance and Size

The number of recruits per unit effort in the post-season survey increased in 2025 (+78%) for the third straight year, reaching the highest value in the time series (Figure 16A). Although the number of crabs left by the fishery per unit effort also increased in 2025, it remains below the historical average. Over the past five years, the average size of commercial males has remained fairly stable at historically low levels (Figure 16B).

Current Status

Although most indicators in Area 12C are positive, the size of commercial crabs remains small. The abundance index for pre-recruits suggests that recruitment to the fishery could be maintained over the next few years.

Stock Status and Trends in Area 16A

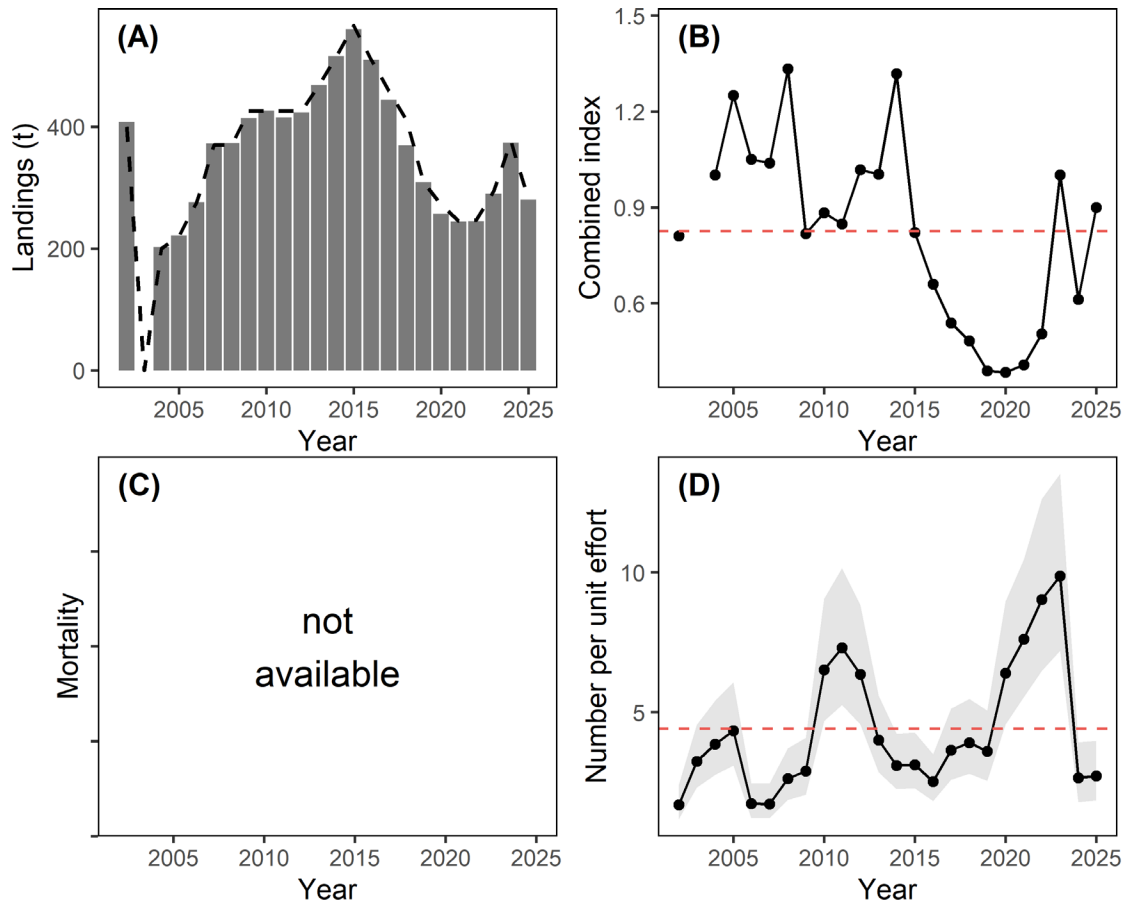


Figure 17. Area 16A: (A) landings (grey bars) and total allowable catch (TAC; black dashed line); (B) combined index and historical average (red dashed horizontal line); (C) fishing mortality (data not available); and (D) average number of pre-recruits per unit effort ($\pm 95\%$ confidence interval) in the post-season survey and the historical average (red dashed horizontal line).

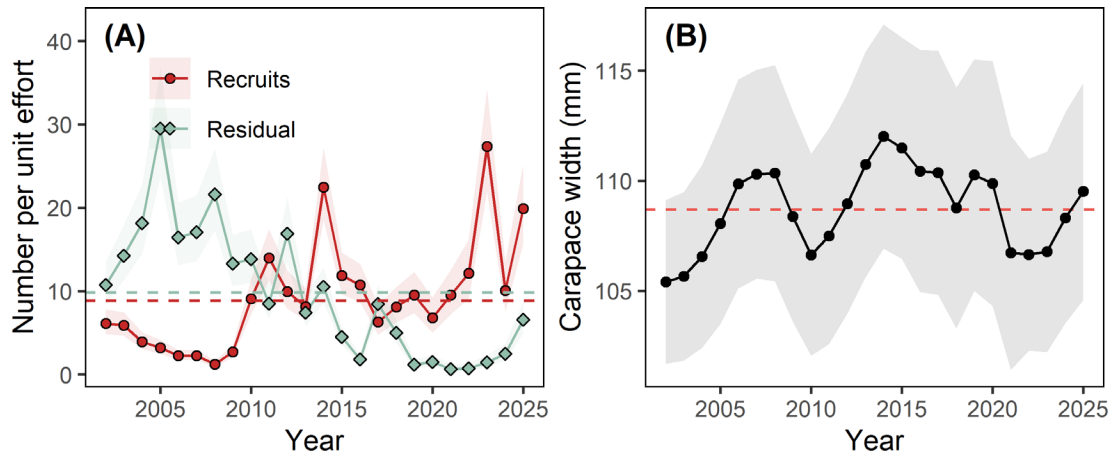


Figure 18. Area 16A: (A) average numbers of recruits (red) and crabs left by the fishery (LF [green]; $\pm$ 95% confidence interval) per unit effort estimated from the post-season surveys, with their corresponding historical averages (dashed horizontal lines); and (B) average carapace width of legal-size male crabs caught in the post-season survey ($\pm$ standard deviation) and the historical average (red dashed horizontal line).

Landings

In 2025, landings declined by 24% to 285 t, exceeding the TAC set at 280 t (Figure 17A).

Stock Status Indicator

The combined index has fluctuated around the historical average over the past three years (Figure 17B).

Recruitment

The number of pre-recruits per unit effort, which was high in 2022–2023, declined in 2024 to below the historical average and remained there in 2025 (Figure 17D).

Abundance and Size

The number of crabs left by the fishery per unit effort increased in 2025 but remains below the historical average (Figure 18A). The number of recruits per unit effort nearly doubled in 2025 and is above the historical average (Figure 18A). The average size of commercial males increased in 2025 after four consecutive years below the historical average, and is now slightly above the historical average (Figure 18B).

Current Status

Despite variability in the combined index over the past three years, this indicator remains slightly above the historical average. The abundance index for pre-recruits suggests that recruitment to the fishery could decline in the coming years.

Ecosystem and Climate Change Considerations

During the summer, snow crab distribution is linked to the thickness and depth of the cold intermediate layer (CIL; approximately 50–150 m in depth), which serves as suitable habitat for the species during its benthic life stage. In recent years, a warming of the surface layer (0–50 m) and the deep-water layer (>250 m) has been observed in the Gulf of St. Lawrence, with record temperatures recorded in 2022 (Galbraith et al. 2024). These warmer conditions, together with reduced winter ice cover, affect both the thickness and minimum temperature of

the CIL. Consequently, the area (km²) of suitable thermal habitat for juvenile (0 °C to 2 °C) and adult (-1 °C to 3 °C) snow crabs has varied by year and fishing area. These changes influence crab distribution and abundance, with positive or negative effects depending on the area (Émond et al. 2020). In 2025, the area of suitable thermal habitat for adult crabs was below the historical average in areas 17, 16, 12C and 16A, comparable to the historical average in areas 15, 14 and 12A, and above the historical average in Area 13 (Figure 19B). The area of suitable habitat for juvenile crabs was below the historical average only in Area 17, comparable to the average in areas 16, 16A and 12C, and above the historical average in the more easterly areas (12A, 12B, 15, 13 and 14; Figure 19A).

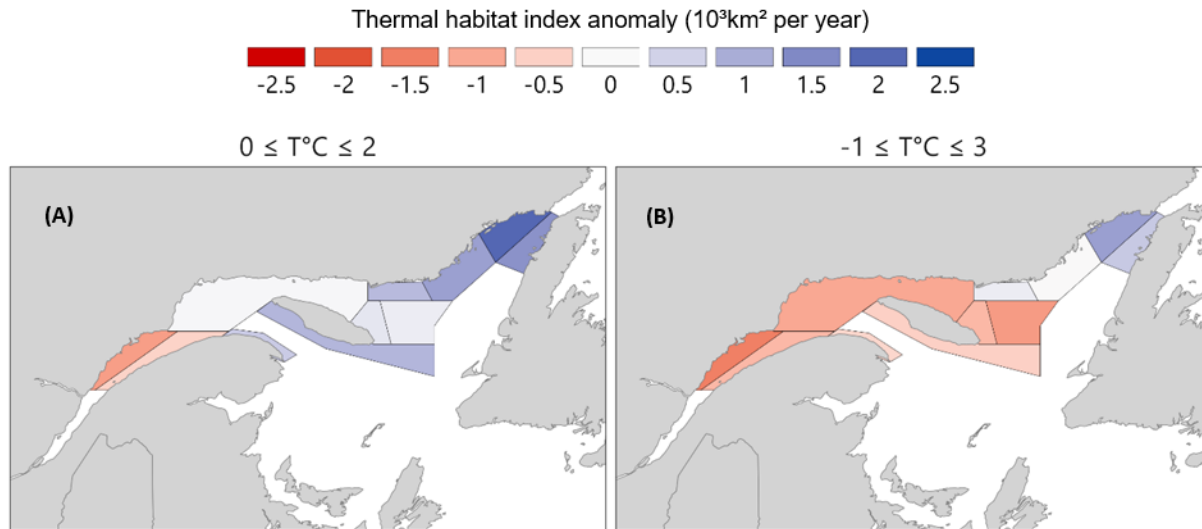


Figure 19. Anomalies in the favourable thermal habitat index for (A) juvenile snow crab (<12 mm) and (B) adult snow crab during the 1990–2025 period. Note that for the portion of Area 13 along the North Shore and Area 14, anomalies are based on the 1994–2025 period owing to an absence of temperature data in some years.

The duration of the pelagic larval development stages and larval survival rates are linked to surface water temperature, primarily in spring and summer. In addition, egg incubation time, crab growth and size at terminal moult are dependent on the water temperature in the areas on the seabed where crabs develop (Burmeister and Sainte-Marie 2010; Mullowney and Baker 2021).

A reduction in available habitat could lead to local concentrations of crabs in certain areas, intensifying density-dependent effects, such as the effects of intraspecific competition. Consequently, the distribution and productivity of snow crab stocks could shift in response to changes in temperature in the different water layers. The impact of warming waters on crab stock productivity and distribution is a major concern, and impacts could be quite different depending on the region.

Stock Advice

Stock status varies among areas; however, all areas show that recruitment to the fishery could remain stable or increase in the coming years. The one exception is Area 12B, where no signs of improvement have been observed. In the short term, the size of legal-size crabs remains small in several areas.

Harvest Decision Rule

According to the proposed harvest decision rule (Table 1), total potential removals in all fishing areas for the 2026 fishing season range from 5,393 t to 6,256 t, and are broken down as follows: 1,002–1,194 t for Area 17, 2,416–2,883 t for Area 16, 555–609 t for Area 15, 394–434 t for Area 14, 262–292 t for Area 13, 113–136 t for Area 12A, 282–306 t for Area 12C and 369–402 t for Area 16A. As Area 12B remains in the Critical zone, no potential removal level was determined.

Table 1. Percentiles of the projected distribution of removals for 2026 by fishing area according to the harvest decision rule. The values highlighted in blue correspond to the suggested values (in tonnes) based on the status of the three secondary variables in 2025: average size of post-season commercial crabs (Size), number of juveniles ≥ 78 mm per unit effort (Pre-recruits), and the thermal habitat index for adult crabs (THI), classified as positive (+; green), neutral (orange) or negative (-; red).

Additional Variables				Percentiles								
Area	Size	Pre-recruits	THI	10	20	30	40	50	60	70	80	90
17	-		-	857	1,002	1,106	1,194	1,277	1,360	1,449	1,553	1,697
16	-		-	2,067	2,416	2,668	2,883	3,084	3,285	3,501	3,752	4,102
15				445	492	526	555	582	609	638	672	719
14	-			336	370	394	415	434	454	474	499	532
13	-		+	200	226	245	262	277	292	308	327	353
12A	+			59	78	91	103	113	124	136	149	168
12C	-		-	264	282	295	306	316	326	337	350	368
16A		-	-	344	369	387	402	417	431	447	465	490

SOURCES OF UNCERTAINTY

Crab catchability varies depending on the interactions between several factors: the type of trap used and its volume and mesh size, the quantity and quality of bait, the soak time (which varies depending on fishing strategies) and environmental conditions. Given the changes observed over the years, the standardization of the CPUE warrants revision. In addition, the phenomenon of hyperstability in the commercial CPUE, where values remain high despite a decline in overall biomass, makes biomass indicators derived from commercial fishery data less reliable than those derived from independent survey data.

During the post-season trap surveys, the catchability of adolescent crabs and recruits is also influenced by the abundance of intermediate-shell adult crabs. This interaction directly affects estimates of recruitment to the fishery.

Independent surveys (DFO trawl surveys and industry post-season surveys) for this species have limited spatial coverage in the Estuary and northern Gulf of St. Lawrence owing to seabed characteristics, which may introduce bias in assessments of stock status. In addition, the post-season survey on the south shore of Area 13 (Survey 13T) was not conducted in 2025, increasing uncertainty in the CPUE estimates for that area.

The Estuary and northern Gulf of St. Lawrence are currently experiencing the effects of climate change, and snow crab habitat is not exempt from these changes. Such environmental shifts could have cumulative effects on the distribution, productivity, growth, and size at terminal moult of snow crabs, although the magnitude of these effects remains uncertain.

The science advice could be improved by adopting biological production units as stock assessment units, thereby better reflecting population dynamics than the current reliance on fishery management area boundaries.

LIST OF MEETING PARTICIPANTS

Name	Affiliation	Feb. 10	Feb. 11	Feb. 12
Audet, Véronique	Agence Mamu Innu Kaikuseth [Mamu Innu Kaikuseth Agency]	x	x	x
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Bouchard, Donald	Essipit First Nation	x	x	x
Bourdages, Hugo	DFO – Science	x	x	x
Boucher, Jean-René	Comité de cogestion de la zone 16 [Area 16 Co-management Committee]	x	x	x
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Henri, Louis	Fisher, Area 12A	x	x	x
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Name	Affiliation	Feb. 10	Feb. 11	Feb. 12
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Picard, Samuel	Pessamit First Nation	X	X	-
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Tamdrari, Hacène	DFO – Science	X	X	X
Vallée, Simon	Fisher, Area 17	X	X	X
Vigneault, Guy	Pêcherie Shipek [Shipek Fisheries]	X	X	-
Wiseman, April	Fish, Food and Applied Workers	X	X	X

SOURCES OF INFORMATION

- Burmeister, A. and Sainte-Marie B. 2010. Pattern and causes of a temperature-dependent gradient of size at terminal moult in snow crab (*Chionoecetes opilio*) along West Greenland. *Polar Biol.* 33: 775–788.
- DFO. 2025. [Assessment of the Estuary and Northern Gulf of St. Lawrence \(Areas 13–17, 12A, 12C and 16A\) Snow Crab \(*Chionoecetes opilio*\) Stocks in 2024](#). DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2025/029.
- Émond, K., Sainte-Marie, B. and Bêty, J. 2020. Long-term trends and drivers of larval phenology and abundance of dominant brachyuran crabs in the Gulf of St. Lawrence (Canada). *Fish. Oceanogr.* 29: 185–200.
- Galbraith, P.S., Chassé, J., Shaw, J.-L., Dumas, J. and Bourassa, M.-N. 2024. Physical oceanographic conditions in the Gulf of St. Lawrence during 2023. *Can. Tech. Rep. Hydrogr. Ocean Sci.* 378: v + 91 p.
- Loboda, S., Cervello, G., and Lévesque, I. 2026. [Status of Snow Crab \(*Chionoecetes opilio*\) Stocks in the Estuary and Northern Gulf of St. Lawrence \(Areas 13–17, 12A, 12B, 12C and 16A\) in 2024](#). DFO Can. Sci. Advis. Sec. Res. Doc. 2026/015. v + 138 p.
- Mullowney, D.R.J. and Baker, K.D. 2021. Size-at-maturity shift in a male-only fishery: factors affecting molt-type outcomes in Newfoundland and Labrador snow crab (*Chionoecetes opilio*). *ICES J. Mar. Sci.* 78(2): 516–533.
- Puebla, O., J.-M Sévigny, B. Sainte-Marie, J.-C. Brêthes, A. Burmeister, E.G. Dawe, and Moriyasu, M. 2008. [Population genetic structure of the snow crab \(*Chionoecetes opilio*\) at the Northwest Atlantic scale](#). *Can. J. Fish. Aquat. Sci.* 65(3): 425–436.

Sainte-Marie, B., Dufour, R., Bourassa, L., Chabot, D., Dionne, M., Gilbert, D., Rondeau, A., and Sévigny, J.-M. 2005. [Criteria and Proposition for the Definition of Snow Crab \(*Chionoecetes opilio*\) Production Units in the Estuary and Northern Gulf of St. Lawrence.](#) DFO Can. Sci. Advis. Sec. Res. Doc. 2005/059. vi + 20 p.

THIS REPORT IS AVAILABLE FROM THE:

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ISSN 1919-5087

ISBN 978-0-662-72215-1 Cat. No. Fs70-6/2026-041E-PDF

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Department of Fisheries and Oceans, 2026

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Correct citation for this publication:

DFO. 2026. Snow Crab (*Chionoecetes opilio*) Stock Assessment in the Estuary and Northern Gulf of St. Lawrence (Areas 13–17, 12A, 12B, 12C and 16A) in 2025. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2026/041.

Aussi disponible en français :

MPO. 2026. Évaluation des stocks de crabe des neiges (*Chionoecetes opilio*) de l'estuaire et du nord du golfe du Saint-Laurent (zones 13 à 17, 12A, 12B, 12C et 16A) en 2025. Secr. can. des avis sci. du MPO. Avis sci. 2026/041.