

Little Hope Herring Surveys

2025 Survey Findings

Presented to the Little Hope Management Committee
By Donnie Roache

2025 Survey Program at a Glance

Acoustic Surveys

9 survey days · Aug 20 – Nov 14

Method:

Echo-integration acoustic biomass estimation,
processed in Echoview

Area surveyed:

Mean 19 km² per survey

Independent Vessel Surveys

23 surveys · 202 transects

Vessels:

Bomp n Tom, Eagle II, Eagle VIII,
Saltwater Hunter

Cumulative NASC:

1,590,554 m²/nmi²

9

Survey Days

23

Number of surveys

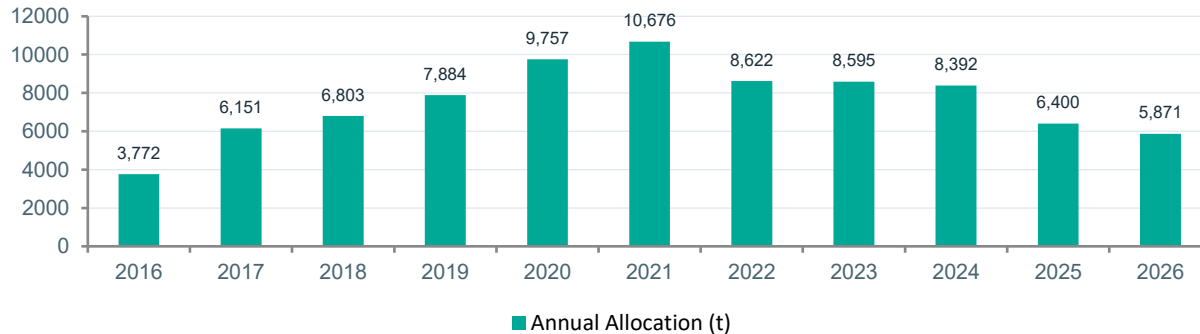
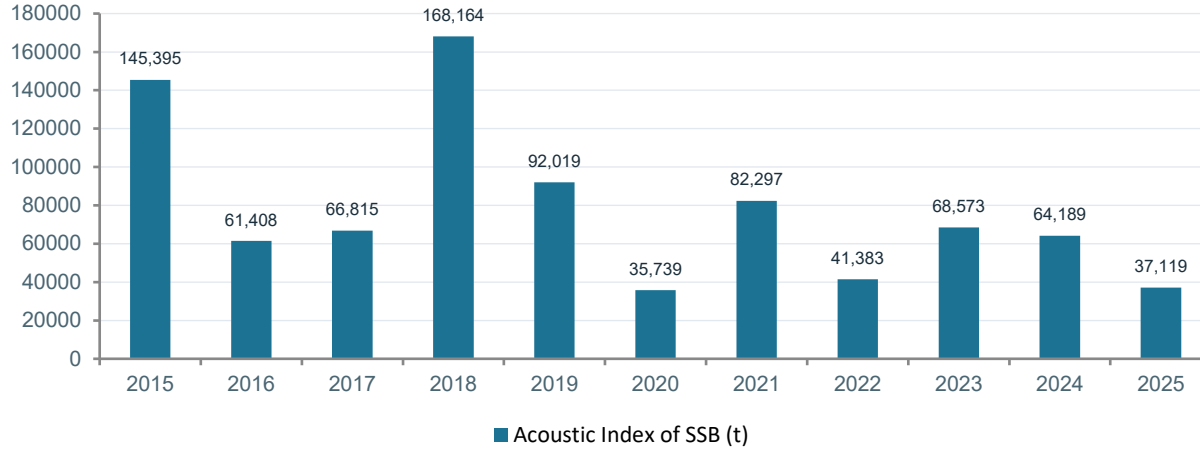
202

Total transects

37,119 t

DFO biomass est.

Historical Survey & 2026 Quota Results



37,119 t

2025 Survey Result

5,871 t

2026 Quota

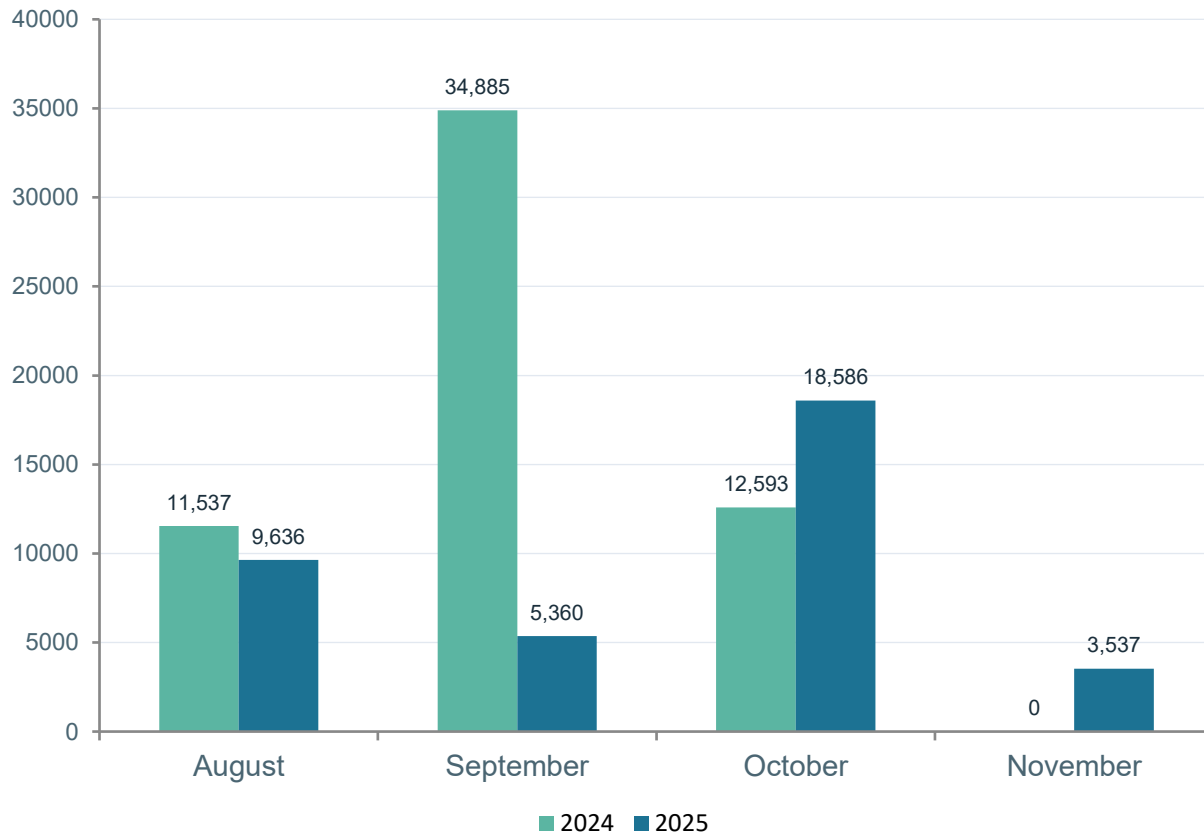
78,464 t

SSB avg 2015–2025

7,538 t

Allocation avg 2015–2025

DFO Biomass Estimates —2024 vs 2025



37,119 t

2025 Total

59,013 t

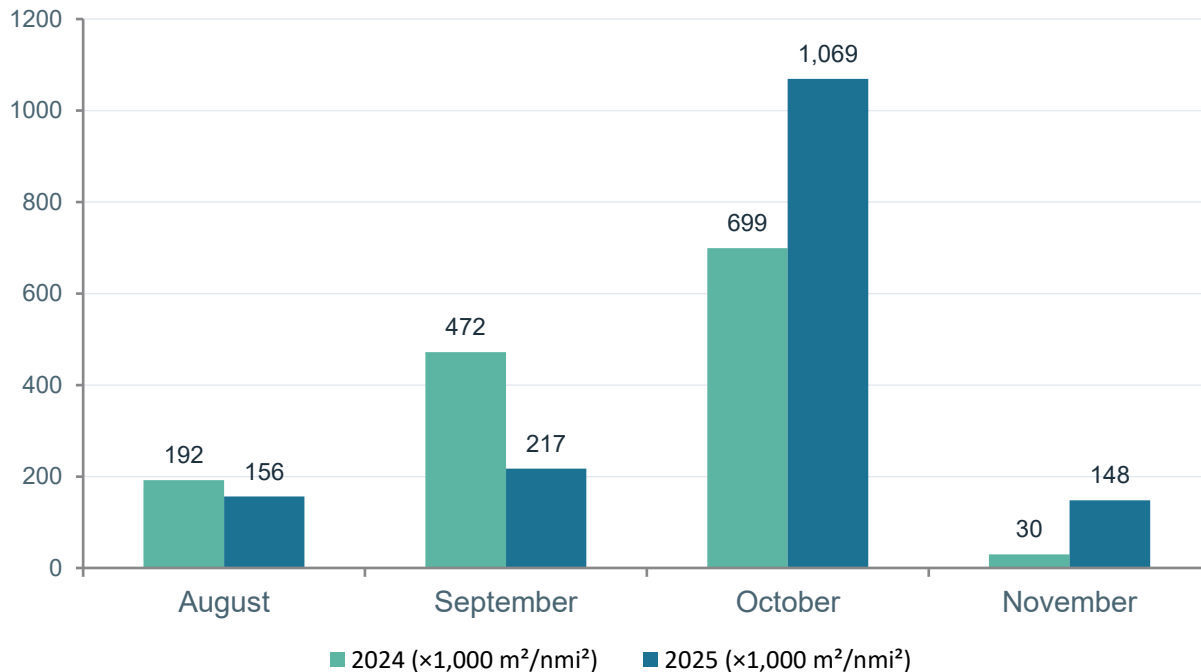
2024 Total

-37%

Year-over-year change

Vessel Survey Results (NASC): 2024 vs 2025

Monthly NASC Totals ($\times 1,000 \text{ m}^2/\text{nmi}^2$)



2025 Concentration Tiers

17

Extreme

NASC > 15,887

15

Very High

9,667–15,887

38

High

3,972–9,667

132

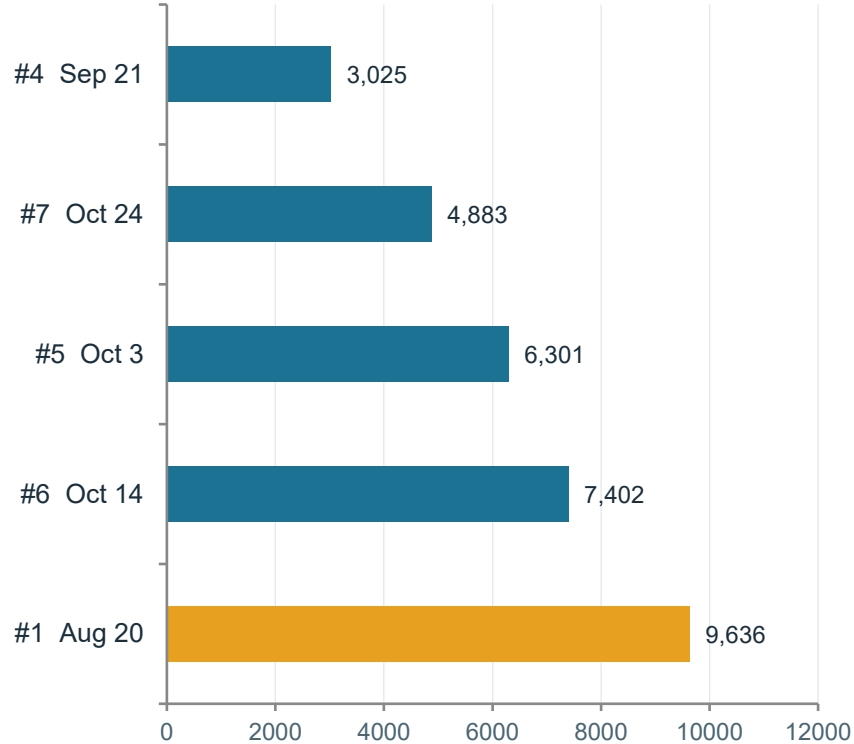
Moderate

NASC < 3,972

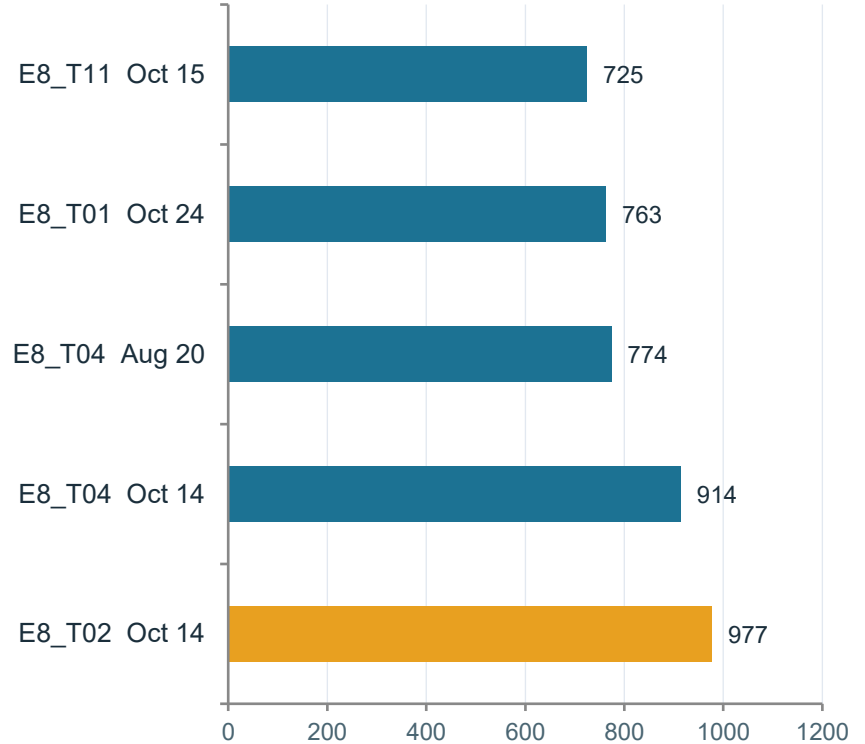
2025 Peak: 126,802 NASC
(Oct 15, Bomp n Tom)

Top 5 DFO Biomass Readings —2025

By Survey Run



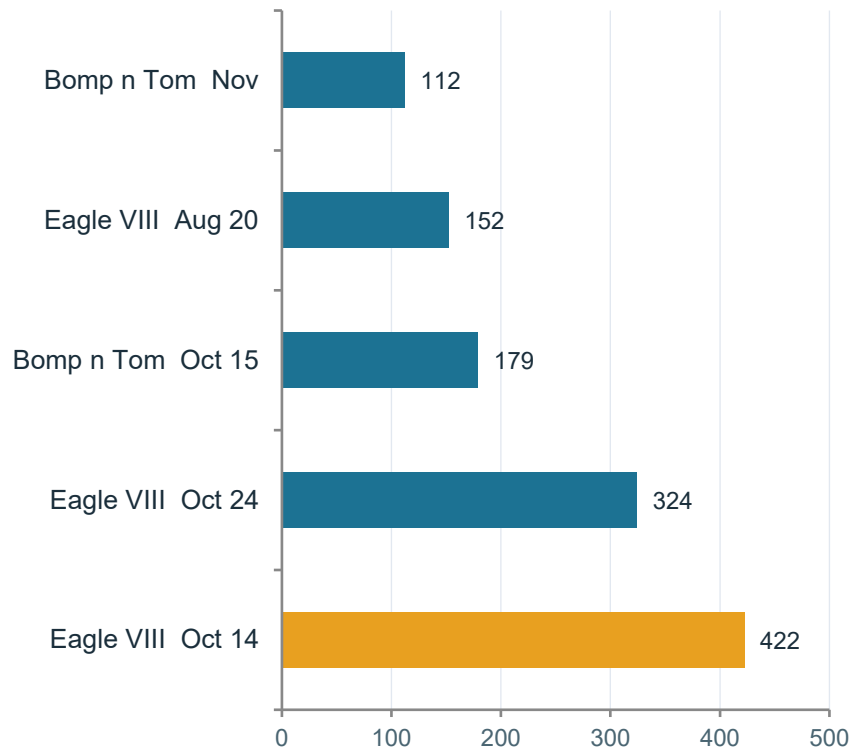
By Transect



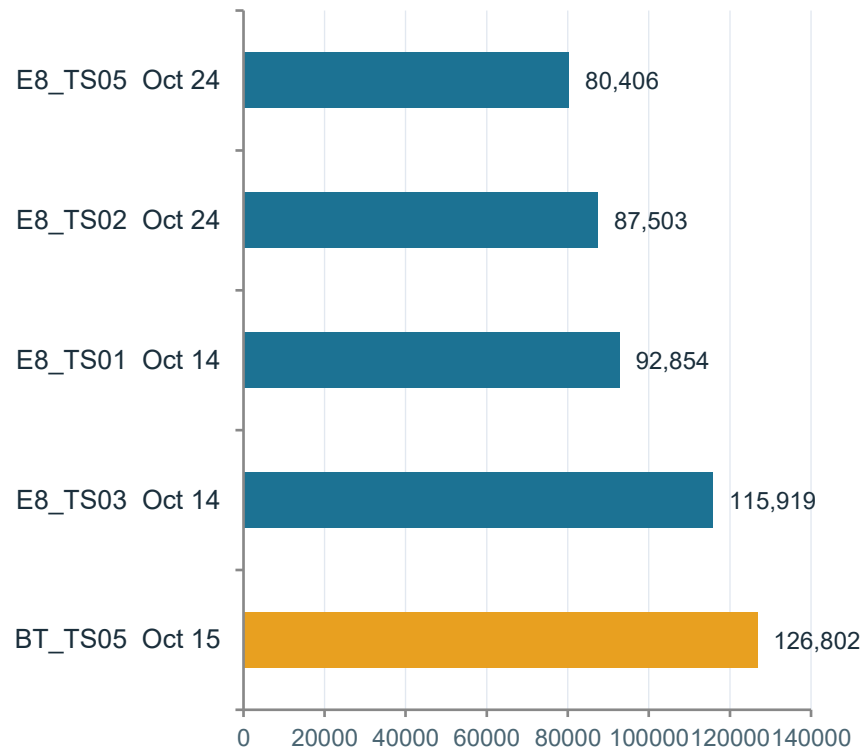
★ Gold bar = highest reading

Top 5 Vessel NASC Readings —2025

By Survey ($\times 1,000 \text{ m}^2/\text{nmi}^2$)



By Transect (m^2/nmi^2)



★ Gold bar = highest reading | BT = Bomp n Tom | E8 = Eagle VIII

AI-Enhanced Data Analysis

Turning raw echosounder data into actionable fishery intelligence

512 Transects Analyzed

2024–2025 EK80 data automatically processed and classified

Pattern Recognition

Migration corridors and spawning aggregation identified from NASC

Predictive Survey Planning

Historical hotspot positions guide future targeting same ground, year after year

Multi-Vessel Data Fusion

4 vessels unified into one coherent picture with spatial cross-validation

AI processes thousands of NASC data points, pinpoints high-concentration zones, tracks seasonal movement, and flags predictive hotspots — delivering in hours what manual analysis takes weeks.

Repeatable Spawning Migration — 2024 & 2025

Month	Centroid	Hotspots	Avg Depth	Behaviour
August	43.79N 64.83W	11	11.4 fath	Schools building
September	43.95N 64.66W	15	8.3 fath	Drifting NE
October	43.97N 64.59W	22	11.2 fath	Peak biomass - staging
November	43.93N 64.72W	4	5.6 fath	Spawning aggregation

October

Peak biomass staging
11–14 fathoms

November

Spawning aggregation
43.93N, 64.72W
4 to 7 fathoms

Key Findings (2024 & 2025 Combined)

- Schools drift NE ~11 km from Aug through Oct, then snap SW onto spawning bed in Nov
- Geographic spread collapses from ~40 km (Oct) to <6 km (Nov) — classic spawning signal
- 2024 & 2025 paths within ~1.5 km — strong site fidelity; same ground year after year

Herring Surveys via Drone:

Technical & Regulatory Challenges

Feasibility Assessment: Not Viable with Current Technology

Five Critical Constraints

Battery Life

M4T: ~50 min flight time
Round-trip to survey area: 27–33 min
Actual survey time: 16–28 min per battery

Distance & Coverage

Survey area: 12–15 km offshore
Drone range limited in practical terms
Would need many flight cycles

Long-Range Drones

Professional VTOL drones: \$50k–\$150k+
High capital investment
Maintenance complexity at sea

Regulatory Burden

Transport Canada certification required
Overseas operation permits
Additional time & paperwork

Biological Reality

Herring: deep during day, surface at night
Thermal imaging cannot penetrate water
Cannot detect herring under the surface

Recommendation: Combine drone reconnaissance with boat-based acoustic surveying — more practical and cost-effective than drones alone.

Questions or comments?

Explore the Data

Interactive maps, survey reports & spatial analysis

wavewise.ca/littlehope

Survey Maps

Biomass Estimates

Migration Analysis

Annual Reports

Prepared by Wavewise Marine Services