TRANSFORM BOTTOM TRAWLING

March 2026

The Impact of Bottom Trawling on Food Security, Sovereignty and Nutrition

Alaska: Yukon-Kuskokwim Delta - Pollock fishery impacts

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This case-study is part of the wider Transform Bottom Trawling Coalition research highlighting the global impact of bottom trawling on food security.

Introduction

The Yukon–Kuskokwim Delta is a predominantly Alaska Native region where Chinook and chum salmon have, since time immemorial, underpinned diet, culture, and livelihoods. In recent years, salmon runs in the Yukon and Kuskokwim rivers have declined sharply, leading to severe subsistence fishing restrictions and a growing food security crisis. Multiple drivers that have contributed to the salmon decline are reported in the literature, including climate and ecosystem change, disease, management decisions, and commercial bycatch (NOAA Fisheries 2022; Food security crisis in the Yukon River Basin 2025).

The pollock trawl fishery is a cornerstone of Alaska's seafood economy, accounting for roughly half of Alaska's landed volume and about 60% of total U.S. wild-capture seafood. At the same time, the pollock fishery is responsible for large by-catch numbers and reports show the currently defined “mid-water” trawl frequently comes into contact with the seafloor contributing to habitat degradation (Oceana, 2022; NPFMC, 2022; NMFS & NPFMC, 2025). National seafood production goals and export-oriented supply chains therefore sit in tension with subsistence- and place-based food systems as well as threatening cultural and traditional livelihoods.

The Gulf of Alaska remains the only North Pacific region without a “freeze-the-footprint” approach to bottom trawling. An Oceana analysis estimates that 91% of Gulf seafloor habitat remains open to trawling (Oceana 2023), despite proposals showing that key habitats could be protected while maintaining most existing trawl effort.

Key Context

- Salmon is the primary food and protein source in Y-K communities.
- Salmon runs are low and food security is in crisis.

- Pollock “pelagic” trawl fisheries in Alaska routinely contact the seabed.
- Pollock fisheries discard on the order of 24 million lbs of bycatch annually including halibut, sablefish, Chinook and chum salmon.
- Pollock trawling is framed as a national food supply but linked locally to bycatch.
- Policy debates pitch bycatch and habitat concerns against jobs and Community benefits

Key Informant Interviews

To deepen the understanding of these impacts, two meetings were conducted with key stakeholders:

- An interview with YTribal Council representatives and a meeting with representatives from different Alaskan fishers and conservation organizations.

The interview and meeting focused on research questions regarding (1) negative competition; (2) participation in trawling; (3) nutritional impacts; and (4) prevailing narratives.

Results Based on Interviews

1. Negative competition and impact on small-scale fisheries

Interviewees and supporting analyses identify salmon bycatch in the pollock fishery as a key and addressable stressor. Stakeholder notes report pollock fisheries discard on the order of 24 million lbs of bycatch annually, including halibut, sablefish, Chinook, and chum salmon. Conservation groups and scientific syntheses challenge the characterization of pollock trawls as purely “midwater,” as evidence shows that these gears frequently contact the seafloor in practice. Seafloor contact disturbs benthic habitats and food webs, with potential indirect effects on salmon through broader ecosystem pathways (AMCC 2023; NOAA Fisheries 2022; Food Security Crisis in the Yukon River Basin, 2025).

Interviewees described a loss of autonomy and cultural continuity as subsistence salmon access declines, with management systems that prioritize national production over local subsistence needs. Because salmon provides more than half of local protein, reduced availability and access directly undermines nutritional security and stability of supply. Interviewees linked declining salmon availability to immediate household-level nutritional impacts.

2. Participating in trawling and food security

Pollock trawling supplies national seafood markets, including institutional buyers such as school meal programs, and contributes to overall U.S. seafood availability. Local benefits in Western Alaska are primarily mediated through the Community Development Quota (CDQ) program, which allocates a share of groundfish quotas (including pollock) to regional CDQ groups. These benefits are mostly indirect, realized through revenues, employment, and community investments rather than direct provisioning of fish to Yukon–Kuskokwim households. Interviewees noted that CDQ governance and scale concentrate decisions at

regional or corporate levels rather than at the village level, limiting local control over harvesting, processing, and distribution. Specific data on village-level ownership or crew participation were not reported.

Interviewees emphasized that CDQ-related income can alleviate some economic pressure but does not replace subsistence salmon harvests or restore local control over food systems. As a result, participation as structured under CDQ does not resolve food insecurity driven by salmon declines and may undermine food sovereignty by shifting decision-making away from local communities. Interviewees stated that federal marine fisheries management does not explicitly recognize food security or subsistence rights as primary objectives, and that state policy prioritizes subsistence in principle but allows commercial openings where possible. Management decisions were characterized as emphasizing maximum sustainable yield and short-term decision cycles rather than Indigenous knowledge and long-term food security.

3. Nutritional impacts and consumers

Interviewees reported that salmon provides more than half of local protein, making subsistence access central to nutrition and cultural continuity (interviews and Fall 2018). Pollock products are widely consumed nationally, including in school meals, but results from the literature search and interviews indicated that these flows do not compensate for local losses in salmon availability (Genuine Alaska Pollock Producers 2026). The Yukon River Basin food security synthesis underscores that reduced salmon availability has immediate nutritional and cultural consequences for rural households (Food security crisis in the Yukon River Basin, 2025).

4. Narratives and policy framing

National and industry narratives frame pollock as a sustainable, large-scale food fishery and a critical economic engine, while Community Development Quota (CDQ) advocates highlight investments and employment benefits for Western Alaska communities (Genuine Alaska Pollock Producers, 2026; Anchorage Daily News, 2024). Counter-narratives stress that industrial trawling, bycatch, and habitat impacts threaten subsistence food systems and should be more tightly constrained (Anchorage Daily News, 2025; AMCC 2023). Dominant narratives emphasize employment and pollock as “food for the world,” while these claims do not adequately reflect local food security outcomes. Stakeholder submissions call for clearer pelagic gear definitions, improved monitoring, and technological innovation to reduce bottom contact and unobserved mortality (Ocean Conservancy comment; NPFMC Pelagic Trawl Gear Definition, June 2025). Media opinion pieces and stakeholder submissions reflect polarized views: support for CDQ and pollock's economic role versus calls to reduce or end industrial trawling. NOAA's 2024 decision to deny a petition for stricter Chinook bycatch limits, and ongoing debates over pelagic trawl gear definitions, are cited as governance signals that shape public narratives.

NOAA Fisheries identifies climate-driven ecosystem change as a major driver of salmon declines, while interviewees and conservation analyses emphasize bycatch and habitat impacts as addressable pressures. Tribal voices, conservation groups, and some stakeholder coalitions argue that trawling-related impacts threaten subsistence food security and food sovereignty and call for stricter bycatch controls, clearer gear definitions, and habitat protections.

Conclusion

The Alaska case studies show a clear tension between large-scale pollock trawling and subsistence-based food systems in Western Alaska. Bottom trawling affects food security not through direct competition for pollock as food, but through bycatch of salmon, disturbance of seabed habitats, and cumulative ecosystem effects, including frequent bottom contact by gear classified as "pelagic." For Yukon–Kuskokwim Delta communities—where salmon has underpinned diet, culture, and governance since time immemorial—these impacts translate directly into food insecurity and loss of food sovereignty.

Although subsistence fishing and escapement goals are formally recognized in law, there is a gap between national narratives that frame pollock as "food for the world" and local realities of closed salmon fisheries, emergency food aid, and cultural disruption. The pollock fishery is among the most closely monitored in the world, with high observer coverage and bycatch limits, yet management remains largely driven by single-species stock assessments and short-term yield objectives. Subsistence needs, Indigenous knowledge, and cumulative ecosystem impacts are not systematically integrated into quota-setting or decision-making.

Academic analysis further suggests that policy frameworks emphasizing climate change as the primary cause of salmon decline may unintentionally reduce incentives for industry burden-sharing or mitigation, limiting tangible gains for marginalized subsistence communities (Warren, 2024). Importantly, the evidence does not point to an inevitable trade-off between food production and subsistence protection. Management options already under discussion—including freezing the trawl footprint, clarifying pelagic gear definitions, improving monitoring, and incentivizing gear innovation—offer realistic pathways to reduce ecosystem risk while maintaining harvest levels. Aligning these measures with Indigenous food sovereignty and long-term food security goals is essential.

Priority actions emerging from the evidence include:

1. Integrate subsistence needs and Indigenous knowledge into fisheries management, ensuring they are systematically considered in quota-setting and decision-making processes.
2. Adopt ecosystem-based management approaches that account for bycatch, seabed disturbance, and cumulative ecosystem impacts rather than relying primarily on single-species stock assessments.
3. Implement measures to reduce salmon bycatch, including strengthening monitoring, tightening bycatch limits, and incentivising gear innovation.
4. Clarify and regulate trawl gear definitions and practices, particularly the classification of "pelagic" gear that still makes frequent contact with the seabed.
5. Limit spatial expansion of bottom trawling, for example by freezing the current trawl footprint to reduce ecosystem risk while maintaining pollock harvest levels.

Acknowledgements

We thank all participants, especially everybody who volunteered their time to be interviewed by us and provided background material including Nana Kweigyah (Canoe & Gear Owners Association of Ghana), Jerome Deamesi (Ghana Trawl Industry), Isaac Okyere (Africa Centre of Excellence in Coastal Resilience and University of Cape Coast), Linus Owino (Mariners for Action), Sebastian Rodrigues (All Goa Small Scale Responsible Fisheries Union), Siddharth Chakravarty (National Federation of Small-Scale Fish workers (NFSF), Debasis Shyamal (Purba Medinipur Matsyajibi Forum and Dakshinbanga Matsyajibi Forum), Amitrajit Chakraborty (National Federation of Small Scale Fishworkers and DISHA), Bally Philp (Scottish Creel Fishermen's Federation), Miftahul Khausar (Kesatuan Nelayan Tradisional Indonesia), Safira Ryanatami and Marthin Hadiwinata (Ekologi Maritim Indonesia), Martin Dias (Oceana Brazil), Guilherme Suzano Coqueiro (The University of British Columbia), Juan Parada (Greenpeace), Linda Behnken (Alaska Longline Fishermen's Association), Megan Williams (Ocean Conservancy).

A huge thank you to the partner organizations for their valuable contributions to this co-development process, specifically the TBT Coalition Research Coordination Group who steered this research from the beginning, including representatives from Blue Ventures, Open Seas, Oceana, Kesatuan Nelayan Tradisional Indonesia (KNTI), Ulinzi Africa Foundation (UAF), Project Seahorse, Alaska Longline Fishermen's Association (ALFA), Fauna and Flora, Dakshin Foundation, Pan African Vision for the Environment (PAVE), National Federation of Small Scale Fishworkers (NFSF), African Fish and Wildlife Conservancy (AFWC), Canoe & Gear Owners Association of Ghana (CaFGOAG), Community Action for Nature Conservation (CANCO Kenya), Oceans Alive Foundation, EDER (Environnement, Développement et Énergies Renouvelables), Fédération libre de la pêche artisanale , ONG Mauritanie 2000, Conseil National Interprofessionnel de la Pêche Artisanal au Sénégal (CONIPAS), Tom Collinson (People and Fish).

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