

You know there's a problem when "midwater" trawls snag more crab pots than bottom trawls do.

The NPFMC must address and rectify the current classification and oversight of "midwater" trawl gear.

Corrective action is necessary to restore the integrity of habitat protections, ensure accurate bycatch estimation, and align gear definitions with actual operating behavior in the fishery. The sole adequate remedy is to regulate all trawl gear that contacts bottom as bottom trawl gear, regardless of its stated design or original classification.

## I. Gear

Pelagic trawl gear used in the North Pacific is built with large mesh panels positioned directly behind the footrope and wing ends. These panels were formally added to the gear design in 1990, during a revision of the regulatory definition for pelagic trawls. At that time, public records clearly stated that this gear was "commonly fished in frequent contact with the seabed," and that the large mesh openings were intended to allow halibut and crab to fall out of the net before reaching the codend.

This is a key point. These escape meshes were not designed to handle rare or accidental contact. They were included because bottom contact at the front of the net, specifically from the footrope and sweep gear, was understood to be a NORMAL PART OF FISHING OPERATIONS. The gear was built to interact with benthic organisms, and the mesh design reflects that operational expectation.

For species like crab, which live on or near the seafloor and cannot swim away from approaching gear, the outcome is predictable. If they are not crushed outright, they are often swept into the front of the net, only to fall out through the large mesh panels before reaching the part of the net where bycatch is officially counted. These losses are unobserved, unrecorded, and unaccounted for in current monitoring systems, which only track what reaches the codend.

This creates a gap in bycatch data. The gear is removing or killing benthic species that never appear in the catch record. As noted by the Alaska Marine Conservation Council (2023), this form of unmeasured mortality is a consistent feature of the fishery, not an exception.

The current regulatory threshold used to define "non-impact" to crab, based on fewer than 20 crab retained in a tow, must be considered in context. This is not evidence of low interaction. On the contrary, if a net specifically designed to allow crab to fall out is still delivering 20 crab(or any crab) to the codend, one can be certain that magnitudes more(amongst other non-mobile seafloor species) were encountered at the gear front and lost before counting.

While the full extent of this unrecorded impact is unknown, the logic of the gear makes the outcome clear. If the footrope wasn't routinely contacting bottom, and if crab weren't regularly being encountered, there would have been no need to build large escape meshes into the front of the net. The design itself acknowledges the behavior.

For a fishery that depends on credibility, this disconnect between gear design and regulatory definition cannot remain. Correcting the classification of this gear, based on how it actually operates, is necessary to ensure that bycatch limits, habitat protections, and management decisions are based on complete and honest data.

## II. EFH

Essential Fish Habitat (EFH) models rely on underlying assumptions of habitat condition, structure, and function. In areas closed to bottom trawling but open to “midwater” trawl, habitat models frequently treat these zones as “minimally impacted” based on the absence of formally defined bottom-contacting gear. However, captain self reporting, gear telemetry, optical survey footage, and acoustic drag signatures confirm that contact with bottom by midwater trawls is widespread under routine fishing conditions.

Given that draggers frequently target fish aggregations near the seabed, midwater trawls are often intentionally deployed hard on bottom (one former trawl captain stated to me that he intentionally “compressed” his midwater net on bottom, while another stated that there “wouldn’t be a pollock fishery” if their gear couldn’t drag bottom).

Thus, when EFH condition is modeled in such areas, results are inherently flawed. Specifically, habitat quality is being estimated based on post-disturbance ecological structure. Habitat types and community compositions most tolerant of trawl activity are overrepresented, while more sensitive structures (e.g., burrow complexes, emergent sponge assemblages, or sediment-sensitive infauna) are underrepresented or absent.

Consequently, these designations are not accurate representations of undisturbed or optimal habitat. Conservation thresholds derived from these EFH models risk being non-protective, as the benchmarks themselves are based on already-impacted systems. This poses challenges for HAPC prioritization, cumulative effects modeling, and the design of habitat buffers under NEPA and MSA.

### III. Carbon Release

Recent global research has established that bottom trawl represents one of the most significant human-caused mechanisms for marine carbon disturbance. The 2021 study by Sala et al. (Nature) estimated sediment disturbance from bottom trawling results in carbon fluxes equivalent to approximately 1 gigaton of CO<sub>2</sub> annually, comparable in scale to the emissions from global aviation.

Given that “midwater” trawl gear in the North Pacific routinely contacts the seafloor (at a rate of around 6 square miles per vessel, per day for large CPs) similar disturbance effects are undoubtedly present but currently unquantified in environmental assessments. Carbon release from sediment disruption is not limited to traditional bottom trawls; it is a function of physical interaction between gear components and the seabed. When “midwater” gear drags footropes, trawl doors, or ground cables across the substrate, especially in high-yield pollock areas with unconsolidated sediment, carbon release is inevitable and predictable.

So.....this presents a significant policy inconsistency. Climate variability is increasingly cited in NPFMC docs as a contributing factor to recruitment declines and productivity shifts. However, fishing activities (trawl) which actively accelerate those climate feedback loops remain largely unaccounted for in management reviews. Thus, if the fishery is both responding to and contributing to climate-related stressors, then failure to assess and mitigate its carbon footprint constitutes an analytical omission.

In terms of regulatory relevance, there are no current provisions in EFH designations, FMP environmental impact statements, or MSC certifications that account for carbon disturbance attributable to trawl-induced sediment agitation (and specifically the issue of “midwater” nets on bottom). This exclusion limits NPFMC to engage in climate-responsible policy development, and thus undermines the credibility of “climate resilience” and “eco-friendly” claims made by stakeholders and/or certifying bodies.

#### IV. Economic Incentive

Incentive structures embedded in North Pacific pollock fisheries exert significant pressure on vessel operators to maintain high catch-per-unit-effort ratios across the season. Pollock aggregate near benthic substrates during certain life stages and seasonal events, including pre-spawning behaviors and late-winter dispersal. When fish schools settle near the seafloor, vertical avoidance of bottom contact becomes economically non-viable.

Trawl gear manufacturers and vessel operators report that modern midwater nets are fully capable of being fished at or near the seafloor for extended durations with minimal damage to gear components. As documented in the Council's 2023 Pelagic Trawl Gear Innovation Paper, vessel behavior routinely includes planned contact with seabed contours to maximize harvest efficiency.

Economic modeling of trawl operations suggests that the marginal increase in fuel or maintenance costs associated with bottom proximity is often outweighed by catch volume gains. As a result, intentional bottom contact occurs not as an accident or edge-case, but as an economically rational choice within the parameters of the current regulatory system (AKA, because it has been rubber-stamped and pre-approved).

But....because the gear is still categorized as "midwater", the resulting tows are not subject to the spatial or temporal restrictions that apply to bottom trawl deployments. In practice, this results in functionally identical benthic interaction between gear classes that are regulated differently. From both an enforcement and habitat protection perspective, the current system allows known and documented circumvention of bottom contact controls through definitional ambiguity.

#### V. Regulatory Ambiguity

The federal definition of pelagic trawl gear remains structurally vague and technologically outdated. This creates substantial enforcement challenges for the National Marine Fisheries Service (NMFS), onboard observers, and third-party certifiers attempting to verify gear conformance.

Without a functional performance standard, enforcement must rely on intent or documentation rather than behavior. Trawl gear that is deployed and fished on the seafloor may be reported as "pelagic" if it lacks certain weight or contact features, even if it demonstrably drags bottom during standard operation. This produces a definitional loophole with direct implications for habitat protection and bycatch management.

Further, definitional ambiguity undermines inter-jurisdictional consistency. For example, the State of Alaska and several West Coast jurisdictions define midwater gear more explicitly in relation to bottom contact. The discrepancy between State and Fed classifications creates confusion in joint-managed areas and undermines public understanding of gear impacts. From a legal and management standpoint, consistent definition across regulatory frameworks is foundational for compliance, monitoring, and litigation defense.

#### VI. Sustainability Certs and NPFMC Credibility

The Marine Stewardship Council (MSC) certification of the Bering Sea pollock fishery is predicated on the assertion that the fishery "does not significantly disturb benthic habitats". This assertion is supported in the certification record by the classification of primary gear as "pelagic," with habitat risk rated accordingly low. However, independent peer review, as well as

public comment submissions by WWF and Greenpeace, state that the most recent reassessment that “midwater” gear in this fishery operates on the seafloor with unquantified contact.

If management bodies and certification regimes continue to rely on gear classifications which are known to be false, then credibility of both the NPFMC and the MSC is lost. Thus, the issue is not solely one of environmental outcome but of institutional transparency.

## VII. Public Confidence

For the public, regulation definitions determine credibility. When gear operating on the seafloor is officially designated as “midwater,” and when habitat protections rely on that designation to restrict access, public confidence in your public institution is lost.

Recent comments to the Council, including those from stakeholders in subsistence, commercial, and conservation sectors, have increasingly expressed concern over this inability to state that midwater and bottom are two different things. And.....while “technical” in nature, the inability to align gear classification with operational behavior is seen as a failure of basic regulatory responsibility. This perception poses long-term challenges to cooperative management, data acceptance, and stakeholder engagement.

A management body which cannot clearly define a trawl that drags on the bottom as a bottom trawl will, inevitably, encounter resistance when attempting to justify broader ecosystem-based management initiatives.

## VIII. Regulations

MSA says the NPFMC and NMFS are mandated to minimize bycatch to the extent practicable (16 U.S.C. § 1851(a)(9)), protect essential fish habitat (EFH) (16 U.S.C. § 1853(a)(7)), and base conservation and management measures on the best scientific information available (16 U.S.C. § 1851(a)(2)). The continued classification of midwater trawl gear as non-bottom-contact, despite extensive documentation of regular bottom contact, conflicts with these statutory obligations.

First, the current classification fails the “best scientific information” standard. Observers, gear manufacturers, vessel monitoring systems, crab catch data, “midwater rocks”, “midwater crab pots”, and independent video surveys confirm that bottom contact is frequent. These contacts are not incidental. They are repeatable and behaviorally predictable. Gear function diverges from regulatory description in a way that has ecological and statistical consequences.

Second, failure to classify this gear as bottom-contact frustrates the Council’s ability to meet its EFH mandates. Habitat impacts can’t be properly assessed or mitigated if gear interactions with the seafloor are neither disclosed nor accounted for in modeling or spatial analysis.

Finally, unobserved bycatch losses attributable to current gear configurations fall squarely within the MSA’s bycatch reduction provisions. NET DESIGNS WHICH FACILITATE THE LOSS OF DAMAGED OR DISLODGED BENTHIC ORGANISMS WITHOUT DOCUMENTATION IS A MASSIVE BYCATCH ACCOUNTING FAILURE. It is not possible to reduce what is not measured, and the present system has no mechanism for tracking these losses.

Collectively, these points justify regulatory reclassification under existing MSA provisions. The statutory pathway for revision is both clear and appropriate.

## IX. “Midwater” Trawl on Bottom are Bottom Trawls.

“A bulldozer is not an airplane”

“Innovations” or technological mitigations do not address the foundational issue. The core regulatory correction required is the immediate and unambiguous reclassification of all trawl gear that contacts the seafloor as bottom trawl gear. This applies irrespective of declared design intent, codend configuration, or operational targeting depth.

There is no scientific or legal basis for maintaining a separate category of “midwater” gear once empirical data confirms regular and repeated bottom interaction. The distinction between pelagic and benthic trawl classes is not merely descriptive; it governs access to spatially protected areas, determines habitat impact modeling, and directly influences fishery impact assessments. Any definitional structure that permits bottom-contacting gear to retain pelagic classification renders spatial closures ineffective and violates the intent of bottom-contact prohibitions established under Essential Fish Habitat protection protocols.

Accordingly, gear classification should be behavior-based, not construction-based. If footrope, doors, bridles, or any component of the trawl system contacts the substrate under typical deployment conditions, that gear must be regulated under the same access controls, reporting requirements, and monitoring protocols as traditional bottom trawls.

This single correction, defining bottom-contacting gear as bottom trawl gear, would resolve enforcement ambiguity, eliminate regulatory loopholes, and restore the functional meaning of EFH closures. It would also align domestic management practice with statutory mandates under the MSA, which requires both bycatch minimization and the protection of essential habitats from adverse effects.

No performance standard, sensor package, or intent-based exemption can substitute for this core classification principle. The classification must reflect ecological function, not marketing designation.

## X. Public Trust

The issue presented is not one of semantics. It is a definitional incongruity with material consequences for habitat protection, bycatch estimation, and regulatory legitimacy. When a gear type is allowed to operate in direct contact with the seafloor yet classified as “midwater,” the term loses its ecological and operational meaning. It becomes regulatory shorthand divorced from behavior.

Similarly, observer systems remain limited in their ability to detect or quantify the losses that occur when damaged bycatch exits through large-panel net designs. Mortality goes unmeasured, and models built on those datasets propagate the error forward into impact projections and mitigation thresholds.

Simultaneously, habitat models that use trawled areas as control zones misrepresent what undisturbed habitat looks like. They normalize degradation. As a result, management targets become anchored to impaired systems, lowering the bar for conservation and eroding the capacity for full ecosystem recovery.

Layered onto these issues is a global concern: carbon disturbance. Bottom-contact trawling is now recognized as a significant source of marine carbon flux. If gear classified as “pelagic” is participating in that disturbance, its emissions must be acknowledged. Failure to do so creates a dual inconsistency, within climate attribution models and within fishery impact reviews.

The accumulation of these failures, technical, definitional, and structural, now intersects with a growing perception among the general public that management institutions are either unable or unwilling to adapt to emerging (ahem, 40 year old...) evidence. That perception does not require advocacy or media pressure to become problematic. It emerges as a natural consequence of inaction.

To maintain the scientific and policy integrity of the NPFMC, and to meet statutory requirements, it is necessary to address the bottom contact of midwater trawl gear in both classification and enforcement. Anything less fails to reflect the best available science.

In summary:

Midwater trawl gear is used on the seafloor. The consequences of this interaction, unobserved bycatch, mischaracterized habitat, and carbon release, warrant formal regulatory reclassification of this gear as bottom-contact.

The NPFMC is presented here with a factual dilemma, not a political one. The mismatch between definition and behavior undermines both conservation intent and institutional function. It can be resolved, and it should be, and according to MSA, it legally must be.

- David Bayes