Pacific Fishery Management Council

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Pete Hassemer, Chair | Merrick J. Burden, Executive Director

Date

Agenda Item D.2
Supplemental Attachment 1
November 2026

Dr. Neil A. Jacobs
Under Secretary of Commerce for Oceans and Atmosphere
and NOAA Administrator
1401 Constitution Avenue NW, Room 5128
Washington, DC 20230

Re: **Deep seabed mining exploration applications; requests for consultation**

Dear Dr. Jacobs,

Thank you for the opportunity to provide comments on three applications submitted to the National Oceanic and Atmospheric Administration (NOAA) for licenses to conduct deep seabed mining (DSM) exploration activities regulated under the Deep Seabed Hard Mineral Resources Act (DSHMRA)[1], in areas of the deep seabed beyond national jurisdiction. We reviewed the consultation requests from the National Ocean Service, the comment letters from the National Marine Fisheries Service, and the non-confidential portions of the applications. Recognizing that impacts associated with exploration activities are likely to be much less than impacts from extraction activities, the Council offers the following comments to 1) identify fisheries and habitats that may be adversely impacted by exploration activities, and 2) highlight issues of concern relative to future extraction activities.

Potential Impacts

The Council concurs with the recommendations provided by the National Marine Fisheries Service (NMFS) to NOAA's National Ocean Service, in letters dated September 18, 2025 (NMFS Pacific Islands Regional Office) and January 26, 2026 (NMFS West Coast Regional Office. Impacts of particular concern to the Council associated with exploration activities include:

- Chemical contaminants from vessels and exploration and mining equipment
- Sediment releases from seabed disturbance
- Direct and indirect impacts on fish and prey from midwater and surface sediment plumes generated during minerals dewatering by surface vessels
- Food web changes from materials and substances in released sediments

[1] The Deep Seabed Hard Minerals Act (DSHMRA) (14 USC § 1415(d)) requires the NOAA Administrator to "consult with any affected regional fishery management council…if the activities undertaken pursuant to such license or permit could adversely affect any fishery within the Fishery Conservation Zone [interpreted to be synonymous with the Exclusive Economic Zone (EEZ)], or any anadromous species or Continental Shelf fishery resource subject to the exclusive management authority of the United States beyond such zone."

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- Impacts to fisheries and fishing communities
- Habitat disturbance from vessel operations, mineral extraction, and port activities
- Impediments to conducting NMFS scientific surveys and safety risks
- Cumulative impacts of deep-sea mining on the environment over time

DSM exploration activities can mobilize heavy metals, toxins, and other pollutants, potentially leading to bioaccumulation in harvested species which could impact food safety. Turbidity plumes can potentially travel significant distances, thereby affecting not only species that migrate through the mining area, but species that are present closer to the continental margin and the U.S. Exclusive Economic Zone (EEZ). In addition, seafood consumers today are very cognizant of heavy metals - including mercury - in seafood products, and a perception that seafood products may contain elevated levels of heavy metals or biotoxins could have profound impacts on the marketability of those species.

The Council is also concerned about the effects of transporting, dewatering, and processing of mined materials on habitat quality, food web dynamics and prey availability, growth, survival, and movement of HMS that migrate through the CCZ and subsequently harvested in Council-managed fisheries during some part of their life cycle.

While the Council does not expect localized benthic habitat impacts from DSM exploration activities in the Clarion-Clipperton Zone (CCZ) to directly affect Council-managed species, the results of studies of DSM impacts on CCZ benthic and water column habitats will be informative if DSM activities move closer to the eastern Pacific continental margin in habitats important to PFMC deepwater species.

Affected Fisheries and Species

The Council notes that in its two letters, NMFS identified specific fisheries that may operate within the application areas.[2] In addition to those fisheries, several HMS species targeted within the U.S. West Coast EEZ are known to migrate through the Clarion-Clipperton Zone (CCZ) and could be adversely impacted by deep-sea mineral mining activities in the CCZ. As such, we identify the following fisheries within the West Coast EEZ could be adversely impacted by activities undertaken pursuant to the licenses or permits being sought:

- Pacific Bluefin tuna
  - Purse Seine;
  - Hook-and-line;
  - Deep Set Buoy Gear; and
  - Recreational fishery
- North Pacific albacore
  - Troll;
  - Hook-and-line; and
  - Recreational fishery

[2] Both the Pacific Islands Regional Office and the West Coast Region identify the following fishery activities as potentially being active in the application area(s): The Hawaii Deepset Longline Fishery and the Eastern Pacific Ocean Tuna Purse Seine Fishery. PIRO also list the High Seas Western and Central Pacific Ocean Tuna Purse Seine Fishery as one that may be active in the application area.

- North Pacific Swordfish
  - Large Mesh Drift Gill Net;
  - Deep Set Buoy Gear;
  - Gear types being considered under Exempted Fishing Permits (EFPs); and
  - Recreational fishery

In addition to the HMS species listed above, impacts from mobilized sediments, dewatering and other wastewater discharge could potentially impact commercially and recreationally important species and fisheries great distances from the target mining area. In other words, impacts to species and habitats both inside and outside the West Coast EEZ should be evaluated for potential adverse impacts for both exploration and extraction activities. Lists of Council-managed species are included in the fishery management plans available on the Council's website.

Monitoring and Communications

The Council also concurs with recommendations in the two NMFS letters on monitoring and coordination. The Council particularly supports the following recommendations because they are crucial to effective monitoring, communications, and stakeholder engagement:

- Collaborate closely with NMFS Science Centers and other NOAA offices to develop and implement robust environmental studies;
- Implement science-based planning and monitoring recommendations;
- Ensure coordination among all cooperating agencies and relevant NOAA offices; and
- Establish a clear schedule and timeline that incorporates all necessary Federal permits and authorizations.

In addition, the Council recommends that the applicants provide more details on the sampling plans and project design. For example, the applications do not appear to include an estimate or rationale for the amount (or number) of benthic samples, nor an estimate of the time and/or distance remote vehicles will be operating on the seafloor. Further, the monitoring plans should include monitoring for heavy metals and toxins mobilized by sampling and exploration activities. Additional information on monitoring is below.

While the applications include some oceanographic and ecosystem monitoring plans, they fall short of the holistic monitoring needed to understand how DSM exploration (as well as future extraction) will affect HMS fish species and fisheries managed by the Council. The Council recommends that in addition to the monitoring proposed in the applications, the following elements be incorporated into any monitoring plan:

- Movement and migratory patterns, and habitat use of all relevant HMS species (including albacore and other tunas, sharks, and swordfish), should be conducted in a way that allows for understanding how these patterns and uses may be altered through plume-discharge-induced changes in turbidity and productivity
- Development of fisheries-independent surveys of target species abundance pre-, during-, and post-DSM activities
- Linking of changes in food web dynamics and shifts in predator-prey interactions to altered movement, growth, survival, and reproduction of Council-managed HMS pre-, during-, and post-DSM activities

- Better characterization of how mesopelagic species (squids, lanternfishes, etc.,) are impacted by changing water column dynamics during DSM operations and how that affects pelagic-mesopelagic energy coupling and foraging behavior of HMS, given the substantial vertical and horizontal movements made by some HMS and their prey. This should include energetics modeling and trophic transfer evaluations

These studies should be evaluated as individual monitoring programs as well as cumulative effects analyses. Results from these studies and surveys should guide development of acceptable standards for turbidity increases, plume water particulate concentrations, forage declines, as well as levels for any as-yet unknown mobilization of contaminants from the seafloor into the water column and potentially into the seafood supply chain.

The Council has concerns about the short duration proposed for post-DSM monitoring. Given the lifespan of some Council-managed species and the lack of understanding of how long DSM water column impacts might last (including potential pollutant mobilization), the Council recommends that monitoring timelines be extended to at least five years past the completion of DSM activity.

Finally, the Council has broader concerns about potentially irreversible harm to deep seabed environments through large-scale mineral mining operations. A precautionary approach dictates a methodical, well-researched implementation plan that adheres to existing environmental protection regulations.

Thank you again for the opportunity to provide comments. We especially appreciate the presentation by Dr. Bryan Cole at our June 2026 meeting, as well as his ongoing communication with Council staff. Please contact Mr. Kerry Griffin (kerry.griffin@pcouncil.org) with any questions.

Sincerely,

{Council Chair signature block}

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Cc: Dr. Bryan Cole
Council Members