HABITAT COMMITTEE REPORT ON CURRENT HABITAT ISSUES

The Habitat Committee (HC) met via webinar June 2-3 and offers the following updates and recommendations for Pacific Fishery Management Council (Council) consideration.

NATIONAL

FERC Natural Gas Permit Reforms- Notice of Proposed Rulemaking

The Federal Energy Regulatory Commission (FERC) has proposed revisions to its blanket certificate regulations governing interstate natural gas pipelines. The proposed rule would expand the types and scale of projects associated with interstate natural gas pipelines without requiring project-specific authorization, and to increase the cost limits for such projects, among other changes. The proposal also includes provisions for the abandonment of facilities and storage wells, protest procedures and notification requirements. In addition, FERC proposes revisions regarding compliance with the Endangered Species Act and protections for sensitive environmental resources, which are characterized as clarifications of existing requirements. The extent to which these revisions could result in substantive changes to environmental review or resource protections is unclear.

Because projects authorized under blanket certificates generally receive less project-specific review than projects requiring individual authorization, the proposed rule could have significant environmental implications that have not yet been identified or fully evaluated. These changes could allow for the development of larger natural gas infrastructure projects under blanket authority. For example, the once-proposed Jordan Cove Liquefied Natural Gas - Pacific Connector Pipeline Project in southern Oregon which raised numerous environmental concerns for estuarine habitat and hundreds of miles of riparian habitat across multiple National Forests.

At the time of writing this report, the HC had only begun evaluating the proposed rule. If the Council determines that comments on the proposed rulemaking are warranted, the HC can assist Council staff or other advisory bodies with a draft comment letter for Council consideration. This process will also be subject to National Environmental Protection Act (NEPA) review. FERC is accepting public comments on the proposed rule through July 27, 2026. FERC's *Federal Register* notice is available at this link.

Ocean Observatories Initiative (OOI) System Dismantling

The U.S. National Science Foundation has begun dismantling the Ocean Observatories Initiative (OOI) Major Facility, a comprehensive ocean observing network consisting of approximately 900 instruments and sensors deployed off Oregon, Washington, North Carolina, the Subarctic Pacific, and the Irminger Sea between Greenland and Iceland. Developed and installed over several decades at a cost of $368 million, OOI has been providing continuous, real-time measurements of physical, chemical, and biological ocean conditions using state-of-the-art technology for 25-30 years.

Although each regional array was tailored to its unique oceanographic setting, all share a common mission: to collect and transmit critical ocean data in near real time that support scientific research, resource management, and weather and climate forecasting.

The loss of this observing system represents a significant setback for ocean science and for ocean users who rely on timely information about changing ocean conditions. This could greatly hamper the development of Dynamic Ocean Management tools for the Council's Special Project 3 which is intended to mitigate bycatch and increase effectiveness of fishing for target stocks, as well as affect the annual integrated ecosystem assessment. The removal of OOI moorings and underwater gliders from the California Current Ecosystem (CCE) is particularly concerning, especially with forecasts predicting a strong El Niño developing off the coasts of Oregon and Washington later this year. An El Niño event in the CCE can lead to increased ocean surface temperatures, reduced supply of cold, nutrient-rich water, changes in precipitation patterns, rising sea levels, and heightened coastal flooding. Reduced nutrient-rich upwelling lowers primary and secondary productivity, ultimately affecting commercially important fisheries.

At a time when major oceanographic changes are expected, dismantling one of the nation's most important ocean observing systems leaves us less able to detect, understand, and respond to these developments. Now is precisely the time when sustained, real-time observations of the ocean are most needed.

Deep-Sea Mineral Mining

The Habitat Committee heard a presentation on deep-sea mineral mining (DSM) impacts from Dr. Astrid Leitner, Oregon State University Assistant Professor in Oceanography, who has testified on this topic before the U.S. House of Representatives Committee on Science, Space, and Technology's Environment Subcommittee. Dr. Leitner provided a detailed summary of the state of current technology and U.S. policy on DSM, including changes associated with President Trump's Executive Order 14285, "Unleashing America's Offshore Critical Minerals and Resources," signed in April 2025.

Mining for nickel, cobalt, copper, and manganese from the ocean floor, typically at depths of 3,000 to 6,500 meters, is likely to expand as demand for critical minerals is projected to double by 2040. Current areas of interest for the U.S. are the Clarion-Clipperton Zone (CCZ) and the Pacific Island territories (e.g., American Samoa and the Commonwealth of the Northern Mariana Islands, CNMI). U.S. DSM regulations are rapidly evolving, and the U.S. subsidiary (TMC USA) of the Canadian deep-sea minerals exploration and mining company TMC (The Metals Company) has applied for exploration and recovery of minerals in the CCZ. In May 2026, the National Oceanic and Atmospheric Administration (NOAA) started the environmental review process for DSM in the CCZ.

The deep sea plays an important role in regulating global ocean cycles and hosts a highly diverse ecosystem. DSM has the potential to impact both the benthic and water-column environments. Benthic impacts include direct mortality, smothering and burial mortality, and direct removal of habitat. Potential water column impacts include sediment plumes from mineral transport to the surface and dewatering after the nodules and associated sediment are brought aboard surface support ships for processing. Current evidence shows persistent benthic biological impacts over

the past four decades at experimental mining sites in the eastern Pacific, and a recent study in the CCZ showed substantial decreases in macroinvertebrate abundance and diversity compared with control sites over a two-year period. Water column sediment plumes have the potential to impact Council-managed highly migratory species and their prey.

Research Strategy for Seabed Critical Mining Resources

The National Academy of Sciences, Engineering, and Medicine (NASEM) has formed a working group to develop A Research Strategy for Seabed Critical Mining Resources. Per their website, "*An ad hoc committee of the National Academies of Sciences, Engineering, and Medicine will undertake a study to recommend a research strategy on seabed mining for critical minerals. This project will include an overview of the technological feasibility and economic potential of extracting seabed minerals; identification of information needed to establish baselines in habitats found at proposed mining sites and surrounding areas; and the potential social, cultural, and economic impacts of seabed mining, including cumulative effects and possible methods to mitigate negative impacts."* The committee held its first meeting in February 2026 and has a Workshop planned for June 29-July 1, 2026. It is not yet clear how Council might interface with this initiative, but the HC Chair plans to meet with the Chair of the NASEM *ad hoc* committee and the HC will update the Council as information becomes available. The National Academies of Sciences, Engineering, and Medicine operates under a congressional charter to advise the nation on issues related to science and technology.

WASHINGTON

Olympic Coast National Marine Sanctuary Management Plan Review

The HC received an update on the Olympic Coast National Marine Sanctuary (OCNMS) management plan review process from Hélène Scalliet, OCNMS Deputy Superintendent. NOAA published the OCNMS Draft Management Plan and Environmental Assessment on May 12, 2026. NOAA is soliciting public input on these documents through July 13, 2026, to help inform the future management of the sanctuary. There are no regulatory changes proposed; therefore, the HC has no recommendations for Council action at this time. More details will be provided in the annual ONMS Coordination Report for PFMC at the September 2026 PFMC meeting.

CALIFORNIA

California Marine Protected Areas - Petitions

As noted in the April HC Report, the California Fish and Game Commission (CFGC) received several petitions from the public proposing changes to California's marine protected area network.

In response, the Commission has held several public meetings, with the most recent meetings held in April & May 2026 to discuss the twenty remaining 2023 MPA petitions. This included petitioner presentations, an overview of California Department of Fish and Wildlife's (CDFW) evaluations and recommendations on the ten non-Tribally led petitions, and opportunity for public comment.

CDFW also provided an update on the status of the five Tribally-led MPA petitions at the CFGC Tribal Committee meeting on April 14, 2026. Four of the five tribally-led petitions were amended in April 2026 and subsequently referred to CDFW for evaluation. CDFW anticipates releasing its

evaluations and recommendations for all five Tribally-led petitions before the August 2026 CFGC Tribal Committee and CFGC meetings.

The CFGC is expected to discuss and may take action on the 2023 MPA petitions at its October 2026 meeting. No regulatory changes have been adopted at this time. The status index for all MPA petitions will continue to be updated following each CFGC meeting. CDFW will continue to post updates and evaluations on the MPA StoryMap. The next CFGC public meeting is scheduled for June 17-18, 2026. Information on upcoming meetings will be posted on the CFGC website as they become available.

Bureau of Reclamation - California Water Operations

The Habitat Committee met with Spencer Walden, Bay-Delta Area Manager for the Bureau of Reclamation (BOR) and had a general discussion about current Central Valley Project (CVP) operations, habitat restoration efforts, and ongoing consultations affecting fisheries resources. Mr. Walden touched on BOR's role in hydrology, fisheries, and environmental compliance throughout the Sacramento and San Joaquin River basins, including implementation of the 2025 CVP Record of Decision, ongoing consultation for the Trinity River Division, temperature management planning, habitat restoration initiatives, and operational changes related to Delta exports and the X2 salinity management region.

During the discussion Mr. Walden spoke to BOR's use of structured decision-making processes for Sacramento River winter-run Chinook salmon, habitat restoration planning through the Science Integration Team, and ongoing evaluation of projects such as Sites Reservoir. Discussion also focused on implementation of Executive Order 14181 and Action 5 operational changes, including a shift toward more real-time management of Delta exports based on flow conditions, fish distribution, and entertainment risk.

The HC appreciated Mr. Walden's overview and discussion with the HC. However, the HC seeks more details on water operations related to salmon requirements and survival. The HC recommends that the Council consider follow-up discussions with BOR Leadership regarding Action 5, Initiative 6 and related operational changes affecting Chinook salmon. Additionally, the Council may wish to ask BOR to explain their plans for water management in California in 2027 and beyond.

The HC also notes that hearings related to Delta Conveyance are currently underway and additional opportunities for public review and comment are expected in the near future. The HC will track this process and notify the Council when comment opportunities arise.

CROSS-FMP

Special Project 1: If/Then Statements

The HC received a presentation from Gilly Lyons (Council staff) on the status of Special Project 1: If/Then statements, as well as an overview of Special Project 3 Dynamic Ocean Management (DOM) Workshop. Council guidance in April related to if/then statements included prioritizing the HMS and Groundfish FMPs, removing the Salmon FMP from consideration, and directing the

HC to explore whether there are situations in which if/then scenarios could be applied to inform in-season management actions in response to changing habitat conditions.

One potential scenario the HC explored was whether the habitat compression index, which indicates the incursion of offshore warming over shelf waters that can affect species distributions, could be used to inform management actions. However, after some deliberation, the HC determined there was insufficient information (e.g., spatial resolution, meaningful actions) to develop any appropriate if/then statements at this time.

Related to both Special Projects 1 and 3, the HC discussed the possibility of using data on dissolved oxygen and temperature to inform management measures related to incident mortality of bycatch species. Specifically, research conducted by the Alaska Fisheries Science Center (Gale, et al. 2013, Olla et al. 1998) linked increased mortality of incidentally caught bottom species, such as sablefish, with increased temperature as those species are brought to the surface. If this information could inform management actions that would reduce this mortality in fisheries with incidental bycatch mortality thresholds, it could increase fishing opportunity. However, this is just a preliminary idea at this point. If the Council believes it is worth pursuing, the HC will plan to explore it and the potential relevance of the DOM Workshop.

Summary of Recommendations for Council Consideration

- **FERC Natural Gas Permit Reforms - Notice of Proposed Rulemaking:** Provide direction to Council staff and/or other ABs on whether to comment on this Rulemaking.
- **BOR California Water Management:** The Council should consider a follow-up discussion with BOR leadership regarding Action 5, Initiative 6 and related operational changes affecting Chinook salmon in 2026 and in future years.
- **Special Projects 1 and 3:** Provide direction to the HC on Council-preferred next steps regarding the DOM workshop.

References

Olla, B. L., M. W. Davis, and C. B. Schreck. "Temperature magnified postcapture mortality in adult sablefish after simulated trawling." *Journal of Fish Biology* 53.4 (1998): 743-751.

Gale, Marika Kirstin, Scott G. Hinch, and Michael R. Donaldson. "The role of temperature in the capture and release of fish." *Fish and fisheries* 14.1 (2013): 1-33.

PFMC
06/08/26

ADDENDUM: ADDITIONAL INFORMATION ON DEEP-SEA MINING

In October 2025, Dr. Astrid Leitner, OSU Assistant Professor in Oceanography, gave an evening Science on Tap presentation at the Hatfield Marine Science Center entitled "Journey into the Deep: Deep-sea Mining." Her presentation provided an introduction to deep-sea mining and the related marine policy. Several HC members had the opportunity to watch the recording of this seminar and invited Dr. Leitner to update the HC on this important topic during June. It is worth noting that in March 2026, Dr. Leitner served on a distinguished panel testifying before the U.S. House of Representatives Committee on Science, Space, and Technology's Environment Subcommittee on the science and technology of deep-sea mining .

Dr. Leitner's original recorded presentation at the Hatfield Marine Science Center provided a detailed description of how the growing demand for tech and clean energy has led to the rush for new sources of critical minerals, such as rare earth elements and battery-grade nickel, cobalt, copper, and manganese, from the ocean floor, typically at depths of 3,000 to 6,500 meters. Demand for critical minerals is projected to double by 2040. There are three types of seafloor mineral deposits: crusts (seamounts), polymetallic nodules (abyssal plains), and massive sulfides (hydrothermal vents). All three deposit types occur in the U.S. EEZ. Globally, nodules are the most likely first commercial target. Outside of the territorial limits of individual countries, deep-sea mining is managed under the International Seabed Authority (ISA) as an intergovernmental body consisting of 171 countries and the EU. Because the United States is not a party to the United Nations Convention on the Law of the Sea, it is not subject to the International Seabed Authority (ISA). The U.S. relies on its own recently updated legal framework, the Deep Seabed Hard Mineral Resources Act (DSHMRA), to regulate DSM and issue exploration licenses and commercial recovery permits. Prime areas of interest for the U.S. are the Clarion-Clipperton Zone (CCZ) and the Pacific Island territories (e.g., American Samoa and the Commonwealth of the Northern Mariana Islands, CNMI).

When considering the environmental effects of DSM it is important to acknowledge the role of the deep-sea in regulating global ocean cycles, including temperature and nutrients, and hosting a highly diverse ecosystem, including megafaunal fishes and invertebrates, as well as smaller invertebrate and microbial size classes, in which a large fraction of the organisms are unnamed species. DSM has the potential to impact both the benthic and water-column environments. Benthic impacts include direct mortality and mortality due to smothering and burial. There is also direct and permanent removal of habitat, where the habitat itself is the commercial resource and along with other portions of the seafloor and structure-forming invertebrates. Potential water-column impacts arise from plumes at the seafloor mining site and in the case of nodule mining from dewatering after the nodules and associated sediment are brought to the surface support ship for processing. Dr. Leitner reviewed historical and emerging information on both long and short-term impacts of deep-sea mining. For example, a study of a historical test nodule mining site in the eastern Pacific has shown persistent biological impacts over the past four decades, with some recovery. A recent short-term study from a mining trial in the CZZ (2022) showed decreases in macroinvertebrate abundance and diversity compared with control sites over a two-year period.

As an Oceanographer and deep-sea scientist conducting baseline research in the CCZ and other deep-sea areas, Dr. Leitner focused her presentations on the CCZ, a prime area of interest to the U.S. -- a ~2 million-square-mile area (almost 80% of the size of the contiguous 48 U.S. states)

located between Hawaii and Mexico in the central-east Pacific, which holds a significant number of polymetallic nodules. The CCZ is one of the better studied DSM areas; however there are still major knowledge gaps. The larger research community has suggested a 10-year time frame for each region to allow for the research necessary to make informed decisions on mining.

Dr. Leitner provided a detailed summary of the state of U.S. policy on DSM including changes associated with President Trump's Executive Order 14285, "Unleashing America's Offshore Critical Minerals and Resources," signed on April 2025. The order aims to accelerate exploration and mining for commercial minerals from the ocean floor. Dr. Leitner provided a timelines for the rapidly evolving U.S. DSM regulations for 2025 and 2026 as well as the emergence of the Canadian deep-sea minerals exploration and mining company TMC (The Metals Company) whose US subsidiary TMC USA has applied for exploration and recovery of minerals in the CCZ. In May 2026, NOAA started the environmental review process for DSM in the CCZ.