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April 23, 2020

Betty T. Yee
Chair, California State Lands Commission
100 Howe Avenue, Suite 100 South
Sacramento CA 95825

RE: 2021-2025 California State Lands Commission Strategic Plan (Agenda Item 73)

Dear Chair Yee,

I am writing today to request that the California State Lands Commission (Commission) consider including an update to Commission regulations governing seabed mining on California Submerged Lands as an objective in the Commission's 2021-2025 Strategic Plan. Specifically, Pew recommends consideration of a prohibition on seabed mining for hard minerals (including but not limited to phosphorite, metals, and metal-enriched sands) on or under California Submerged Lands, and requests that the Strategic Plan update prioritize this proactive reform.

The Pew Charitable Trusts is a 501(c)(3) public charity that applies a rigorous, analytical approach to improve public policy, inform the public, and invigorate civic life. Pew's Conserving Marine Life in the U.S. program has been involved in fisheries management on the West Coast for many years. We also work to protect valuable coastal waters and habitats by identifying and advancing science-based conservation measures that will ensure all people can enjoy and benefit from nearshore resources now and into the future. We strive to help develop and promote policies that recognize the interconnected nature of marine life through an ecosystem-based approach to resource management. We appreciate the opportunity to provide some perspectives on the threat that seabed mining could pose for the marine environment in California state waters and the human components of the broader coastal ecosystem, and to describe Pew's proposed action to eliminate this risk.

The Commission has taken a thoughtful approach to strategic planning, embodied in the current (2016-2020) plan's commitment to consistency with "evolving" Public Trust principles and values.¹ Inclusion of that key word was very forward thinking. It is also particularly relevant when considering the potential impacts of activities like mining that cause seafloor disturbance, because for much of the seafloor, there is an emerging scientific consensus that disturbance impacts cannot be considered temporary on human timescales.² Many sensitive seafloor habitats are characterized by slow-growing, structure-forming invertebrates like cold-water corals and sponges with very long lifespans: corals over 4,000 years of age and marine sponges at least 11,000 years old have been found in recent years.³ Recovery of this kind of biogenic habitat from mining impacts would take centuries, if recovery ever happened at all.

¹ See California State Lands Commission 2016-2020 Strategic Plan, at p.7

² See Roark, E. B. et. al., *Extreme longevity in proteinaceous deep-sea corals*. Proceedings of the National Academy of Sciences of the United States of America, 106:5204–5208, 2009

³ Ibid. See also Jochum, K. P. et. al., *Whole-Ocean Changes in Silica and Ge/Si Ratios During the Last Deglacial Deduced From Long-Lived Giant Glass Sponges*. Geophysical Research Letters, 44: 22, 2017

The ocean, especially the nearshore ocean, is facing a compounding array of stressors: industrialization, climate change, ocean acidification and other forces will increasingly challenge our ability to understand and co-exist with a healthy ocean. In this context, it is critical to identify and address emerging and future threats, including activities that might harm sensitive seafloor habitats that provide critical ecosystem functions and services. Rooted in the increased demands of a growing population, dwindling terrestrial sources, or technological advances that either require novel minerals or facilitate their profitable extraction, a growing body of evidence points to accelerating interest in the exploitation of ocean minerals, including those found in the nearshore areas along continental margins.^{4,5,6}

At the same time, scientists are warning that the ecological impacts of seabed mining could be profound. These impacts include smothering or toxicity from sediment plumes, increased noise, loss of biodiversity, light pollution, and physical disturbance of the seabed, up to and including the removal of plants, animals, and substrate.^{7,8,9} Negative social and economic impacts of marine mining could also be severe for stakeholders and communities dependent on existing ocean uses like fishing, tourism, and cultural resources.¹⁰

For these reasons, and because of the many knowledge gaps surrounding the ocean ecosystem which make it very difficult to accurately assess the true environmental impacts seabed mining would entail, this activity should be addressed in the near-term with strong, precautionary measures to safeguard marine habitat. While there are likely no hard mineral reserves off California that are economically viable at this time, nor plans for large-scale industrial exploration or extraction, there are potentially valuable hard mineral resources in and near California's state waters including phosphorite and precious metals. This absence of prospective development presents an opportunity for resource managers to address an emerging issue without the immediate pressure imposed by active interest or the need to consider existing investments. We have enjoyed several similar collaborations with California fishery managers in recent years, resulting in the protection of important fish species and sensitive seafloor habitats not previously impacted by fishing gear.

⁴ See Levin et. al, "Defining "serious harm" to the marine environment in the context of deep-sea mining", Marine Policy 74 (2016) 245-259.

⁵ See also Peterson et. al. "News from the seabed- Geological characteristics and resource potential of deep-sea mineral resources", Marine Policy 70 (2016)175-187

⁶ See also Miller et. al., "An Overview of Seabed Mining Including the Current State of Development, Environmental Impact, and Knowledge Gaps", Frontiers in Marine Science Volume 4 Article 418, January 2013.

⁷ Ibid.

⁸ See also Vare et. al. "Scientific Considerations for the Assessment and Management of Mine Tailings Disposal in the Deep Sea", Frontiers in Marine Science Volume 5 Article 17, February 2018

⁹ See also Levin and Sibuet, "Understanding Continental Margin Biodiversity: A New Imperative", Annual Review of Marine Science 4:79-112, 2012

¹⁰ See Thompson et. al., "Seabed Mining and Approaches to Governance of the Deep Seabed", Frontiers in Marine Science Volume 5 Article 480, December 2018

One of the first core tenets of an ecosystem-based approach to resource management is to avoid sensitive areas. Given its importance to marine mammals, economically important fisheries, tourism, and other important, water-dependent societal uses the three-mile wide nearshore area regulated by the state is a highly sensitive area that is likely incompatible with a high impact activity like seafloor mining. For this reason, the current regulatory regime, which would allow lease applications and consider them on a case-by-case basis, merits reconsideration. Because the leasing of California's sovereign lands and their public trust resources for seabed mining does not protect or promote public trust values, is not a water-dependent use, and excludes rather than facilitates public access and use, a preclusion on exploration for or development of hard mineral mining on submerged lands could be justified and would be a more proactive and durable solution to this emerging threat.

The development of the 2021-2025 Commission Strategic Plan represents an opportunity for the Commission to conduct preliminary analyses of its seabed mining policies and regulations, and to consider them in the context of a rapidly changing ocean and an emerging global industry. Perhaps seabed mining regulatory reform could be one component of a broader goal or strategy focused on identifying and proactively addressing emerging or future threats. Therefore, we again ask you to consider the development of precautionary rules for seabed mining, including a prohibition in state waters, as an objective of your new strategic plan. We appreciate the opportunity to engage with the Commission and look forward to continued collaboration as you develop the new Strategic Plan.

Sincerely,

A handwritten signature in cursive script, appearing to read "Tom Rudolph".

Tom Rudolph
Officer, Conserving Marine Life in the U.S. and Canada, Pacific
The Pew Charitable Trusts