



April 20, 2022

Betty T. Yee, Chair
 Eleni Kounalakis, Member
 Keely Bosler, Member
 California State Lands Commission
 100 Howe Avenue, Suite 100 South
 Sacramento CA 95825

RE: Item 63, Support for Assembly Bill 1832 California Seabed Mining Prevention Act

Dear Chair Yee, Lt Gov Kounalakis, and Director Bosler,

We respectfully request that the California State Lands Commission vote in favor of supporting AB 1832, the California Seabed Mining Prevention Act, authored by Assemblywoman Luz Rivas, and recommended by staff. We have appreciated the engagement with you and the State Lands staff over the past several years.

Every new research dive to the seafloor reveals amazing wildlife and new discoveries about the role the deep sea plays in the health of our ocean and our lives. Seabed mining directly destroys whole plant and animal communities on the seafloor, leaving behind habitat that may never recover. Mining also creates enormous toxic sediment plumes; as well as noise, light, and thermal pollution that disrupt marine habitats.

California cannot afford to risk losing our social, cultural, and economic connections to the sea. The seafloor and ocean underpin California's multi-billion dollar fishing and tourism industries. As the extractive industry grows, seabed mining activities pose a large-scale disruption to these important ecosystems. Seabed mining would harm commercially and recreationally important species like salmon, groundfish, halibut and Dungeness crab as well as the overall health of our ocean.

The State of Washington passed a ban on seabed mining in state waters last year in 2021, following Oregon's seabed mining ban in 1991. The undersigned organizations urge California to do the same and request the Commission to support AB 1832 to protect our California coastal waters.

Thank you.

Sincerely,

Leslie Tamminen
Director
7th Generation Advisors

Juan Altamirano
Associate Director of Policy
Audubon California

Dennis Simmons
President
Beach Ecology Coalition

Douglas McCauley
Director
Benioff Ocean Initiative

Kim Kolpin
Executive Director
The Bolsa Chica Land Trust

Richard Block
President
California Association of Zoos and
Aquariums

Susan Jordan
Executive Director
California Coastal Protection Network

Daniel Gluesenkamp
Executive Director
California Institute for Biodiversity

Susan Stephenson
Executive Director
California Interfaith Power & Light

Robert Mazurek
Executive Director
California Marine Sanctuary Foundation

Nick Lapis
Director of Advocacy
Californians Against Waste

Ria Coen Gilbert
Board Chair
CALPIRG Students

Andria Ventura
Legislative and Policy Director
Clean Water Action

Pamela Flick
California Program Director
Defenders of Wildlife

Jared Naimark
California Mining Organizer
Earthworks

Laura Deehan
State Director
Environment California

Ashley Eagle-Gibbs
Legal and Policy Director
Environmental Action Committee
of West Marin

Rachel Kondor
Staff Attorney
Environmental Defense Center

Bill Allayaud
Calif. Director of Government Affairs
Environmental Working Group

Jim Lindburg
Legislative Consultant
Friends Committee on Legislation of
California

Emily Parker
Coastal and Marine Scientist
Heal the Bay

Jackie Nuñez
Founder
The Last Plastic Straw

Lance Morgan
President
Marine Conservation Institute

Jeff Boehm
Chief External Relations Officer
The Marine Mammal Center

Jay Ziegler
Director of External Affairs and Policy,
California Chapter
The Nature Conservancy

Neal Desai
Senior Program Director, Pacific Region
National Parks Conservation Association

Sandy Aylesworth
Senior Advocate
NRDC

Greg Helms
Program Manager
Ocean Conservancy

Geoff Shester
California Campaign Director and
Senior Scientist
Oceana

Courtney Vail
Campaign Director
Oceanic Preservation Society

Dianna Cohen
CEO and Co-founder
Plastic Pollution Coalition

Nina Jensen
CEO
REV Ocean

Robert Gould, MD
President
San Francisco Bay Physicians for Social
Responsibility

Richard Block
President & CEO
Santa Barbara Zoo

Erica Donnelly-Greenan
Executive Director
Save Our Shores

Erin Woolley
Policy Advocate
Sierra Club California

Brittany DeGirolamo
Social Media & Partnerships Director
Sustainable Ocean Alliance

Elizabeth Dougherty
Director
Wholly H2O



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RE: Item 63, Support for Assembly Bill 1832 California Seabed Mining Prevention Act

Dear Chair Yee, Lt Gov Kounalakis, and Director Bosler,

We respectfully request that the California State Lands Commission adopt a support position for AB 1832, the California Seabed Mining Prevention Act, relevant to Item 63 at your April 26th meeting.

The ocean underpins California's multi-billion dollar fishing and tourism industries. As the seabed mining industry grows, its activities pose a large-scale disruption to these important ecosystems and the businesses that depend on them. Seabed mining endangers commercially and recreationally important marine species like salmon, groundfish, halibut and Dungeness crab as well as the overall health of our ocean. It also threatens our coastal tourism and recreation industries, which are estimated at \$27 billion annually.

Seabed mining poses unacceptable risks to marine health and fisheries that point to the need for prevention and precaution. We must work toward supporting a healthy ocean so that it can continue to provide social, economic, environmental and cultural benefits to Californians now and in future generations. Seabed mining would damage the seafloor — perhaps forever — and create toxin-laced sediment plumes that threaten the highly productive mid-layer of the ocean as well as estuaries (which serve as fishery nurseries.)

The State of Washington passed a ban on seabed mining in state waters in 2021, following Oregon's seabed mining ban in 1991. The undersigned organizations urge California to do the same given the importance of a healthy marine environment to our fisheries, coastal communities, and state economy.

Please support AB 1832 to protect our California coastal waters, and call on the undersigned to assist.

Thank you.

Sincerely,

Andrea Linton
Manager, Natural Products Division
Crown Prince, Inc.

Chris Dold
Chief Zoological Officer
SeaWorld Parks & Entertainment

Gisele Anderson
Co-President
Dana Point Whale Watching Company

Carl Kish
CEO
STOKE

Andy Wunder
Western States Advocate
E2 (Environmental Entrepreneurs)

Vipe Desai
Executive Director
Surf Industry Members Association

Ricardo Heredia
Executive Chef
Grind and Prosper Hospitality

Rich Zeilenga
Chief Operating Officer
Tackle Warehouse

Steve Phelps
Chef/Owner
Indigenous

Brandon Wesselink
Business Owner
Thresher Boats

Colleen Talty
Manager of Operations / Marine Biologist
Monterey Bay Whale Watch

Marcy Melville
Owner
Wildflower Events

Captain Michael Tapocik
Captain
Offishial Business

Alison Huyett
Environmental Campaigns and Advocacy
Patagonia

McGurrin Leibert
General Manager
Pier 23 Cafe



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100 Howe Avenue, Suite 100 South
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RE: Item 63, Support for Assembly Bill 1832 California Seabed Mining Prevention Act

Dear Chair Yee, Lt Gov Kounalakis, and Director Bosler,

Monterey Bay Aquarium and Surfrider Foundation are pleased to co-sponsor Assembly Bill 1832 to prevent seabed mining in California marine waters and we respectfully request that the California State Lands Commission vote in favor of supporting AB 1832, the California Seabed Mining Prevention Act, authored by Assemblywoman Luz Rivas, and recommended in the staff report. We have appreciated the engagement with you and the State Lands staff over the past several years.

Monterey Bay Aquarium's mission is to inspire conservation of the ocean and we take action to protect California's ocean wildlife and ecosystems against significant threats. The Surfrider Foundation (Surfrider) is dedicated to the protection and enjoyment of our ocean and we activate our grassroots network in meaningful efforts to protect California's marine environment.

Monterey Bay Aquarium and Surfrider support this bill in recognition of the broad threats posed by seabed mining and the need to take a proactive approach to safeguarding California's seafloor and deep sea. With 1,100 miles of coastline and 5,500 square miles of waters extending three nautical miles offshore, our state waters are home to some of the world's most biodiverse ecosystems.

California's Valuable Ocean

California boasts the largest ocean-based economy in the United States.¹ Valued at \$45 billion annually, the ocean employs over half a million people and supports a vast diversity of marine life as well as fishing communities that depend on fish, shellfish and seaweeds for their

¹ Sievanen, Leila, Phillips, Jennifer, Charlie Colgan, Gary Griggs, Juliette Finzi Hart, Eric Hartge, Tessa Hill, Raphael Kudela, Nathan Mantua, Karina Nielsen, Liz Whiteman. (2018). *California's Coast and Ocean Summary Report*. [Publication number: SUMCCC4A-2018-011](#).

livelihoods.² Our productive fisheries support 19,750 recreational fishing jobs (as of 2017), with the commercial fishing and seafood industry generating 155,258 jobs and \$28.8 billion in sales in 2017.³

Coastal tourism and recreation industries in California are valued at approximately \$27 billion annually.⁴ California's marine wildlife – including whales, dolphins, and the threatened southern sea otter – attract millions of visitors a year to our coastline. California's coastline counties are home to 68 percent of the state, and millions of people visit California coastal state parks every year.⁵

Only 20% of the seafloor has been mapped at high resolution and we have only just begun to understand the resources of this environment.⁶ Approximately 2,000 new species of ocean life are discovered every year,⁷ which does not include the myriad microorganisms that enable ocean ecosystems to store carbon from the atmosphere and support global fisheries. In California, scientists and engineers at the Monterey Bay Aquarium Research Institute have found incredible forests of ancient cold-water corals, nurseries where deep-sea octopuses breed and care for their young, and rich, rocky habitats that support populations of commercially and environmentally important fisheries.

Seabed Mining Presents a Large Scale Threat to the Ocean

Seabed mining can destroy whole communities of plants and animals on the seafloor, leaving behind habitat that may never recover due in part to the slow growth times that characterize life in the deep sea.⁸ Some types of mining occur on seamounts and hydrothermal vents, which are now well known to host an abundance of life including chemosynthetic life (life that does not rely on sunlight for energy).⁹ Scientists also expect that even seemingly sparse stretches of seafloor can be home to a high level of biodiversity, often in the form of microscopic life that serves key roles in the food web.¹⁰ With more than 80 percent of the ocean yet to be explored,¹¹ the deep sea is a frontier for discovery. Mounting evidence even suggests that mineable

² Ibid., 12.

³ National Marine Fisheries Service. (2017). *Fisheries Economics of the United States*. U.S. Dept. of Commerce. NOAA Technical Memorandum. [NMFS-F/SPO-219](#).

⁴ National Ocean Economics Program. (2020). Ocean Economy Data. Retrieved February 18, 2022 from <https://www.oceaneconomics.org/Market/ocean/oceanEcon.asp>

⁵ National Ocean Economics Program. (2020). Ocean Economy Data. Retrieved February 18, 2022 from <https://www.oceaneconomics.org/Market/ocean/oceanEcon.asp>

⁶ Amos, J. (2021). *Mapping quest edges past 20% of global ocean floor*. BBC News. Retrieved February 18, 2022, from <https://www.bbc.com/news/science-environment-57530394>.

⁷ UNESCO. (2012). *Ocean life: The marine age of Discovery*. UNESCO. Retrieved February 18, 2022, from [Ocean life: the marine Age of Discovery](#).

⁸ Chin, A and Hari, K. (2020). *Predicting the impacts of mining of deep sea polymetallic nodules in the Pacific Ocean: A review of Scientific literature*. Deep Sea Mining Campaign and MiningWatch Canada. https://miningwatch.ca/sites/default/files/nodule_mining_in_the_pacific_ocean.pdf.

⁹ Ibid., 12

¹⁰ Paulus, Eva. (2021). Shedding Light on Deep-Sea Biodiversity—A Highly Vulnerable Habitat in the Face of Anthropogenic Change. *Front. Mar. Sci.* 8:667048. doi: [10.3389/fmars.2021.667048](https://doi.org/10.3389/fmars.2021.667048)

¹¹ NOAA. (2021). *How much of the ocean have we explored?*. National Ocean Service website. Retrieved February 18, 2022 from <https://oceanservice.noaa.gov/facts/exploration.html>

minerals themselves provide a foundation for species such as sponges to establish where other species lay their eggs.¹² Seabed mining can destroy large swaths of the many kinds of habitats on the seafloor that foster life.

The seafloor is not the only area of the ocean vulnerable to seabed mining operations. Seabed mining operations also offload unwanted sediment and metals that have been scraped off the seafloor in large toxic sediment plumes that are likely to have extensive ecological effects in deep midwaters where the majority of the ocean's fish biomass is contained.¹³ One study suggested that these toxic plumes could be up to 180 feet long and disperse fine grain sediments for tens of thousands of kilometers before resettling.¹⁴ The full impact of these plumes is unknown, however suspended materials can interfere with migratory, feeding and reproduction patterns, as well as overall health of species in the midwater zone, which is the largest biosphere in the ocean. Toxic metals have the potential to bioaccumulate in longer-lived and commercially fished species and have negative repercussions on their reproduction and health.¹⁵ Mining operations also result in noise, light, and thermal pollution that disrupt marine communities.^{16/17/18}

Mining may also increase California's carbon footprint. Scientists at the Scripps Institution of Oceanography contributed to a policy brief issued by the Deep-Ocean Stewardship Initiative in 2019 that detailed the potential climate impact that could be caused by seabed mining. By disturbing deep sea microbes and animals, the brief explains, seafloor impacts could combine with temperature and oxygen impacts caused by sediment plumes. This could alter midwater

¹²Paulus, Eva. (2021). Shedding Light on Deep-Sea Biodiversity—A Highly Vulnerable Habitat in the Face of Anthropogenic Change. *Front. Mar. Sci.* 8:667048. doi: [10.3389/fmars.2021.667048](https://doi.org/10.3389/fmars.2021.667048)

¹³ Drazen, J., Smith, C., Gjerde, K., Haddock, S., Carter, G., Choy, A., Clark, M., Dutrieux, P., Goetze, E., Hauton, C., Hatta, M., Koslow, A., Leitner, A., Pacini, A., Perelman, J., Peacock, T., Sutton, T., Watling, L., & Yamamoto, H. (2022). Midwater ecosystems must be considered when evaluating environmental risks of deep-sea mining. *Proceedings of the National Academy of Sciences of the United States of America*. DOI: [10.1073/pnas.2011914117](https://doi.org/10.1073/pnas.2011914117)

¹⁴ Drazen, J., Smith, C., Gjerde, K., Haddock, S., Carter, G., Choy, A., Clark, M., Dutrieux, P., Goetze, E., Hauton, C., Hatta, M., Koslow, A., Leitner, A., Pacini, A., Perelman, J., Peacock, T., Sutton, T., Watling, L., & Yamamoto, H. (2022). Midwater ecosystems must be considered when evaluating environmental risks of deep-sea mining. *Proceedings of the National Academy of Sciences of the United States of America*. DOI: [10.1073/pnas.2011914117](https://doi.org/10.1073/pnas.2011914117)

¹⁵ Chin, A and Hari, K. (2020). *Predicting the impacts of mining of deep sea polymetallic nodules in the Pacific Ocean: A review of Scientific literature*. Deep Sea Mining Campaign and MiningWatch Canada. https://miningwatch.ca/sites/default/files/nodule_mining_in_the_pacific_ocean.pdf.

¹⁶ 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.

¹⁷ 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

¹⁸Levin and Sibuet, "Understanding Continental Margin Biodiversity: A New Imperative", *Annual Review of Marine Science* 4:79-112, 2012

carbon transport and sediment sinks which essentially remove carbon from the biosphere.¹⁹ It is clear that research and study into the potential impacts of seabed mining is warranted.

We Must Support a Precautionary Approach for Protecting Against Mining

There will never be a better time to prevent seabed mining. As you know, the California State Lands Commission is currently able to authorize leases for mining operations on a case-by-case basis, and there are currently no prospectors in California. However, this extractive industry is growing worldwide and California cannot be too cautious. Industry is increasingly focused on areas of the deep sea as new sources of certain metals and minerals. Companies state that this is based on an increased demand for these metals and minerals for use in batteries for cell phones, electric vehicles, energy storage and other applications.

Much of the industry focus right now is on the Clarion Clipperton Zone in the Pacific and the nodules found there that contain cobalt, nickel and other metals. There is currently more investment than ever before in technologies to extract these resources. There are potentially valuable hard mineral resources in and near California's state waters including phosphorite and precious metals.^{20/21} The absence of prospective development presents an opportunity for the State of California to address an emerging issue without the immediate pressure imposed by active interest or the need to consider existing investments.

Seabed mining has potentially devastating impacts on the ocean environment and the vital services the ocean contributes to all life on Earth. For this reason, and because of the value of California's marine wildlife and ecosystems, we support a strong, precautionary approach to safeguarding California's marine waters.

There is precedent for this type of protection: mining state waters for hard minerals has been prohibited in Oregon since 1991 and Washington passed similar legislation just last year with overwhelming bipartisan support. What's more, Washington state agencies estimated no state fiscal impact associated with a seabed mining ban. Now is the time to protect our California waters and the seabed.²²

¹⁹ Levin, L., Wei, C., Dunn, D., Amon, D., Ashford, O., Cheung, W., Colaco, A., Escobar, E., Guilloux, B., Harden-Davies, H., Drazen, J., Gjerde, K., Ismail, K., Jones, D., Johnson, D., Le, J., Lejzerowicz, F., Mitarai, S., Morato, T., & Yasuhara, M. (2019). *Climate Change Considerations are Fundamental to Sustainable Management of Deep-Seabed Mining*. [Deep Ocean Stewardship Initiative](#).

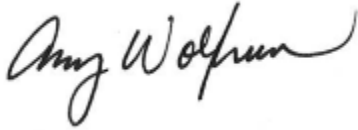
²⁰ Mero, John, California Division of Mines and Geology Mineral Information Service, [Sea Floor Phosphorite](#), 1961, at pp. 7-8. See also U.S. Congress, Office of Technology Assessment, [Marine Minerals: Exploring Our New Ocean Frontier](#), OTA-O-342 (Washington, DC: U.S. Government Printing Office, July 1987), at p.61

²¹ U.S. Congress, Office of Technology Assessment, [Marine Minerals: Exploring Our New Ocean Frontier](#), OTA-O-342 (Washington, DC: U.S. Government Printing Office, July 1987), at pp.58, 60

²² Washington State Office of Financial Management. (2021). *Multiple Agency Fiscal Note Summary: 5145 SB. seabed mining/hard minerals*

We urge your support of this bill and stand ready to assist or answer any questions that the Commission or staff may have.

Sincerely,

Handwritten signature of Amy Wolfrum in black ink.

Amy Wolfrum
California Ocean Policy Senior Manager
Monterey Bay Aquarium

Handwritten signature of Laura Walsh in black ink.

Laura Walsh
California Policy Manager
Surfrider Foundation

cc: Assemblymember Luz Rivas