



December 22, 2021

Honorable Assembly Member Luz M. Rivas
Chair of the Assembly Natural Resources Committee
1020 N Street, Room 164
Sacramento, California 95814

Re: AB 303 (Rivas) Aquaculture: Mariculture Production and Restoration - OPPOSE

Dear Assembly Member Luz M. Rivas,

The undersigned organizations have extensive knowledge of marine resources off the California coast and experience navigating the various laws and policies associated with coastal and marine development. We are very aware of the competing uses that our coastline faces, including recreation, energy generation, commercial industries, navigation, restoration, etc. We are also aware of the need to increase sustainable food sources, reduce dependency on imports, restore kelp forests, and adapt to a changing climate. Careful and proactive planning is needed to effectively coordinate all of these competing uses and needs, while making sure to review cumulative impacts and conflicts with a coordinated multi-agency approach to ensure compliance with California's strong and hard fought environmental protections.

Together, we write in opposition to Assembly Bill (AB) 303's Aquaculture: mariculture production and restoration: pilot program. While this bill purports to address many of our state's food and restoration needs, the approach is highly problematic and will prove to be ineffective. This bill would drastically increase the acreage available for aquaculture in California alongside a worrying decrease in oversight. The bill is an attempt to deregulate the aquaculture industry and eliminate the role of several agencies in these pilot areas, which sets a dangerous precedent. We are particularly concerned with the bill's proposal to eliminate the California Coastal Commission's (CCC) regulatory authority over marine aquaculture in the state under the California Coastal Act (Coastal Act). The Legislature has already recognized the CCC's important role to provide regulatory oversight over aquaculture using a consistent approach and a strong public process.¹

¹ The California Coastal Act specifically provides that the CCC is a key regulatory agency over aquaculture. *See* California Coastal Act §§ 30100.2, 30222.5, 30233, 30411, 30612.5.

Our additional concerns, discussed more below, include:

- I. The Bill's Approach is Inconsistent with the Coastal Act and other Laws and is an Attempt to Deregulate the Aquaculture Industry.
- II. AB 303 is Premature and Inconsistent with Other Ongoing State Agency Aquaculture Planning.
- III. The Bill Will Not Decrease Our Reliance on Foreign Seafood, and It May Actually Negatively Impact the Existing Commercial Fishing Industry.
- IV. The Bill does not Provide for Adequate Environmental and Agency Review.
- V. The Proposed Pilot Area is Significantly Larger in Scope than the Current Lease Area in Use.
- VI. AB 303 Appears to Provide too Much Authority to Local Governments with Minimal Oversight.
- VII. The Department of Fish and Wildlife (Department) Faces Challenges Related to Minimal Oversight, Limited Statewide Authority, Lack of Regulatory Capacity and Insufficient Budget.
- VIII. The Area for Aquaculture Proposed is Very Large and May Conflict with Other Efforts.
- IV. It is Unclear What Will Happen When the Pilot Process Ends or Fails Early.
- V. The Carbon Sequestration Benefits of Restoration are More Significant than the Benefits from Frequently Harvested Sea Plants.

Aquaculture is one of the fastest growing forms of food-production and has become a significant part of the global system, but it must be properly developed and managed.² Aquaculture can potentially cause many adverse ecological effects, such as the loss or modification of habitats, introductions and transfers of non-native and invasive species and diseases, the use of antibiotics and chemicals, entanglement, coastal pollution, salinization of soil and water.³

The importance of carefully reviewing impacts is critical, since aquaculture development is often placed within sensitive and complex ecosystems. Historical and recent examples highlight some of the challenges and environmental impacts of the aquaculture industry, such as extensive clean up after operational closure⁴, marine debris from existing operations, and the impacts of unpermitted activities statewide⁵, all of which can leave behind lasting impacts to habitat including eelgrass, and in extreme cases, there have been threats to public health and safety including even death⁶.

I. The Bill's Approach is Inconsistent with the Coastal Act and other Laws and is an Attempt to Deregulate the Aquaculture Industry.

² See Seth J. Theuerkauf, et. al., *A Global Spatial Analysis Reveals Where Marine Aquaculture Can Benefit Nature and People*, October 9, 2019, <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0222282#sec009>.

³ See J.H. Primavera, *Overcoming the Impacts of Aquaculture on the Coastal Zone*, *Ocean & Coastal Zone Management*, Vol. 49, Issues 9-10, 2006, <https://www.sciencedirect.com/science/article/abs/pii/S0964569106000755>.

⁴ Guy Kovner, *The Press Democrat*, *More Work Ahead to Restore Estero After Drakes Bay Oyster Co. Departure*, January 9, 2016, <https://www.pressdemocrat.com/article/news/more-work-ahead-to-restore-estero-after-drakes-bay-oyster-co-departure/?ref=related>; See also California Coastal Commission, Staff Report and Findings for Consent Cease and Desist Order No. CCC-07-CD-11 showing unpermitted operations, December 12, 2007.

⁵ For example, after-the fact authorizations have been issued to Morro Bay (December 13, 2019), Santa Barbara Mariculture (July 13, 2018), Hog Island Oyster Company (February 8, 2019), and other operations.

⁶ Rob McMillan, ABC7, *Hidden Danger off Socal Coast Leads to Tragic Death of Orange County Man Who Was Fishing*, December 10, 2019, <https://abc7.com/hidden-danger-off-socal-coast-leads-to-tragic-death-of-oc-man/5745369/>.

AB 303 would deprive several important agencies of their ability to ensure that aquaculture projects meet the State’s environmental and public health goals and mandates. Section 845(d)(1) clearly states that “the department shall, within the pilot program tracts, have *sole* authority or jurisdiction to approve, deny, or otherwise affect the ability of shellfish and seaweed mariculture production and restoration projects to operate, excluding the roles and responsibilities of the State Water Resources Control Board and the relevant leasing authorities.” (Emphasis added.)

For example, AB 303 would eliminate the regulatory authority of the CCC to review and issue coastal development permits under the Coastal Act. As such, the bill contravenes the Act, which provides the CCC with specific authority over aquaculture.⁷ Other agencies, including the California Department of Public Health and local counties, etc. could have their regulatory authority limited.

The State Legislature expressly recognized the importance of the CCC’s role in enacting SB 262 (2019)⁸, requiring the CCC, in consultation with the Department, to develop a comprehensive guidance for aquaculture applicants. The CCC successfully and collaboratively completed the Coastal Development Permit (CDP) Application Guidance in 2020 as required,⁹ which is a valuable tool for permit applicants. The Guidance provides detailed information regarding the clear, existing process, including timelines, and requirements for applications, as well as the roles of various state agencies to ensure proper coordination and efficiency. This shows the importance of the CCC in aquaculture permitting and coordination. SB 262 describes the purposes of the guidance in § 30612.5:

- (1) To reduce duplicative or overlapping information requirements during permit application filing.
- (2) To increase state and federal agency coordination.
- (3) To increase regulatory certainty.
- (4) To reduce the time and cost associated with securing a coastal development permit, to the extent possible.

As this guidance was only recently adopted, we should give the existing legislation a chance rather than embark on new costly legislation and a brand new regulatory structure.

In addition, the CCC has a consistent approach to aquaculture permitting and a strong public process. For instance, while the Department has put the Best Management Practices rulemaking process on hold, the CCC has stepped in to provide enforceable special conditions as part of their CDPs. This is one of many examples of the CCC’s strong history of consistent oversight of coastal development.

With minimal staff devoted to the project, the CCC has undergone a comprehensive and efficient statewide effort to ensure all aquaculture operations in state waters have appropriate CDPs and include consistent and enforceable measures to protect coastal and environmental resources. CCC staff estimates that the CCC has successfully issued or updated approximately 37 CDPs for aquaculture operations over the past six years (2015-2021), with over 95% processed as administrative or consent calendar items.

⁷ California Coastal Act §§ 30100.2, 30222.5, 30233, & 30411.

⁸ SB 262 Marine resources: commercial fishing and aquaculture: regulation of operations (2019), https://leginfo.ca.gov/faces/billTextClient.xhtml?bill_id=201920200SB262.

⁹ California Coastal Commission, CDP Application Guidance (CDP Guidance), December 2020, https://documents.coastal.ca.gov/assets/cdp/CDP%20Application%20Guidance_12.08.20.pdf.

Six to ten CDPs were processed per year between 2017-2020. Prior to the CCC's permit overhaul, many of the facilities were out of compliance with a variety of state and federal regulations. CCC staff has been able to complete this effort without the use of fines or penalties. In addition, there have been no permit denials except for in one case (a significant and controversial proposed expansion by Coast Seafoods, Humboldt Bay) where the project was later modified to avoid impacts to eelgrass habitat and the permit was approved.¹⁰

In addition, the CCC's public participation process is quite effective. The CCC has invested in public participation to increase transparency and participation based on the nature and complexity of development activities. Agendas and staff reports are consistently posted prior to the comment deadline, and their online interface is easy to navigate and locate records for public review of proposed development activities within the Coastal Zone.

Contrasting the CCC's regulatory authority to the proposed oversight of sublessees under § 846(e), it is clear that the CCC is better-equipped to handle this pilot program, assuming it is willing. Under § 846(e), one of three government agencies will be notified of a sublease within two months of its inception. This will confuse the regulatory framework by reducing accountability to any one agency or permit program and increase administrative uncertainty. Meanwhile, an unreviewed sublessee will have free reign over a tract of ocean or estuary for a minimum of two months. Considering aquaculture's potential harms to ecosystems, this is an alarming prospect.

Based on these factors, as well as the CCC's strong reputation in upholding California coastal regulation, this bill does not represent the best interests of California citizens in the protection of our coastal resources. While there have been some improvements in aquaculture industry practice overall, absolving the most active agency from oversight does not lend itself to enforcement of the laws. Also, the proposed regulatory regime offered by AB 303 would be inconsistent with the regulatory regime for existing lease holders, which could create confusion.

II. AB 303 is Premature and Inconsistent with Other Ongoing State Agency Aquaculture Planning.

Many state agencies are working together on aquaculture regulation. As discussed above, the CCC successfully completed the CDP Application Guidance¹¹, with much stakeholder input, which is a valuable tool for applicants. In addition, an Aquaculture Information Report¹² has been developed by the

¹⁰ The CCC has also been involved in pre-permitting efforts in Humboldt Bay. These pre-permitting efforts offer permit streamlining where sub-applicants are managed under one permit, although with full regulatory involvement within the existing system and Coastal Act compliance (unlike AB 303). In 2016, the CCC issued a CDP to the Humboldt Bay Harbor, Conservation and Recreation District which authorized the Harbor District to issue leases to individual businesses to carry out shellfish and macroalgae cultivation activities. This program under a CDP has been successful in its goal to provide small aquaculture start-up businesses and entrepreneurs that may be deterred from the potential expense and challenge of permitting processes with an expedited and lower-cost opportunity to initiate and develop aquaculture operations in Humboldt Bay. See California Coastal Commission, Staff Report, Oct. 14, 2016, <https://documents.coastal.ca.gov/reports/2016/11/f8a-11-2016.pdf>.

¹¹ California Coastal Commission, CDP Application Guidance (CDP Guidance), December 2020, https://documents.coastal.ca.gov/assets/cdp/CDP%20Application%20Guidance_12.08.20.pdf.

¹² California Department of Fish and Wildlife, The Status of Commercial Marine Aquaculture in California, Final Report to the California Fish and Game Commission, May 2020, pp. 22-68 of the PDF *available at*, <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=180517&inline>.

Department. The Ocean Protection Council is actively working on an aquaculture action plan with a public draft expected soon, aquaculture principles were completed in 2021¹³, and a state aquaculture Leadership Team has been formed¹⁴, the result of careful collaboration among many state agencies. Rather than building on these strong coordinated efforts, AB 303 disrupts and omits certain agencies from a collaborative process, which is already fully underway.

III. The Bill Will Not Decrease Our Reliance on Foreign Seafood, and It May Actually Negatively Impact the Existing Commercial Fishing Industry.

While we understand the value of local, sustainable food sources, AB 303 is unlikely to decrease our reliance on foreign seafood. Furthermore, it may actually threaten our already struggling commercial fishing industry.

The United States seafood export and import dynamic is complex. The United States both imports and exports seafood with many of the wild, higher cost items being exported.¹⁵ The United States is currently the largest seafood producer among developed countries. As of 2016, the United States is the fourth largest exporter *and* the largest importer of seafood.¹⁶ While the United States imports 90 percent of its seafood, the main imported species are shrimp, salmon, crab and white fish.¹⁷ These are not the species which are being proposed in AB 303.

AB 303 lists a number of species including oysters, mussels, and clams. However, oyster consumption in the United States is currently quite limited and has declined.¹⁸ Of the top ten seafoods consumed in the United States, mussels and oysters are not even listed. Clams are tenth at a consumption rate of less than one third per person per year in the United States.¹⁹ Oysters, mussels, or clams are not the items that are being imported.

Also problematic, many of our current commercial fisheries are facing threats due to ocean acidification, entanglement issues, etc. The significant expansion of the five pilot area under AB 303 may cause conflicts with the existing commercial fisheries including entanglement issues, which has caused public

¹³ Guiding Principles for State Marine Aquaculture in California, 2021, *available at*, https://www.opc.ca.gov/webmaster/_media_library/2021/06/Aquaculture-Principles-Public-20210604.pdf.

¹⁴ Ocean Protection Council, Executive Director's Report, December 7, 2021 meeting, *available at*, https://www.opc.ca.gov/webmaster/ftp/pdf/agenda_items/20211207/ED_Report_December_7_2021_FINAL.pdf.

¹⁵ Paul Greenberg, *Why Are We Importing Our Own Fish?*, June 20, 2014, <https://www.nytimes.com/2014/06/22/opinion/sunday/why-are-we-importing-our-own-fish.html>.

¹⁶ Food and Agriculture Organization of the United Nations, *USA Fisheries Statistics: Production, Consumption and Trade*, accessed December 16, 2021,

<http://www.fao.org/in-action/globefish/countries/countries/usa/usa-trade/en/>.

¹⁷ Food and Agriculture Organization of the United Nations, *USA Fisheries Statistics: Production, Consumption and Trade*, accessed December 16, 2021,

<http://www.fao.org/in-action/globefish/countries/countries/usa/usa-trade/en/>.

¹⁸ *See Apparent Per Capita Oyster Consumption in the USA*, Mississippi MarketMaker Blog, January 13, 2016, <https://msmarketmaker.wordpress.com/2016/01/13/apparent-per-capita-oyster-consumption-in-the-usa/>.

¹⁹ National Fisheries Institute, *Top 10 List for Seafood Consumption*, accessed December 16, 2021, <https://aboutseafood.com/about/top-ten-list-for-seafood-consumption/>.

safety issues in the past including a death.²⁰ It is worth noting that the death occurred in federal waters, where the California Coastal Commission has less jurisdiction than in state waters.

IV. The Bill does not Provide for Adequate Environmental and Agency Review.

Environmental review should be a priority for these projects considering that AB 303 states increasing coastal resiliency, conservation, and restoration as some of its purposes. AB 303 § 846(c) provides only a four month deadline for the State Lands Commission or the Fish and Game Commission to “prepare, review, and either approve or deny a water bottom lease or ground lease.” This unrealistic deadline for a decision within four months of receiving a complete application eliminates the potential for environmental review under the California Environmental Quality Act (CEQA). There is no CEQA exemption for pilot projects.

Furthermore, the permitting process should not be simplified for aquaculture permits if that means eliminating meaningful environmental oversight and compliance. AB 303 § 829 requires the Department to consider ways to streamline Army Corps of Engineers permits within the state for aquaculture projects. Considering the many potentially adverse impacts of aquaculture, these projects should receive individualized environmental review under CEQA.

AB 303 § 846(c) provides that pilot program sites may be cultivated with no permits, except any permit required by the State Water Resources Control Board. This lack of permitting will allow lessees to operate with minimal environmental oversight and accountability.

V. The Proposed Pilot Area is Significantly Larger in Scope than the Current Lease Area in Use.

Considering that AB 303, as amended, proposes to open up a minimum of 3.86 square miles (or 2,471 acres) of California’s oceans and estuaries to aquaculture projects, this lack of environmental review could have disastrous consequences. As of 2020, California commercial marine aquaculture lease area in use is estimated at 574 acres of the state’s waters, and the total leased area is 5,740 acres.²¹ The actual used area is significantly smaller than the leased area, so there is potential room for expansion within existing leases without the creation of a pilot program, which would add approximately 4x more acres than the area that is currently being used in the state for aquaculture.

The bill also does not consider the distance between pilot areas, which was raised by Assembly Member Christopher M. Ward during the Water, Parks & Wildlife hearing on April 8, 2021.²² The cumulative impacts of dense use could be considerable, especially considering existing operations. Potential use conflicts could also be raised if existing leases conflict with these proposed pilot areas.

²⁰ Rob McMillan, ABC7, *Hidden Danger off Socal Coast Leads to Tragic Death of Orange County Man Who Was Fishing*, December 10, 2019, <https://abc7.com/hidden-danger-off-socal-coast-leads-to-tragic-death-of-oc-man/5745369/>.

²¹ California Department of Fish and Wildlife, *The Status of Commercial Marine Aquaculture in California*, Final Report to the California Fish and Game Commission, May 2020, Table 2-1, p. 28 of the PDF available at, <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=180517&inline>.

²² California State Assembly, Water, Parks & Wildlife Committee hearing, April 8, 2021, 2:08:44, <https://www.assembly.ca.gov/media/assembly-water-parks-wildlife-committee-20210408/video>.

Furthermore, the state's estuaries and coastal waters are already facing ocean acidification, biodiversity losses,²³ sea level rise, and other threats. In light of all of these ongoing challenges, direct and cumulative impacts must be closely considered.

VI. AB 303 Appears to Provide too Much Authority to Local Governments with Minimal Oversight.

AB 303's authorization to local governments to apply for shellfish and seaweed mariculture and restoration leases and designate sublessees without authorization from the Department, State Lands Commission, or the Fish and Game Commission is a dangerous gamble. Section 846(e) provides that local governments holding mariculture and restoration leases may designate individual mariculturists as sublessees without outside authorization or oversight. Section 846(e) requires that local governments notify the Department, the State Lands Commission, or the Fish and Game Commission of the sublease within two months of its beginning. Notifying one of three departments within two months of the beginning of their sublease does not provide nearly enough opportunity for oversight. Moreover, AB 303 would allow lessees to begin cultivation without any permits (beyond those required by the State Water Resources Control Board).

AB 303 also provides no guidelines or requirements for these local governments as they choose their sublessees. This is a potentially dangerous omission, as local governments may not have the resources or technical expertise to properly site, approve development, or be able to ensure an adequate public process or proper implementation of best management practices.

VII. The Department of Fish and Wildlife Faces Challenges Related to Minimal Oversight, Limited Statewide Authority, Lack of Regulatory Capacity and Insufficient Budget.

In the past, the Department and the Fish and Game Commission has provided very minimal oversight over state aquaculture operations. Although oversight is increasing, this industry has been largely unregulated for decades. Lease fees are low and escrow accounts are limited or non-existent. The Environmental Action Committee of West Marin (EAC) has observed marine debris issues in Tomales Bay since at least 2015, which is when it began advocating for Best Management Practices to the Fish and Game Commission. While the Fish and Game Commission has acknowledged the importance of this effort, this process is on hold.

Also, the Department does not have statewide authority in all areas, including the Humboldt Harbor District and other areas in California, including the Port of San Diego and the Agua Hedionda Lagoon in Carlsbad, potentially creating a patchwork of conflicting regulatory authority.

In addition, by delegating all mariculture permitting responsibility to the Department, AB 303 fails to recognize the severe staffing and budgetary limitations the agency is currently facing and will likely continue to face. The Department's budget constraints are well-established and the Legislature recently provided \$4 million to the Department for them to undertake a Service Based Budget Review

²³ Shorebird decline is well documented. Nils Warnock, et al., *Declining wintering shorebird populations at a temperate estuary in California: A 30-year perspective*, Vol. 123, American Ornithological Society, February 10, 2021; see also CDP Guidance CDP Application Guidance, December 2020, https://documents.coastal.ca.gov/assets/cdp/CDP%20Application%20Guidance_12.08.20.pdf, p. 36.

identifying any gaps between its mission level of service and current service levels. The 2021 final report indicates that the two most underinvested categories of service (environmental permitting and protection and species and habitat conservation) are underfunded to the tune of 71 percent and 74 percent.

In 2020, the Fish and Game Commission adopted a six-month hiatus on receiving new aquaculture lease applications at their June meeting, largely due to staffing constraints and the inability to keep up with the three new applications they have recently received, some of which they have had for over two years. This hiatus was continued in December 2020. Even though the hiatus was lifted at the April 2021 Fish and Game Commission meeting, the Department still indicates that they are suffering from capacity constraints, and an unprecedented number of current lease amendments (12 out of 17), some of which include boundary adjustments.²⁴ The boundary adjustments in some cases are needed as the current leaseholders are currently operating outside of their leased area. The March 2021 staff report states, “the principle limiting factor that prevents advancing requests more quickly is resource capacity, a constraint that is not anticipated to change in the near-term.”²⁵

Considering the regulatory gaps and the Fish and Game Commission’s own recent action to halt receipt of new lease requests, it does not appear that this agency is well poised to take on regulatory compliance and oversight for the entire state. Also, the Fish and Game Commission does not possess the regulatory authority to be compensated by applicants for the costs of the CEQA process, unlike many other state agencies.

VIII. The Area for Aquaculture Proposed is Very Large and May Conflict with Other Efforts.

While we want to make it clear that we support sustainable aquaculture and understand there is a desire to expand this industry and improve agency coordination, we are concerned about the large area proposed in this bill (a minimum of five, 200-hectare tracts of estuary or ocean, which is 3.86 square miles (or 2,471 acres)). While we appreciate that the proposed area also includes restoration, the division is unclear. Bull kelp forest restoration is proposed but only at a minimum of one site or is it only required to be a site that requires restoration? The language is unclear.

The proposed pilot areas are also significantly larger in size and longer in duration than similar projects in other East Coast states (compare 2,500 acres and 15 years to less than 1 acre and 1-3 years).²⁶ Assembly Member Christopher M. Ward raised a concern that there is currently no maximum area for these pilot areas during the Water, Parks & Wildlife hearing on April 8, 2021.²⁷

²⁴ See Fish and Game Commission Marine Resources Committee meeting, Item 4, March 16, 2021, <https://fgc.ca.gov/Meetings/2021> and Randy Lovell, State Aquaculture Coordinator’s presentation; and Meeting Documents, <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=189226&inline> & Fish and Game Commission meeting, Item 18, April 14, 2021, Meeting Documents, <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=190632&inline>.

²⁵ Fish and Game Commission Marine Resources Committee meeting, Item 4 (p. 3 or 16 of the PDF), March 16, 2021, Meeting Documents, <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=189226&inline>.

²⁶ See Pablo Garza, Bill Analysis, April 6, 2021, https://leginfo.legislature.ca.gov/faces/billAnalysisClient.xhtml?bill_id=20210220AB303.

²⁷ California State Assembly, Water, Parks & Wildlife Committee hearing, April 8, 2021, 2:08:23, <https://www.assembly.ca.gov/media/assembly-water-parks-wildlife-committee-20210408/video>.

Overall, there is a significant area of our oceans and estuaries proposed for aquaculture development, which may conflict with other bills and efforts which aim to protect more marine areas and our already threatened biodiversity including the state and federal 30x30 efforts including Executive Order N-82-20, which is referenced in AB 303, showing our shared support for these efforts.²⁸ As we face a changing climate, acidification, deoxygenation, species loss, and other threats to our coastal ecosystems, we must be even more protective of these valuable and irreplaceable resources. AB 303 itself states that environmental conditions are changing in Section 1(a)(5). Deregulating commercial aquaculture does not advance 30x30 goals, and statements that assert that it does serve to undermine the legitimacy of the initiative.

IV. It is Unclear What Will Happen When the Pilot Process Ends or Fails Early.

Despite the fact that 15 years is a very long time for a pilot, we have concerns related to what happens when the pilot project ends or fails early. Without adequate oversight, clean up costs, or escrow accounts, what will happen if any one of these large projects fails? Historical examples highlight some of the challenges and environmental impacts of the aquaculture industry, such as extensive clean up after operational closure,²⁹ which can leave behind lasting impacts to habitat, and in extreme cases, there have been threats to public health and safety.³⁰

V. The Carbon Sequestration Benefits of Restoration are More Significant than the Benefits from Frequently Harvested Sea Plants.

The bill cites the benefits of carbon sequestration provided by seaweed, and the potential for mariculture to play a significant role in reversing the environmental threats of climate change. While we strongly support the benefits of restoration and blue carbon, we would like to point out that all projects are not created equally. For instance, the longer-term sequestration benefits of carbon sink ecosystem restoration and conservation may outweigh the shorter-term benefits of continuously harvested seaweed.

While seaweed may extract carbon from the atmosphere, this process does not result in direct blue carbon sequestration.³¹ To play a significant role in long-term sequestration of blue carbon, ecosystems must have the opportunity to store captured carbon and bury it in sediment, contributing to permanent carbon sequestration. This means that the continuous harvesting of kelp and seaweed products is a means of carbon capture, but not necessarily as effective as long-term restoration and conservation efforts, where environments such as seagrass or salt marshes can capture and deposit external carbon into the sediment. Further, human activities that disturb or expose sediments of seagrass ecosystems may accelerate erosion and reduce carbon stock accumulated in soils over long periods of time.³² These

²⁸ Executive Order N-82-20, <https://www.gov.ca.gov/wp-content/uploads/2020/10/10.07.2020-EO-N-82-20-.pdf>.

²⁹ Guy Kovner, The Press Democrat, "More work ahead to restore estero after Drakes Bay Oyster Co. departure," January 9, 2016, <https://www.pressdemocrat.com/article/news/more-work-ahead-to-restore-estero-after-drakes-bay-oyster-co-departure/?ref=related>; See also California Coastal Commission, Staff Report and Findings for Consent Cease and Desist Order No. CCC-07-CD-11 showing unpermitted operations, December 12, 2007.

³⁰ Rob McMillan, ABC7, "Hidden danger off SoCal coast leads to tragic death of Orange County man who was fishing," December 10, 2019, <https://abc7.com/hidden-danger-off-socal-coast-leads-to-tragic-death-of-oc-man/5745369/>

³¹ Duarte CM, Losada IJ, *et al.* *The Role of Coastal Plant Communities for Climate Change Mitigation and Adaptation.* Nature Climate Change. 2013; 3: 961–968. doi: 10.1038/nclimate1970.

³² Mcleod, Elizabeth, *et al.* *A Blueprint for Blue Carbon: toward an improved understanding of the role of vegetated coastal habitats in sequestering CO2.* Frontiers in Ecology and the Environment. 2011; 9(10): 552-560, doi:10.1890/110004.

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factors should be carefully considered and researched when evaluating allocation of restoration and mariculture systems along the coast.

While we understand some of AB 303's goals, opening the door to such a pilot program with minimal oversight and deregulation threatens to do more harm than good to California's coastal habitats and biodiversity. Rather than cutting out agencies, it makes more sense to increase collaboration to streamline the process while still upholding the state's hard fought environmental regulations. Thank you for your review of our comments related to our concerns with AB 303.

Sincerely,

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