
# Summary & Key Takeaways from the 2022 Blue Economy Symposium & Learning Festival

In order to consider the needs and potential for developing a vibrant ocean-based economy on the Mendocino Coast, the Blue Economy Symposium & Learning Festival was held on May 19–22, 2022.

For context, the National Oceanic and Atmospheric Administration has described the New Blue Economy as *"a knowledge-based economy, looking to the sea not just for extraction of material goods, but for data and information to address societal challenges and inspire their solutions."*

California Sea Grant Specialists Luke Gardner and Kevin Marquez Johnson collaborated with Sarah McCormick, the Assistant City Manager of Fort Bragg, to convene a two-day symposium, followed by a two-day learning festival with numerous activities occurring citywide.

The symposium focused on multiple aspects of the blue economy, including sustainable fisheries, commercial and conservation aquaculture opportunities, education, job training, and the infrastructure needs of Fort Bragg and neighboring Noyo Harbor District.

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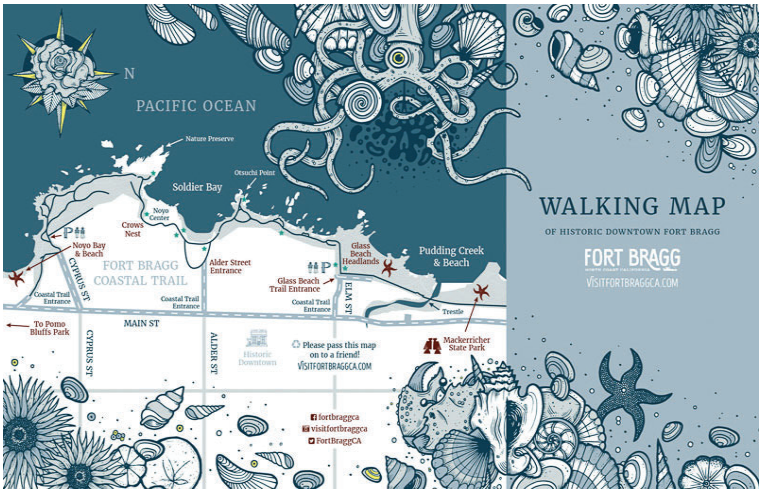
This event highlighted the importance of working waterfronts in coastal resiliency planning and resulted in several significant developments. For instance, discussions and takeaways from the symposium prompted the City to apply for grant funds from the California Coastal Commission, which has since awarded $898,990 to support the Noyo Harbor Blue Economy Visioning, Resiliency and Implementation Plan.




A second major development resulting from the Blue Economy Symposium & Learning Festival was the formation of a new regional coalition: the Noyo Ocean Collective — a partnership between the City of Fort Bragg, Noyo Harbor District, Sherwood Valley Band of Pomo Indians, Mendocino Coast College, West Business Development Center and Noyo Center for Marine Science.

Below is a summary of key discussions and takeaways from the 2022 Blue Economy Symposium. The recap order follows the structure and chronological order of the symposium itself, ending with a consideration of future actions to take.

## Takeaways from Day One's Keynote Speech

*Keynote speaker:* **Paula Sylvia**, Program Director, Aquaculture & Blue Technology Program

► California's Blue Economy has a $42.4 billion economic impact.

► Blue economy businesses have increased annual revenues by 18% and jobs by 163% over the past 10 years, despite COVID impacts.

► Ports and harbors are uniquely positioned to develop blue economic activity, as they are often afforded governing roles as special districts and take responsibility for many roles including landlords, regulators and environmental stewards. They are also excellent facilitators with expertise in permitting and supporting public/private partnerships.

► The Port of San Diego initiated a Blue Economy Incubator Program to explore environmental and economic opportunities, as well as diversify their portfolio of businesses. Initially, this involved a programmatic environmental impact report to assess pre-permitting and provide an environment for businesses to engage in the blue economy.

►The Port of San Diego's Blue Economy Incubator provides physical pilot space for nine companies involved in technology, remediation, aquaculture and infrastructure.

# Infrastructure Discussion Summary

*Facilitator:* **Sarah McCormick**, Assistant City Manager, City of Fort Bragg

*Speakers:* **Sarah McCormick**, City of Fort Bragg; **Radhika deSilva**, ASA Analysis and Communication Inc.; **Tim Hogan**, TWB Environmental Research; **Anna Neumann**, Noyo Harbor District.

In an effort to develop a diverse and resilient economy, the City of Fort Bragg initiated a regional conversation to explore how emerging blue economy opportunities could transform the Mendocino Coast.

This session focused on potential infrastructure needs of the City and Noyo Harbor District, including municipal ocean water infrastructure to support aquaculture, aquariums and research, as well as several projects identified in the Noyo Harbor Community Sustainability Plan (2019).

**These specific details were raised and discussed during the session:**

► Engineering and environmental consultants considered ocean water supply infrastructure needs for research, restoration, education and commercial purposes with end users Blue Economy Innovation Center and Noyo Center for Marine Science in mind.

► The permitting and building of ocean water supply and discharge infrastructure is significant in effort and cost; it is guided primarily by the State Water Board Ocean Plan and the Marine Protection Act.

► A surface ocean water intake system capable of pumping up to 1,000,000 gal/day with a 1 mm mesh screen to reduce organism entrainment is the current recommended configuration. The proposed discharge system would use existing wastewater treatment plant infrastructure and thus already conforms with several regulatory requirements.

► Noyo Harbor Community Sustainability Plan identified 11 major infrastructure projects to improve harbor functionality. These are for current user needs as well as projected needs for when the blue economy continues to develop in Fort Bragg.

► Investments into new and improved infrastructure will boost local fisheries and potentially attract new processors and fish buyers to the area.

► The most pressing harbor infrastructure need is a fuel dock. Noyo Harbor is the only marina in California without a fuel dock, hindering the range of commercial and recreational fishers who operate out of Fort Bragg. Lack of suitable harbor infrastructure deters regional recreational and commercial fishers from stopping in Noyo Harbor during extended fishing trips.

## Fisheries and the Blue Economy Panel Summary

*Facilitators:* **Carrie Pomeroy**, UC Santa Cruz and **Jocelyn Enevoldsen**, Cal Poly Humboldt

*Speakers:* **Bob Juntz**, Ocean Fresh Seafood; **Dan Platt**, Commercial Fisherman + Noyo Harbor Tours; **Grant Downie**, Commercial Fisherman; **Kevin Browning**, Ambush Charters; **Scott Hockett**, Commercial Fisherman + Noyo Fish Company

Fort Bragg fisheries have a rich, vibrant history and are an important part of the identity of the community. Local fishermen and seafood business operators participated in a panel discussion, sharing their perspectives on the fishing industry at Fort Bragg, including its cultural and socioeconomic significance and infrastructure needs.

The panelists represented commercial and recreational fisheries — including urchin divers, groundfish fishermen, charter boat operators and seafood processors — and collectively brought generations of knowledge and experience to the discussion. **Here are some key takeaways:**

► Fort Bragg's commercial and recreational fisheries, centered at Noyo Harbor, have persisted despite environmental, regulatory, social and economic challenges.

► A series of events beginning with the federal groundfish fishery disaster in 2000, followed by increasingly limited access to fishery permits and fishing grounds as well as kelp loss, have led to a substantial decline in commercial fishery participation.

► Noyo Harbor lacks essential fishery-support infrastructure — notably a fuel dock and ice machines — hampering local commercial and recreational fisheries, businesses and the larger harbor economy, including tourism.

► Locally-informed action to address these needs coupled with the broader ocean and coastal community's commitment and external support are key to sustaining and enhancing Fort Bragg's fisheries and the larger blue economy.

► While efforts to remove and ranch purple urchins through shore-based aquaculture are potentially helpful for addressing kelp forest loss, some in the fishing community see kelp outplanting as critical to helping the natural system.


## Education, Entrepreneurship and Job Force Training Session

*Facilitator:* **Sheila Semans**, Executive Director for Noyo Center for Marine Science

*Speakers:* **Sheila Semans**, Noyo Center for Marine Science; **Mary Anne Petrillo**, West Business Development Center; **Shauna Oh**, California Sea Grant; **Tim Karas**, Mendocino College Coast Center

Developing a blue economy requires people, to put it simply. This session covered existing and proposed educational pathways for fishers and aquaculturists, as well as the barriers and opportunities for blue economy entrepreneurship and industry diversification. **These were some major discussion points:**

► Many challenges face blue economy entrants, including financing, a lack of mentorship from existing participants — in the fishing industry particularly — and an uncertain job market.

► The blue economy will be best supported by networks of institutions working together. Examples include California Sea Grant, local colleges, community centers and industry participants such as fishers.

►To bolster the county's economy, it will be essential to develop the required infrastructure by committing the resources and creating public-private partnerships that focus on economic diversification and innovative small business expansion.

►California Sea Grant apprenticeship programs look to train and guide a new generation of fishers and aquaculturists.

## Brief Recap of Day Two's Keynote Speeches

*Keynote speakers:*

**State Controller Betty Yee** spoke about the role of the blue economy in revitalizing and increasing economic resilience for the community of Fort Bragg.

**Rep. Jared Huffman** — Chair of the Natural Resources Subcommittee on Water, Oceans and Wildlife — spoke about the KELP Act he introduced to help fund the conservation, restoration and management of kelp along the coast of California.

## Aquaculture Session Summary

*Facilitator:* **Luke Gardner**, Extension Specialist with California Sea Grant

*Speakers:* **Randy Lovell**, California Department of Fish and Wildlife; **Gregory Barbour**, Hawaii Ocean Science + Technology Park; **Severino Gomes**, Kashia Band of Pomo Indians

Aquaculture is the fastest-growing food production system in the world and a priority for meeting increased demands for sustainable seafood.

This session included information about the current state of the aquaculture industry and permitting in California, a presentation from an existing aquaculture technology park in Hawaii, and a perspective from the Kashia band of Pomo Indians on the process of establishing an aquaculture operation in California. **Here are some key takeaways:**

► Existing aquaculture parks have created operational and economic models that are proven to work and are positive influences on aquaculture development and local economies.

► Indigenous communities are increasingly interested in aquaculture for the purposes of serving cultural needs, stewardship, food security and economic development.

► There are significant hurdles, both in terms of permitting and infrastructure, to aquaculture in California. Despite significant public interest, few new aquaculture ventures have been established recently in California.With planning and support it is possible to establish an aquaculture operation, but this is often beyond the capacity of small, prospective operators.

► For new aquaculture ventures to be realized in the near term, it will require significant collaboration between private entities as well as cooperation from local governments.

## Conservation Aquaculture Discussion Summary

*Facilitators:* **Kevin Marquez Johnson**, Extension Specialist with California Sea Grant

*Speakers:* **Gina Contollini**, California Sea Grant; **Norah Eddy**, The Nature Conservancy; **Alyssa Frederick**, UC Davis Postdoc; **Gary Fleener**, Hog Island Oyster Company

Conservation aquaculture practices are increasingly common throughout California, with new opportunities bringing together commercial and conservation aquaculturists. Talks highlighted ongoing aquaculture efforts to restore kelp forests, sunflower sea stars and white abalone, as well as how commercial oyster aquaculture can support the recovery of native Olympia oysters in California. **Below are a few key points from the session:**

► The best methods for supporting kelp forest recovery with conservation aquaculture are still in development. These methods include both outplanting hatchery-produced juvenile kelp and reintroducing cultured sun flower sea stars to control urchin populations. Together they may eventually provide crucial tools for restoring the kelp forests of Northern California.

► Conservation aquaculture for restoring White abalone populations has enabled the first re-introduction of White abalone into the wild in California.

► Commercial aquaculture operations contribute to restoration goals by increasing population sizes on their leases while commercially cultivating the native Olympia oyster.

## Commercial Aquaculture Discussion Summary

*Facilitators:* **Luke Gardner**, Extension Specialist with California Sea Grant

*Speakers:* **Dan Gossard**, Monterey Bay Seaweeds; **Leslie Booher**, Sunken Seaweeds; **Doug Bush**, The Cultured Abalone Farm; **Peter Struffenegger**, Urchinomics

Commercial aquaculture is a diverse industry in California, represented in 53 of the 58 counties. It includes both marine and freshwater species, farm algae, shellfish and fin fish, and uses a variety of methods.

This session featured several seaweed and shellfish aquafarmers who presented their business operations and histories as examples of current commercial aquaculture in California and industry needs. They discussed the process of permitting, market development, and partnering with educational institutions and ports to establish their businesses and develop technologies.

Initiating an aquaculture business is an expensive and lengthy process. A suggestion discussed for a successful starting point is finding and partnering with existing institutional aquaculture partners — such as ports and harbors or universities. For a service fee, those entities can provide infrastructure and permitting needs to new entrants that can help to defray prohibitive startup costs.

# Symposium Summary and Next Steps

In all, the Blue Economy Symposium at Fort Bragg offered a chance for community stakeholders, agencies, and experts in fishing, education and aquaculture to come together and share information about the current state of the blue economy as well as visions for future directions for the Fort Bragg community.

There is a clear need for and interest in collaboration and continued communication to expand the blue economy in Fort Bragg. Many blue economy undertakings will require new infrastructure — in addition to the projects already under consideration by the City of Fort Bragg and the Noyo Harbor District. Future development should go hand-in-hand with current efforts.

The Blue Economy Symposium started the process of establishing a **clear vision for the future of the blue economy** and identified paths forward and partnerships to help Fort Bragg reach its goals. Next steps in this effort include:

### Preparing a Visioning, Resiliency & Implementation Plan for Noyo Harbor

With momentum and regional support from the symposium, the City requested and was awarded $898,990 from the California Coastal Commission to perform an analysis that will support informed decision-making. The first step is to develop an effective communication and engagement plan for the community.

Grant funds will also be utilized to prepare a Noyo Harbor Blue Economy Visioning, Resiliency and Implementation Plan. This plan will provide baseline information, identify opportunities and limitations, and develop site-specific adaptation and resiliency measures. It will also identify potential projects, partners and funding sources for blue economy investment.

## Harnessing the Power of Partnership with Noyo Ocean Collective

The regional collaboration formed between the City of Fort Bragg, Sherwood Valley Band of Indians, Noyo Harbor District, Mendocino College, West Business Development Center and Noyo Center for Marine Science will continue to find opportunities to partner and support blue economy innovation in the area.

Since the symposium, Noyo Ocean Collective has been actively engaged in the Redwood Region's planning for the funding of California's Community Economic Resiliency Fund Program. Identified regional projects include design and entitlements for Noyo Center for the Marine Science facility on the former mill site; several blue economy investments in and around Fort Bragg, such as completing studies needed prior to construction for permitting a municipal ocean water intake/discharge facility; the Noyo Harbor Blue Economy Visioning, Resiliency and Implementation Plan; and an innovative pilot project involving passive wave-generated desalination buoy technology.

## Developing the Noyo Center for Marine Science

The Fort Bragg community identified a marine science and education center as a high priority for reuse of the former Georgia Pacific Mill Site. The City authorized funding to develop a feasibility study, incubated the nonprofit in city hall and transferred 11.64 acres of property on the Mill Site for a facility.

The Noyo Center for Marine Science receives ongoing financial support through a collected transient occupancy tax. In addition, in September 2022, the U.S. Department of Commerce invested $825,230 in American Rescue Plan funds to support design work and develop a business plan for a facility on the Noyo Headlands.

**Launching a Pilot Aquaculture Project**

To support permitting for an aquaculture hub, Environmental Defense Fund (EDF) facilitated a request for fiscal year 2023 federal earmarked funds. The request was coordinated between EDF, San Jose State University's Moss Landing Marine Laboratories, the Port of San Diego's Aquaculture and Blue Technology Incubator, Kashia Band of Pomo Indians, Noyo Center for Marine Science, Mendocino College, and the City of Fort Bragg.

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**Overall:**

The main outcome of the Blue Economy Symposium and Learning Festival was a collective awareness of both the opportunities and challenges facing the growth of a sustainable, ocean-based economy on the Mendocino Coast. Partners came away from the symposium enthusiastic about the potential for further developing a successful blue economy in the area.

New opportunities continue to arise from the symposium. The City of Fort Bragg, for example, recently partnered with Oneka Technologies to deploy a desalination system that uses wave energy to turn seawater into fresh water. With a $1.5 million grant from the California Department of Water Resources to demo Oneka's buoy technology, Fort Bragg is taking early steps to test this promising desalination project.

The projects and strategies being tried on the Mendocino Coast have the ability to reach beyond the region because sustainable change comes from trial and error, research, and the sharing of best practices. As the Visit Fort Bragg website notes, "It's said that a rising tide lifts all boats, and that's a good way to think about the Blue Economy."

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