

**THE BLUE ECONOMY:
ADVANCING AMERICAN FISHERIES, MARITIME
STRENGTH, AND COASTAL ECONOMIES**

HEARING

BEFORE THE

SUBCOMMITTEE ON COAST GUARD, MARITIME,
AND FISHERIES

OF THE

COMMITTEE ON COMMERCE,
SCIENCE, AND TRANSPORTATION
UNITED STATES SENATE

ONE HUNDRED NINETEENTH CONGRESS

SECOND SESSION

JUNE 2, 2026

Printed for the use of the Committee on Commerce, Science, and Transportation



Available online: <http://www.govinfo.gov>

U.S. GOVERNMENT PUBLISHING OFFICE

64–450 PDF

WASHINGTON : 2026

SENATE COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

ONE HUNDRED NINETEENTH CONGRESS

SECOND SESSION

TED CRUZ, Texas, *Chairman*

JOHN THUNE, South Dakota	MARIA CANTWELL, Washington, <i>Ranking</i>
ROGER WICKER, Mississippi	AMY KLOBUCHAR, Minnesota
DEB FISCHER, Nebraska	BRIAN SCHATZ, Hawaii
JERRY MORAN, Kansas	EDWARD MARKEY, Massachusetts
DAN SULLIVAN, Alaska	GARY PETERS, Michigan
MARSHA BLACKBURN, Tennessee	TAMMY BALDWIN, Wisconsin
TODD YOUNG, Indiana	TAMMY DUCKWORTH, Illinois
TED BUDD, North Carolina	JACKY ROSEN, Nevada
ERIC SCHMITT, Missouri	BEN RAY LUJAN, New Mexico
JOHN CURTIS, Utah	JOHN HICKENLOOPER, Colorado
BERNIE MORENO, Ohio	JOHN FETTERMAN, Pennsylvania
TIM SHEEHY, Montana	ANDY KIM, New Jersey
SHELLEY MOORE CAPITO, West Virginia	LISA BLUNT ROCHESTER, <i>Delaware</i>
CYNTHIA LUMMIS, Wyoming	

BRAD GRANTZ, *Republican Staff Director*

NICOLE CHRISTUS, *Republican Deputy Staff Director*

LILA HARPER HELMS, *Staff Director*

MELISSA PORTER, *Deputy Staff Director*

SUBCOMMITTEE ON COAST GUARD, MARITIME, AND FISHERIES

DAN SULLIVAN, Alaska, <i>Chairman</i>	LISA BLUNT ROCHESTER, <i>Delaware,</i>
ROGER WICKER, Mississippi	<i>Ranking</i>
JOHN CURTIS, Utah	BRIAN SCHATZ, Hawaii
BERNIE MORENO, Ohio	GARY PETERS, Michigan
TIM SHEEHY, Montana	TAMMY BALDWIN, Wisconsin

CONTENTS

	Page
Hearing held on June 2, 2026	1
Statement of Senator Sullivan	1
Statement of Senator Blunt Rochester	3
Statement of Senator Wicker	5
Statement of Senator Cantwell	30
Prepared statement	31

WITNESSES

Tommy Sheridan, Director, Alaska Blue Economy Center (ABEC), University of Alaska Fairbanks (UAF)	5
Prepared statement	7
Jeremy Woodrow, Executive Director, Alaska Seafood Marketing Institute	12
Prepared statement	13
Nathan Wardwell, Managing Partner, JOA Surveys LLC	16
Prepared statement	18
Clayton Heil, Vice President, Global Government Relations, Crowley	19
Prepared statement	21

APPENDIX

Response to written questions submitted to Tommy Sheridan by:	
Hon. Roger Wicker	41
Hon. Lisa Blunt Rochester	43
Response to written questions submitted to Nathan Wardwell by:	
Hon. Lisa Blunt Rochester	45
Response to written questions submitted to Clay Heil by:	
Hon. Lisa Blunt Rochester	46

THE BLUE ECONOMY: ADVANCING AMERICAN FISHERIES, MARITIME STRENGTH, AND COASTAL ECONOMIES

TUESDAY, JUNE 2, 2026

U.S. SENATE,
SUBCOMMITTEE ON COAST GUARD, MARITIME, AND
FISHERIES,
COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION,
Washington, DC.

The Subcommittee met, pursuant to notice, at 10:08 p.m., in room SR-253, Russell Senate Office Building, Hon. Dan Sullivan, Chairman of the Subcommittee, presiding.

Present: Senators Sullivan [presiding], Wicker, Moreno, Sheehy, Blunt Rochester, and Cantwell.

OPENING STATEMENT OF HON. DAN SULLIVAN, U.S. SENATOR FROM ALASKA

Senator SULLIVAN. Good morning. I want to welcome our distinguished witnesses. Apologize for my tardiness, but I think at least three of you understand. I just got in from Alaska last night, and you know what that's like. So welcome, especially to the Alaskans.

And this is a subcommittee hearing that examines the importance of America's blue economy and the opportunities it presents for economic growth, innovation, job creation, and national security. The blue economy encompasses the industries, activities, and of course, the communities that rely on our oceans, coasts, Great Lakes to create economic opportunities, support jobs, strengthen national security, and sustain coastal communities, including the American fishermen.

The blue economy is also central to America's economic strength. In 2022, It generated more than \$470 billion in goods and services and supported 2.4 million jobs. It is one of the fastest growing sectors in America, in our economy, and indeed the world, encompassing commercial fisheries and seafood, sport fisheries, subsistence fisheries, maritime transportation, ports, tourism and recreation, and much more.

For the United States, and especially for coastal states like my state, the great state of Alaska, these industries and community are not optional. They are essential. I always do a little bit of bragging about the great state of Alaska here, but when we talk about coastline, we have more coastline than the rest of the country combined. I have a colleague from Minnesota here who I respect a lot.

She talks about her State having 10,000 lakes. My state has 3 million lakes.

America is a maritime Nation. Our economic success, food security, supply chains, and national defense depend on safe, healthy, and productive oceans. This hearing comes at a critical time as our Nation races to strengthen our maritime industries and secure our place in the global blue economy. But so are other countries.

The Federal Government is making significant investments and taking important steps to ensure America remains competitive and our coastal communities continue to thrive. Seafood, and of course our fishermen and coastal communities, remains one of the pillars of the blue economy.

Alaska is the superpower of seafood, I like to say, producing more than 60 percent—harvesting more than 60 percent of all commercial sport and subsistence seafood in America and providing roughly 10 billion meals of healthy protein—wild Alaskan fish—each year. Our fisheries support thousands of jobs, sustain coastal communities, and help feed both our Nation and the world.

President Trump’s executive order on restoring American seafood competitiveness recognizes an important reality: seafood competitiveness is economic security and even national security. At the same time, Illegal, Unreported, and Unregulated fishing remains a major threat not just to global fish stocks and fair competition, but to the economic and national security of the United States.

That is why my bipartisan Fighting Foreign Illegal Seafood Harvests, or the FISH Act, which strengthens enforcement, improves international coordination, and targets foreign bad actors, particularly China, is so important to stop this illegal fishing, what Senator Whitehouse calls pirate fishing. We passed that in the Senate recently, and I believe it’s going to be passed in the House soon. That will be the most comprehensive IUU fish legislation in the history of the country.

This builds on the bills Senator Whitehouse and I passed the Save Our Seas Act, the Save Our Seas 2.0 Act, which were the most comprehensive ocean cleanup legislation in American history. And right now in this committee, we are working on my comprehensive bycatch bill that we introduced last year. We are hoping to mark that up. That will be the most comprehensive bycatch legislation in American history. Healthy oceans are both an environmental priority and an economic necessity, and a national security issue. Tourism, charter fishing, wildlife viewing, and countless small businesses depend on sustainable fisheries and healthy marine ecosystems.

Alaska is also seeing exciting innovation through our growing mariculture industry, where kelp and shellfish growers are creating new opportunities and jobs in coastal communities. Science and data collection are foundational to the long-term success of the American blue economy. Fishery surveys and stock assessments support sustainable fisheries management, and that is NOAA’s key mission. And this committee reminds them of that very regularly.

Likewise, hydrographic services, including coastal mapping, charting, and biometric surveys, are essential for safe navigation, commerce, and maritime operations across every sector of the American blue economy. Advancing our blue economy also requires

strengthening America's maritime transportation network. Ports, marine highways, vessels, terminals, and logistics systems are essential to moving goods, supporting coastal states, maintaining resilient supply chains while enhancing our national security.

That is why the administration's Maritime Action Plan is so important. Strengthening America's maritime transportation will require long-term investment, workforce development, and strong public-private partnerships that improve port capacity, modern infrastructure, support domestic vessel operators, and ensure reliable transportation networks for coastal communities within and across states.

Tourism is another driver of the American blue economy. Visitors bring significant revenue directly to our local communities, making it important that America remains competitive as a global destination. That is why I introduced the VISIT USA Act to fully fund Brand USA, the public-private partnership responsible for promoting the United States as an international travel destination.

Ultimately, this all comes back to people. The blue economy supports millions of Americans; fishermen, processors, mariners, sport fishermen, welders, scientists, engineers, military personnel, charter operators, tourism workers, and small business owners across the United States. Yet workforce shortages remain one of the great challenges across nearly every sector.

We are serious about advancing the blue economy. We must invest in workforce development, training, apprenticeships, and educational opportunities to prepare the next generation of maritime professionals. The United States possesses some of the richest ocean resources in the world, the best-managed fisheries in the world. With the right investments, policies, and partnerships, we can unlock the full potential of America's blue economy while strengthening our economic and national security and supporting coastal communities for generations to come.

I look forward to hearing from our witnesses today, many of whom traveled far from the great state of Alaska like I did last night, and to opportunities ahead, challenges they face, and the policies needed to ensure a strong and prosperous maritime future and blue economy for America.

I now recognize the Ranking Member for any opening statement she may have. Thank you.

**STATEMENT OF HON. LISA BLUNT ROCHESTER,
U.S. SENATOR FROM DELAWARE**

Senator BLUNT ROCHESTER. Thank you, Chairman Sullivan, and thank you so much to our witnesses for being here. We look forward to your testimony.

Delaware may be small. You mentioned that you have millions of lakes, and our colleague from Minnesota has thousands of lakes. We have tens of lakes. We're small, but we're mighty. We are urban, suburban, rural, and coastal. And because of that, this conversation is particularly important to my state as well as our country, because coastal communities like the ones that call Delaware home rely on the maritime or blue economy.

My home state sits on the Atlantic Ocean between the Chesapeake and Delaware Bays, putting us in a perfect location to drive

innovation and opportunity in the blue economy, and we do. The University of Delaware, Delaware State University, and Delaware Technical Community College collaborate on groundbreaking maritime marine research, underwater robotics, and coastal infrastructure.

Our growing aquaculture industry continues to create new jobs while providing healthy, sustainable sources of food. Thanks to funding from a Port Infrastructure Development Program grant, the Port of Wilmington is about to begin an historic expansion that will quadruple, quadruple its capacity. And millions of visitors head to The First State each year to enjoy our pristine beaches, bays, and coastline.

All told, Delaware coastal economy supports over 100,000 jobs, generates over \$22 billion in economic output, and is growing over five times faster than the rest of our state. But this isn't unique to my state. The blue economy is a huge driver of economic growth and job creation across the United States. NOAA estimates that the marine—the marine economy contributes over \$500 billion in GDP annually.

Unfortunately, the administration has stifled and in some cases refused to provide our coastal communities with the support they need to thrive. Proposed NOAA budget cuts of over \$1 billion which will undercut the agency's critical mission to support sustainable fisheries and give coastal communities the tools they need to thrive. The administration terminated or withdrew roughly \$672 million in port infrastructure development grants meant to support the offshore wind industry, delaying critical investments in my state and the expansion of cheap and—cheap and sustainable energy at a time when Americans need it most.

And they pushed an unprecedented Jones Act waiver that will further undermine American shipping competitiveness while doing little to address the inflation and energy crisis Americans are experiencing. And while this—and while this administration has correctly identified our vulnerability to Chinese-made port equipment, they imposed tariffs without any plan to support domestic industries and bring critical manufacturing jobs home.

So while I commend the administration for trying to set a vision to maintain economic competitiveness and ensure national security, the actions that I have seen miss the mark for our country and our needs right now. We can all agree we need to invest in and grow our maritime industrial base. And what I'm hoping to get out of today's hearing is a bipartisan path forward to a better—to better support our coastal communities and improve our national and economic security. And I look forward to the conversation, and I yield back.

Senator SULLIVAN. Thank you, Senator Blunt Rochester. And speaking of national economic and national security, we have the Chairman of the Armed Services Committee here. I'm very honored. Mr. Chairman, would you like to say a few words? Also the Senator from Mississippi knows a little bit about the blue economy.

**STATEMENT OF HON. ROGER WICKER,
U.S. SENATOR FROM MISSISSIPPI**

Senator WICKER. Well, it's hard to tell Dan Sullivan no. I had declined to make a statement, but I do think now I'll read a 5-minute statement in its entirety.

[Laughter.]

Senator WICKER. No, let me just say, indeed, the domestic maritime industry has everything to do with national security, as I hope our distinguished panelists will point out in some of their testimony. I have a few points to make. I may try to do those during questions, but I do appreciate the comments of the distinguished Chair and the distinguished Ranking Member, and I yield.

Senator SULLIVAN. Thank you. Well, we have some distinguished witnesses, and I'd like to introduce them. Mr. Tommy Sheridan, he's the Director of the Alaska Blue Economy Center at the University of Alaska Fairbanks. Mr. Sheridan has lived in Alaska for over two decades, focusing on the commercial fishing industry and other elements of the blue economy. As the Director, Mr. Sheridan focuses on growing the Alaska blue economy through balancing stewardship and sustainable use of our marine resources, including growing workforce development and mariculture initiatives across the state.

Next, we have Mr. Jeremy Woodrow, Executive Director of the Alaska Seafood Marketing Institute. Mr. Woodrow is a born and raised Alaskan whose family has commercially fished in Southeast Alaska for over five decades. He has practiced marketing and public relations in the fields of seafood, State and local government throughout Alaska since 2002.

We also have Mr. Nathan Wardwell, Managing Partner of JOA Surveys. Mr. Wardwell has more than 20 years of experience measuring water levels and vertical datums. He brings extensive knowledge and expertise in coastal surveying, an essential part of maintaining our ability to access and navigate our coasts and waterways safely.

And finally, we have Mr. Clayton Heil, Vice President of Global Government Relations at Crowley Maritime Corporation. Mr. Heil leads the company's engagement with Federal, State, and local and international government stakeholders on policy and regulatory matters affecting its transportation, logistics, and energy in maritime operations.

Welcome again to our witnesses. You will each have five minutes to deliver an oral statement. A longer written statement will be included in the record, and we will begin from left to right here, beginning with you, Mr. Sheridan. You have the floor.

**STATEMENT OF TOMMY SHERIDAN, DIRECTOR,
ALASKA BLUE ECONOMY CENTER (ABEC),
UNIVERSITY OF ALASKA FAIRBANKS (UAF)**

Mr. SHERIDAN. Thank you, Chairman Sullivan, Ranking Member Blunt Rochester, and distinguished members of the Committee. Thank you truly for this opportunity. It's an honor to be with you here today.

My name is Tommy Sheridan, and I do serve as the Director for the Alaska Blue Economy Center at the University of Alaska Fair-

banks. However, the testimony is provided in my personal capacity as a parent to two Alaskan schoolchildren and as a resident of coastal Alaskan communities these past 24 years.

Several years ago, deep in the Alaskan bush, I was attacked by a brown bear. When a bear charges, instinct screams at you to run, but if you run, you could die. Survival depends on preparation, tools, and the grit to stand your ground. I survived the attack and it fundamentally changed how I look at resilience.

Today, our coastal towns face their own existential crisis. We are losing young families to economic stagnation and rising costs. Right now, the instinct for the next generation is to do what makes sense in a panic: turn around and leave. But when families leave coastal Alaska, we don't just lose a line on a census report. We lose a classroom. We lose a volunteer firefighter. We lose our future.

For over 20 years, I've worked in fisheries management and workforce development in Alaska. My wife and I are raising our kids in coastal Alaska. This isn't an abstract policy debate for us, it's survival. To stop the flight, we must change the horizon. We must imagine an Alaska where science, fisheries, workforce development, and innovation work together so the next generation can build thriving futures in coastal communities.

For decades, we've viewed Alaska's blue economy largely through resource extraction. It is our backbone. But the future is a knowledge-based economy driven by data, technology, and collaboration. Our crisis isn't just tied to an abundance of fish. It is a gap in connectivity. We have incredible traditional industries alongside emerging frontiers like mariculture and marine technology. To bridge them, I believe that we must start at the very beginning with K through 12 education.

A quiet revolution is already happening in Alaska. Tribal partners, schools, and community and industry leaders are joining forces. Programs like Science Olympiad, Teaching Through Technology, and Prince William Sound College prove that when you give a K through 12 student a drone or a data set, they don't just learn STEM, they see a career. They realize that marine science happens on the boats and docks right outside their front door. When we invest in local education, we actively build the world we need to see.

But a bridge cannot stand without pillars. Our fisheries management system relies on world-class data. To keep Alaska leading, we must solidify partnerships between NOAA, universities, and tribal organizations. Senator Sullivan, your focus on maritime infrastructure has laid the foundation, and now we must build the superstructure.

I urge the Subcommittee to support four pillars. First, investment in K through 12 STEM and local workforce development. Second, funding for fishery science and NOAA partnerships. Third, expanded community-based education and applied research. Fourth, innovation to ensure our communities remain economically unshakeable.

You don't survive a crisis by running away. You survive by equipping yourself to face it head-on. We do not need to abandon our heritage to embrace the future. We need to arm our youth with the tools to build it. So let us choose to invest and let us finalize

a reality where we no longer have to just imagine an Alaska where science, fisheries, workforce development, and innovation work together so the next generation can build thriving futures in coastal communities. Thank you. And I welcome your questions.

[The prepared statement of Mr. Sheridan follows:]

PREPARED STATEMENT OF TOMMY SHERIDAN, DIRECTOR, ALASKA BLUE ECONOMY CENTER (ABEC), UNIVERSITY OF ALASKA FAIRBANKS (UAF)

Chairman Sullivan, Ranking Member Blunt Rochester, and distinguished Members of the Committee, thank you for the opportunity to participate in the Subcommittee on Coast Guard, Maritime, and Fisheries Hearing on “The Blue Economy: Advancing American Fisheries, Maritime Industry, and Coastal Economies.” It is truly an honor to provide you with this written testimony.

My name is Tommy Sheridan, and I serve as the Director for the Alaska Blue Economy Center (ABEC) at the University of Alaska Fairbanks (UAF). ABEC is housed administratively in the university’s College of Fisheries and Ocean Sciences, or CFOS, where our world-class faculty educates future leaders in fisheries and marine science, while addressing pressing issues in aquatic ecosystems from the Arctic to Antarctica. ABEC’s role is to connect capacities throughout the University of Alaska, including CFOS, with problems, needs, and opportunities relating to the state’s blue economy. I come to you today with over two decades of experience living and working throughout and alongside Alaska’s blue economy, with experience as a hatchery manager in the state’s private nonprofit salmon fishery enhancement program, as a fishery manager for the State of Alaska Department of Fish and Game, in addition to roles in the seafood processing sector, most recently serving in a variety of capacities in academia. This written testimony and my accompanying oral comments are provided to you through my personal capacity as a private citizen, as a parent to two Alaskan schoolchildren, and as a resident of coastal Alaskan communities for the past 24 years.

Introduction

Alaska’s blue economy is as significant as the state is large. Alaska is about one-fifth the size of the contiguous United States, and if you overlaid a map of Alaska onto the “Lower 48,” it would stretch from the West Coast to the East Coast. Alaska’s coastline is equally immense and complex—it is longer than the coastlines of all other 49 U.S. states combined. The State of Alaska holds an abundant supply of natural resources including, among others, energy, mineral, timber, and seafood, presenting the country with unique opportunities for economic development and national security for generations to come.

Alaska is the fifth largest oil producing state in the country, and Alaskan natural gas reserves account for over 15 percent of the total proven gas available in the United States. Alaska holds over 56 percent of the total U.S. marine energy potential, and is home to significant hydroelectric and geothermal energy sources. Alaska is also a recognized global leader in microgrid technology, hosting an estimated 10 percent of all microgrids globally, and 50 percent of all microgrids in the United States. Alaskan oil and gas production and associated activities are a linchpin for the state’s blue economy, supporting over 45,000 direct, indirect, and induced jobs statewide.

Alaska’s seafood industry continues to be one of Alaska’s most important economic drivers, contributing about 7 percent to Alaska’s gross domestic product (GDP), generating over \$5 billion in economic activity, and supporting more than 41,800 jobs. Alaskan seafood harvests account for roughly 63 percent of total U.S. seafood landings, producing more wild-caught seafood than all other states combined. For communities such as Cordova, where I’ve lived for 16 years, this economic activity is the lifeblood of the community, with associated taxes paying for critical services such as schools, harbors, and roads.

Alaska’s tourism industry is considered a renewable natural resource and is a major contributor to Alaska’s blue economy, generating \$5.6 billion in total economic impact in recent years, and supporting 48,000 jobs in Alaska. With recent and pending infrastructure investments in Whittier, Seward, Nome, and elsewhere, expectations are for future growth. Travelers are increasingly prioritizing nature, safety, open landscapes, and immersive outdoor experiences. Alaska’s glaciers, fjords, wildlife, national parks, Indigenous cultural experiences, and increases in luxury expedition offerings are luring more visitors to Alaska, with a record 2.7 million out-of-state visitors traveling to Alaska between May and September 2025. Alaskan communities are collaborating with visitor industry leaders to develop innovative ap-

proaches, such as regenerative tourism, to ensure that this growth maximizes benefits to the state while preserving its inherent characteristics and value.

Last, but not least, Alaska's construction industry is a key part of the state's blue economy, making up one of the largest sectors in the state, employing over 20,000 people, and accounting for over \$6.5 billion in economic output annually. Federal spending acts as a major catalyst for Alaska's construction industry, and with current and projected construction projects, including multi-billion dollar developments on the North Slope, Federal port and shipyard upgrades, and massive transportation and pipeline expansions, the Alaska Department of Labor and Workforce Development anticipates at least 17,260 new skilled trade construction workers will be needed in Alaska by 2028.

These industries, and others such as healthcare, mining, and state and local government, are integral components to Alaska's blue economy. However, Alaska's greatest asset is its people—Alaskans embody the grit, resilience, and independent spirit necessary to thrive in this Last Frontier, making them the true foundation for the state. And, unfortunately, that foundation is cracking.

Alaska's workforce challenge

Despite Alaska's geographic prowess and abundant resources, the state's population has been among the country's smallest since statehood in 1959. With a population of approximately 738,000 residents (in 2025), Alaska is the third-least populous state in the U.S., and the most sparsely populated state in the country. Of relevance to blue economy development, contributing factors to the state's workforce challenge include a shrinking working-age demographic, which has declined by over 34,000 people over the past decade due to an aging population, declining birth rates, and net migration (the number of people who move to Alaska in a given year, minus the number who leave). According to the Alaska Department of Labor and Workforce Development, the prime working age of Alaskans (aged 18 to 64) reached its lowest level (449,171 people in 2024) since 2008, and Alaska's net migration has been negative for 13 consecutive years. Alaska's K–12 student enrollment has also declined by more than 10,000 students since 2017 from a then-total of just over 130,000 students, further reducing the potential for a "homegrown" workforce, and all the benefits this provides.

In the absence of a local Alaskan workforce, employers must increasingly turn to nonresident workers. According to the most recent data available, the number of out-of-state workers has continued to rise in recent years, is at its highest level in over 30 years, and is nearing an all-time high. According to the Alaska Department of Labor and Workforce Development, almost 23 percent of non-federal jobs in Alaska were held by non-Alaskans who earned approximately \$3.8 billion in 2024, or, in other words, about 17 percent of every dollar earned from a non-federal job is leaving the state. Among the largest blue economy industries in the state, the seafood industry saw the highest percentage of non-resident workers at 81.5 percent of its workforce, which was the second highest percentage on record for the industry. The Alaskan oil and gas industry employed 40.5 percent nonresident workers, in a sector that pays some of the highest average wages in the state. A variety of visitor-related industries (including restaurants, hotels, air transportation, and tour operators) hired a nonresident workforce that comprised 35.2 percent of its total employment in 2024, and the Alaskan construction sector workforce was 23.4 percent non-resident that same year.

I believe, and evidence suggests, that an expanded Alaskan-grown workforce would be a critical economic engine for the state, offering benefits ranging from reduced employee turnover to long-term community stability. Local Alaskan workers are more likely to remain in the state long-term relative to nonresident workers, thereby reducing high recruitment costs associated with out-of-state hires common to remote coastal and seasonal industries, such as seafood processing and healthcare. Further, wages earned by Alaskan employees are spent locally, thereby supporting small businesses in the communities where they live. Alaskan workers also possess unique understandings of local climate, geography, and cultural nuances, which are essential for resource development activities, tourism, and other rural services. Ultimately, by providing rewarding career paths where they live, it is hoped that an increased focus on retaining "homegrown talent" can be a boon for Alaska's blue economy, and its communities.

Alaskan solutions

To stop the flight of young Alaskan families leaving our state, we must change the horizon. *We must imagine an Alaska where science, fisheries, workforce development, and innovation work together so the next generation can build thriving futures in coastal communities.*

In their 2021 book on developing a workforce for the New Blue Economy, Liesl Hotaling, Rick Spinrad, and numerous contributing authors, provide insights on how the U.S. can build off of traditional blue economy industries, such as oil and gas, shipping, fishing, and tourism, to a reenvisioned economy centered on data, information, and knowledge. The authors argue that this transition will require innovative approaches to technology, skills acquisition, and talent development. I argue that Alaska's workforce struggles and abundance of opportunities make it the ideal testing ground for these innovations, and highlight several here that are well underway in the state.

The authors assert that K–12 STEM (science, technology, engineering, math) education must move away from a traditional approach akin to a history course, where students memorize dates and accomplishments, to hands-on approaches where students learn practically, in collaborative learning environments, using technology-based problem-solving. This approach is alive and well in Alaska, where community-based scientific organizations such as the Sitka Sound Science Center and Prince William Sound Science Center have bridged the gap between traditional research and the implicated communities, and have grown to include experiential learning opportunities for students both young and old (“K through grey”). These organizations work with and alongside traditional resource managers, university partners, and both in and outside of local school districts, oftentimes incorporating citizen science opportunities into their environmental education.

The authors further recommend intentional inclusion of workforce awareness and workforce preparation into K–12 STEM programs, regardless of where they occur. At the University of Alaska Fairbanks, Alaska Science Olympiad, and Teaching Through Technology (T3) work with middle school and high school students across the state of Alaska, where students are exposed to skills training aligned with Alaskan industry needs and standards, through a variety of skills assessments, tailored curriculum, and badging or certification programs. In Cordova, students in these programs have worked with Alaska Blue Economy Center (ABEC) and Cordova Chamber of Commerce to connect these opportunities with local and regional stakeholders as they observed real-world career pathways and emerging industries that promise to transform Alaska's blue economy.

Improving access to connectivity and equipment, and addressing diversity, was recommended as well, and I note the role that ANSEP (historically known as the Alaska Native Science and Engineering Program) has played throughout the state for over 30 years as a sequential education model rooted in Alaska Native Values. Upward Bound is a federally funded program designed to help Alaskan high school students from low-income backgrounds and potential first-generation college students succeed academically and prepare for higher education. These programs serve students across the state, with regional hubs facilitating college-prep curriculum delivery, hands-on STEM activities, and cultural enrichment.

Hotaling and Spinrad highlight the need for engagement with and support of community colleges, vocational, and/or trade schools, as a prerequisite to workforce development for the New Blue Economy. In many cases, dual credit programs allow high school students to earn college credit while developing relevant and marketable skills, earning certificates and occupational endorsements along the way, with the potential of earning an Associate's degree simultaneous to their traditional high school diploma. These students are then adequately prepared for direct entry into the workforce, or can pursue additional education in traditional university programs, such as those available at UAF CFOS, albeit with a different skillset than is common among entry-level undergraduate students. Prince William Sound College in Valdez, Alaska, is a notable Alaskan example whereby local high school students can learn from renowned instructors in areas such as Construction Skills, Marine Services Technology, Millwright, Natural Resources Technician, Marine Natural Resources Technician, and Outdoor Leadership. Another notable, relevant, and highly innovative Alaskan program is the Applied Fisheries Program at the University of Alaska Southeast's Sitka Campus, where students are immersed in the exciting and emerging fields of aquaculture and mariculture through their highly regarded Alaska Aquaculture Semester.

Were we to invest in and support our students in these ways, the benefits would be significant, and our industries and communities would be armed with a locally rooted workforce prepared to address the many other complex problems facing Alaska. *If we are to build the state's blue economy, we must build an Alaska where science, fisheries, workforce development, and innovation work together so the next generation can build thriving futures in coastal communities.*

Mariculture glidepath

As Alaskans look to reenvision coastal economies, and potentially repurpose their skillsets and assets towards new industries, mariculture (marine aquaculture of kelp and shellfish) has received significant attention and investment in recent years. The Exxon Valdez Oil Spill Trustee Council invested more than \$30 million in Alaskan mariculture-related projects and infrastructure in October 2021. The U.S. Economic Development Administration (EDA) awarded \$49 million to the “Alaska Mariculture Cluster” under its Build Back Better Regional Challenge (BBBRC) program in 2022. That same year, the Alaska Legislature allocated \$7 million to the University of Alaska to support mariculture research and development throughout the state. Finally, in 2024, the National Science Foundation (NSF) Established Program to Stimulate Competitive Research (EPSCoR) commenced its \$20 million “Interface of Change” project in select communities in northern Southeast Alaska, Prince William Sound, and Lower Cook Inlet, to develop partnerships between researchers, Gulf of Alaska community members, Tribes, educators, and entrepreneurs. Through these connections, project participants have worked collaboratively to investigate the resilience of marine species that are critical to the subsistence way of life as well as developments in the mariculture economy in the Gulf of Alaska.

Leveraging this momentum and these resources, and by following guidance laid out in the Alaska Mariculture Workforce Development Plan, the Alaska Blue Economy Center at UAF has partnered with Prince William Sound College (at the University of Alaska Anchorage) and the Applied Fisheries Program (at the University of Alaska Southeast) in developing an inspirational “glidepath” for mariculture-related workforce development in the state. Through these efforts, Alaskan middle school and high school students were introduced to mariculture through Science Olympiad and Teaching Through Technology, respectively, and were provided with opportunities for learning and potentially for direct entry into the state’s developing mariculture industry, along with opportunities for postsecondary vocational-technical education and/or matriculation into baccalaureate programs. Although this “glidepath” was developed for the state’s nascent mariculture industry, we believe that this approach can be modified and adopted for needs and opportunities in the state’s oil and gas industry, traditional seafood industry, visitor industry, and construction industry, and elsewhere.

Collaboration is key (capacity building)

Alaska’s blue economy succeeds when we invest in people, particularly K–12 students, connecting science, education, workforce development, and sustainable coastal industries so future generations can survive and thrive. In Alaska, these investments have always involved external partners and partnerships, such as those with the Federal government and its agencies, both U.S. and international academic partners, and leaders from around the country and beyond, well before the phrase “blue economy” was first prominently introduced by Belgian economist Gunter Pauli in 1994. Internal collaboration in Alaska is equally essential for economic development in the state, as its vast geography and complex land ownership require diverse groups to work together. Partnerships between Alaska Native Corporations, municipalities, regional organizations, and state entities are vital to building resilient industries and communities.

These same approaches have been implemented at ABEC, albeit on a smaller, and oftentimes more local scale. For example, in 2022, the City of Valdez partnered with ABEC to support the city’s interests in mariculture development and the broader blue economy, with a goal of building capacity at ABEC, and helping to connect the City and its stakeholders with beneficial capacities at UAF. Located in Southcentral Alaska, Valdez is a seamlessly connected hub accessible by land, air, and sea. Perched along miles of the pristine, clean, and deep waters of Prince William Sound, Valdez enjoys easy access to Alaska, the Arctic, and the world. Its strategic location allows Port of Valdez to be a gateway to Alaska’s Interior, the Arctic, the U.S. Pacific Northwest, and the Pacific Rim. With direct access to Alaska’s road system, as a regular stop on the Alaska Marine Highway System, and as the southern terminus of the Trans Alaska Pipeline System, the Port of Valdez ensures unparalleled access to the state and world beyond. As I (Sheridan) am moving to Valdez in 2026, it is hoped that ABEC can be of greater service to Valdez and its interests, including those pertaining to port and harbor infrastructure development, and discussions surrounding potentially home-porting U.S. Coast Guard Fast Response Cutters, ice-breakers, and joint interagency operations. Leaders across Alaska, including those in Valdez, celebrated the Senate’s passage of the Fiscal Year 2026 National Defense Authorization Act (NDAA), which includes the Coast Guard Authorization Act of

2026, and are grateful to Senator Sullivan and this Committee's work on that legislation.

Successful outcomes from this unique municipal-university relationship between ABEC and the City of Valdez include the Alaska Mariculture Cluster (AMC) being awarded \$49 million through the Economic Development Administration's (EDA) Build Back Better Regional Challenge grant program, which benefited from instigation and support by the city, including a \$6 million matching resource from the City in support of the AMC application. Further, ABEC catalyzed and supported of K-12 STEM programming in the local school district, including Science Olympiad and T3. ABEC has also worked closely with Prince William Sound College over the years on a variety of initiatives, especially mariculture.

External relationships made possible through federally funded university initiatives have also been beneficial to ABEC's development, and hold promise for the broader blue economy in the state. For example, ABEC has benefitted from funding through the Alaska Regional Collaboration for Technology Innovation and Commercialization (ARCTIC) Program. ARCTIC is sponsored by the Department of the Navy, Office of Naval Research (ONR), and is housed at the Alaska Center for Energy and Power (ACEP) at UAF. The ARCTIC Program is a partnership designed to promote capacity building and cooperation between Alaska and the Arctic and Pacific regions through advancements in energy technology through resiliency research, and technology development and deployment. ARCTIC's work to explore and establish Community Innovation Hubs in communities like Cordova and Kotzebue holds promise as testbeds for concepts and technologies of likely benefit elsewhere in the state. Similarly, ABEC has worked with the RISE-UP Program, which is another ONR-funded project underway in Alaska as part of a tri-state initiative uniting Rhode Island, Alaska, and Hawai'i, connecting education, research, and industry to accelerate ideas into real-world defense and commercial impact. Both programs have a core mission of building capacity within the communities they serve, the likes of which bode well for blue economy development in Alaska.

I also wish to illuminate the opportunity for ocean-based economic development in coastal states and communities through the support and development of increasingly successful ocean cluster models. The movement towards clusters is exemplified by organizations such as the Iceland Ocean Cluster, Maritime Blue in Seattle, the Oregon Ocean Cluster, TMA BlueTech in San Diego, the Rhode Island Ocean Tech Hub, along with new state efforts in Maine, Hawaii, and the Great Lakes. Academic-based development underway at schools such as Texas A&M University Galveston, the University of Southern Mississippi, and Oregon State University, are all good examples of public seed funding at the state level that is leading to systemic change and blue economy development.

These efforts stem from increasing recognition that ocean industries are among the fastest growing economic opportunities globally. Organizations such as the World Bank and the European Union have projected the value of the global blue economy will exceed \$3 trillion by 2030. And in addition to growth in traditional industries such as seafood, shipping, and energy development, emerging sectors such as marine biotechnology, coastal resilience, mariculture, and innovations in boatbuilding represent massive development potential. The Ocean Regional Opportunity and Innovation (Ocean ROI) Act of 2025 (S. Bill 1392) would provide the investment needed to develop the blue economy in Alaska, and elsewhere. Ocean ROA aspires to establish a Federal Blue Economy strategy, creates Ocean Innovation Clusters in each National Marine Fisheries (NMFS) region, would grant up to \$10 million per cluster through 2030, and requires coordination among the EDA, National Oceanographic and Atmospheric Administration (NOAA), and Sea Grant.

Finally, I'll end with encouragement that we strive to develop Alaskan leaders, and the organizations they work for and through. In 2008, the renowned American political scientists Ed Weber and Anne Khademan describe the role that collaborative capacity-builders (CCBs) play in fostering the transfer, receipt, and integration of knowledge across networks, which can build long-term collaborative problem-solving capacity strong enough to address complex public, or wicked, problems, such as many that are facing Alaska today. Weber and Khademan define a CCB as someone who has been assigned a lead role in a network's problem-solving activities through the individual's legal authority, whose expertise is valued within the network, and who has a reputation as an honest broker. Although public managers are almost always involved with such networks, Weber and Khademan contend that CCBs do not always need to be public managers. In my opinion, any effort to identify and foster CCBs in Alaska's blue economy is essential to its development, and to the future of the state. An interdisciplinary PhD program is underway at UAF that aspires to develop such Alaskan leaders, drawing from pools of "changemakers" in a variety of fields. This program offers its students the opportunity to shape a

dynamic curriculum that aligns with their unique goals and passions. This flexible and innovative program allows students to design a doctoral degree that spans multiple disciplines, going beyond the traditional offerings of the university, and I believe that such efforts can help to build and sustain Alaska's blue economy into the future.

In closing, I encourage this subcommittee to support four pillars: *first*, investment in K-12 STEM and local workforce development; *second*, funding for fisheries science and NOAA partnerships; *third*, expanded community-based education and applied research; and *fourth*, innovation to ensure our communities remain economically unshakeable.

So, let us choose to invest, and let us finalize a reality where we no longer have to just *imagine an Alaska where science, fisheries, workforce development, and innovation work together so the next generation can build thriving futures in coastal communities*.

Chairman Sullivan, Ranking Member Blunt Rochester, and distinguished Members of the Committee and staff, thank you once again for your invitation to testify here today, and I look forward to answering any questions you may have.

Senator SULLIVAN. Thank you, Mr. Sheridan. Mr. Woodrow.

**STATEMENT OF JEREMY WOODROW, EXECUTIVE DIRECTOR,
ALASKA SEAFOOD MARKETING INSTITUTE**

Mr. WOODROW. Thank you, Chairman Sullivan and Ranking Member Blunt Rochester and distinguished members of the Subcommittee. Appreciate the opportunity to testify with you today.

My name is Jeremy Woodrow, and I serve as Executive Director for the Alaska Seafood Marketing Institute, also known as ASMI. ASMI is a public-private partnership between the state of Alaska and the seafood industry. Our mission is to increase the economic value of the Alaska seafood resource through marketing, education, and outreach. We work domestically and in more than 50 international markets to build demand for Alaska's wild, sustainable seafood, supporting fishermen and processors, and strengthening the global reputation of the Alaska seafood brand.

As the Chairman said, the Alaska seafood industry is foundational not only to Alaska's economy, but to the Nation's blue economy. Seafood is Alaska's largest private sector employer, supporting over 40,000 jobs and generating more than \$5 billion in added economic value. Nationally, Alaska accounts for roughly two-thirds of the U.S. commercial seafood landings and supports more than \$10 billion in economic activity.

But what truly sets Alaska apart is our dedication to sustainability. Our fisheries are managed under a science-based precautionary system that is enshrined in Alaska's Constitution. Sustainability is not just a marketing claim, it's a commitment to the future. It is reflected in every part of our industry, from our multigenerational fishing families to strict management practices, full resource utilization, and rigorous third-party certification. This model has allowed Alaska to avoid resource depletion and remain a global leader in responsible fisheries.

To Alaskans, sustainability means that Alaska's seafood resource, fishing families, coastal communities, and way of life will continue to thrive for generations to come. Alaska seafood is also a major contributor to global food security. Alaska seafood can be found in over 90 countries, providing high-quality wild protein to consumers around the world.

Key markets like the European Union and Japan directly rely on Alaska products, while other countries such as China and those in

Southeast Asia play important roles in processing and global distribution. However, the global seafood marketplace is ever-evolving, increasingly competitive. Alaska producers face significant pressure from foreign competitors, particularly Russia, where lower costs and less stringent regulations allow products to enter global markets at artificially low prices and frequently through indirect channels.

At the same time, U.S. producers face a growing web of tariff and non-tariff barriers. Uneven trade policies, complex certification requirements, and new systems like the European Union's catch traceability platform create additional burdens for responsible producers, often without effectively targeting bad actors.

Here at home, Alaska seafood must also compete against imported products that are frequently produced under weaker environmental and labor standards. Maintaining a fair and competitive domestic market is critical to our Nation's food security and supply chain integrity. Federal programs have been essential in helping address these challenges.

USDA Seafood Purchasing Programs provide stability during market disruptions while delivering nutritious seafood to American families. Marketing investments such as the Market Access Program have helped ASMI expand global demand and build brand recognition, and NOAA's Saltonstall-Kennedy grants have supported innovation, efficiency, and product development across the industry.

The America First Trade Promotion Program offers additional opportunity to increase demand for Alaska seafood and other products globally. We also appreciate the establishment of the USDA Office of Seafood, which represents an important step toward better coordination and recognition of seafood within Federal policy.

Looking ahead, continued Federal engagement and support will be critical. Investments in science, innovation, market development, infrastructure, and trade equity are all necessary to ensure that U.S. seafood producers can continue to compete on a level playing field.

Alaska seafood tells a uniquely American story, one of stewardship, resilience, and leadership. With a continued partnership of Congress and Federal agencies, we have an opportunity to sustain the success and build upon this incredible maritime history through supporting jobs, strengthening food security, and reinforcing the United States' position as a global leader in the production of wild, sustainable seafood.

Thank you for your time today and your commitment to our Nation's seafood industry. I look forward to working together to address these opportunities and challenges, and I welcome any questions you may have.

[The prepared statement of Mr. Woodrow follows:]

PREPARED STATEMENT OF JEREMY WOODROW, EXECUTIVE DIRECTOR,
ALASKA SEAFOOD MARKETING INSTITUTE

Dear Chairman Sullivan, Ranking Member Blunt Rochester, and Members of the Subcommittee:

On behalf of the Alaska Seafood Marketing Institute (ASMI), thank you for the opportunity to provide testimony on the critical role of the Alaska seafood industry

in strengthening our Nation’s coastal economies, advancing global sustainability leadership, and supporting American food security and trade competitiveness.

ASMI is a public-private partnership between the State of Alaska and the seafood industry. Our mission is to increase the economic value of Alaska seafood through marketing, education, and outreach. We work domestically and in more than 50 international markets to build demand for Alaska’s wild, sustainable seafood, supporting fishermen and processors, and strengthening the global reputation of the Alaska Seafood brand.

The Alaska seafood industry is a cornerstone of both Alaska’s economy and the broader United States seafood sector. Seafood is Alaska’s largest private-sector employer, supporting tens of thousands of direct and indirect jobs across harvesting, processing, transportation, and distribution. The industry adds \$5.2 billion annually in economic value within Alaska (about 7 percent of Alaska’s GDP), making it one of the most important natural resource sectors in the state.

Nationally, Alaska seafood generates over \$10 billion in economic output and accounts for approximately two-thirds of total U.S. commercial seafood landings by volume. These fisheries supply high-quality, wild, and sustainably harvested protein to domestic and international consumers. From small rural communities to major ports, Alaska’s fisheries sustain livelihoods, support infrastructure investment, and contribute to food resilience in the United States.

Alaska sets the global standard for well-managed, sustainable fisheries. Wild seafood is one of Alaska’s most precious resources, and the state goes to great lengths to support its continued abundance. From fishermen and processors to scientists and law enforcement officials, sustainability is not only crucial to Alaskans livelihoods but is also a deeply ingrained way of life.

The five pillars of Alaska seafood sustainability tell the story of the important work Alaska does to ensure that sustainable Alaska seafood reaches consumers across the world:

1. **Families & Communities:** Alaska’s fishing families are the heart and soul of Alaska’s seafood industry, handing down fishing practices from generation to generation and believing passionately in the importance of sustainability. The ability for generations of seafood harvesters to thrive from well-managed fisheries is the core definition of sustainability in Alaska.
2. **Social Responsibility:** In Alaska, not only do we protect the fish and the ecosystem, but the people that participate in the fisheries as well.
3. **Fisheries Management:** Alaska represents the gold standard for fisheries management around the world, utilizing a science-based precautionary approach that is built to adapt to ecosystem changes.
4. **Resource Utilization:** Alaska strives to use 100 percent of the resource. Fully utilizing our abundant resources provides greater cultural significance and economic value. Alaska’s fisheries continuously research and invest in new technologies to further improve resource utilization.
5. **Certification:** Third-party certification provides a way for fisheries to verify responsible fisheries management and strong governance. These programs provide market access and consumer confidence across the globe.

The principles of sustainability are embedded in Alaska’s constitution, which mandates that fisheries be managed for sustained yield. As a result, Alaska has avoided many of the resource depletion challenges experienced in other global fisheries.

Alaska seafood is a globally recognized premium product with a broad international footprint that is exported to at least 94 countries worldwide. This extensive reach underscores the industry’s importance not only to Alaska’s economy, but also to the United States’ role in global seafood supply chains.

Alaska seafood maintains a diverse portfolio of export markets shaped by consumption trends, processing dynamics, and trade policies. In 2024, the European Union was Alaska’s largest export market by value, directly importing approximately \$616 million in seafood. Key products included sockeye salmon, Alaska pollock fillets, and surimi. Japan closely followed, importing \$571 million, with strong demand for pollock surimi and roe, salmon roe, sablefish, and Atka mackerel.

China plays a distinct and critical role in the Alaska seafood supply chain. While importing approximately \$566 million in Alaska seafood annually, its primary function is as a re-processing hub rather than a final consumer market. Due to high tariffs, Alaska seafood is generally not competitive for domestic consumption in China. Instead, products are thawed, processed into fillets or portions, re-frozen, and exported to other global markets.

Similarly, Southeast Asia, which includes Thailand, Vietnam, and Indonesia, has emerged as an increasingly important region for seafood reprocessing, helping diversify supply chains. In contrast, markets in the Middle East and North Africa currently import relatively small volumes, representing potential areas for future growth in domestic demand and export to Europe.

The global seafood marketplace is highly competitive, and Alaska faces significant challenges from foreign producers. Particularly concerning is the continued presence of Russian seafood in global markets. Russia remains Alaska's principal competitor for key species such as pollock, cod, salmon, and king crab. Russian producers often benefit from lower production costs and less rigorous regulatory frameworks, allowing them to undercut Alaska seafood prices internationally. Even where direct imports are restricted, Russian-origin seafood can enter global supply chains through third countries, distorting markets and suppressing prices for responsibly harvested U.S. products.

While the United States has implemented a full ban on Russian seafood imports, other major markets, for example the European Union, Japan, and the United Kingdom, have imposed more limited tariffs or sanctions. These uneven measures allow Russian seafood to continue circulating in global markets, distorting price competition and undermining U.S. producers.

At the same time, tariff and non-tariff barriers such as complex import requirements, certification standards, and evolving traceability systems continue to impact Alaska seafood's ability to compete globally. Tariff disparities can place U.S. producers at a disadvantage relative to competitors from countries with preferential trade agreements.

Regulatory measures, certification requirements, and documentation systems are becoming increasingly complex and burdensome. A notable example is the European Union's CATCH system, a digital platform designed to address illegal, unreported, and unregulated (IUU) fishing. While the goal of the system is aligned with U.S. sustainability values, its implementation introduces extreme administrative and logistical challenges for exporters, particularly when requirements overlap with existing U.S. traceability systems. Unfortunately, this system places a bureaucratic burden on good actors, such as Alaska seafood producers, and is a perfect example of a recent non-tariff trade barrier.

The United States remains the largest market overall for Alaska seafood, representing over \$2 billion annually through a combination of domestic landings and re-imported processed products.

However, Alaska seafood also faces increasing competition in the U.S., which is one of the largest seafood-consuming nations in the world and where imports account for the majority of seafood consumed domestically. Alaska seafood therefore must compete with lower-cost imported products, many of which are produced under less stringent environmental, labor, and regulatory standards.

Maintaining a fair but competitive domestic market is essential not only for economic resilience but also for national food security and supply chain integrity.

Federal support has been instrumental in strengthening the value and market position of Alaska seafood both domestically and abroad. USDA Federal seafood purchase programs, such as Section 32, play an important role in supporting the stability and value of Alaska seafood, particularly during periods of market disruption. These purchases provide a dual benefit as they help alleviate supply imbalances and price pressures faced by U.S. fishermen and processors, while also delivering highly nutritious, sustainably harvested seafood to American families.

Continued and expanded use of these programs can help strengthen domestic demand, reinforce food security, and ensure that U.S. seafood producers remain competitive in the face of global market volatility and import pressures.

USDA marketing investments, including long-standing programs like the Market Access Program (MAP) funding and more recent programs such as the America First Trade Promotion Program (AFTPP), have enabled ASMI to expand international marketing and brand recognition, increase consumer awareness of sustainability and quality, and develop new market channels and product forms.

The Alaska seafood industry has also benefited significantly from NOAA's Saltonstall-Kennedy (S-K) Grant Program, which has supported critical promotion, development and marketing investments that might not otherwise occur. These funds have advanced seafood innovation and product development, improved processing efficiency and full resource utilization, and strengthened marketing strategies and consumer education efforts. Targeted investments under S-K deliver measurable returns by driving demand, increasing product value, and supporting jobs throughout the American seafood supply chain from harvesters and processors to distributors and retailers.

ASMI also appreciates the recent establishment of the USDA Office of Seafood, which represents an important step toward more coordinated Federal engagement with the U.S. seafood sector. The creation of this office will help elevate the role of seafood within Federal nutrition, trade, and agricultural policy, ensuring that fisheries are better integrated into national food systems. This enhanced focus will support American harvesters and processors, improve market access, and strengthen the competitiveness of U.S. seafood both domestically and overseas.

The Alaska seafood industry is an essential pillar of the U.S. blue economy by supporting American jobs, strengthening food security, and supplying the world with high-quality, sustainably-harvested protein.

However, this success is not guaranteed. Alaska seafood producers are navigating an increasingly complex and competitive global landscape shaped by uneven trade policies, rising non-tariff barriers, shifting supply chains, and aggressive price competition from foreign producers.

Strategic Federal engagement is critical at this moment. Continued investment in fisheries science, technological innovations, market development, infrastructure and trade enforcement, along with coordinated policy support through agencies like USDA and NOAA, will be essential to maintaining U.S. leadership in sustainable seafood production.

Alaska seafood tells a powerful American story: one of stewardship, resilience, and global leadership. It is a model of how natural resources can be managed responsibly while supporting hardworking Americans, vibrant coastal communities and the national economy.

With continued partnership and support from Congress and Federal agencies, the United States has an opportunity not only to sustain this legacy, but to expand it and, in turn, ensure that American fishermen and processors can remain globally competitive, consumers at home and abroad continue to trust the Alaska Seafood brand, and our fisheries remain among the most sustainable in the world.

Thank you for your leadership and commitment to America's seafood industry.

Respectfully submitted,

JEREMY WOODROW,
Executive Director,

Alaska Seafood Marketing Institute.

Senator SULLIVAN. Great. Thank you, Mr. Woodrow. Mr. Wardwell.

**STATEMENT OF NATHAN WARDWELL, MANAGING PARTNER,
JOA SURVEYS LLC**

Mr. WARDWELL. Chairman Sullivan, Ranking Member Blunt Rochester, and distinguished members of the Subcommittee, thank you for the opportunity to testify today.

I was born and raised in Alaska and raised in a family there and own a small business in Anchorage that employs 15 people. I have worked in the hydrographic services for more than 20 years. That sector that maps the seafloor, measures water levels, and provides the foundational data that makes safe navigation possible. That work has taken my company to every coast of the United States, from the Arctic to the Caribbean to the Great Lakes, and provides the foundational data—excuse me—and almost always in partnerships with Federal agencies.

That experience gave me a broad perspective on how many industries depend on this data and how much is still missing. The simple truth is this: The blue economy cannot function without hydrographic services. Without accurate maps of the seafloor and real-time water level information, mariners cannot safely navigate. The same data that guides vessels safely into port is used to model tsunamis, forecast storm surge, identify critical mineral resources, route undersea fiber cables, and monitor long-term sea level change.

It is the foundation beneath every sector of the blue economy: fishing, shipping, recreation, energy, and national security alike. Yet as of 2024, 46 percent of U.S. coastal ocean and Great Lakes waters remain unmapped to modern standards. In Alaska, that figure is even more striking. 62 percent of more than 1.2 million square nautical miles of Alaska's waters are unmapped.

For a state with more than 33,000 miles of shoreline and the Nation's only access to the Arctic Ocean, that gap is not just a data problem, it is an economic constraint, a safety risk, and a national security vulnerability. Closing it will require not only sustained investment and strong partnerships, but continued innovation in how we collect, integrate, and deliver hydrographic data at a scale that traditional methods alone cannot achieve. Closing that gap requires both government and private industry working together.

The 2019 Presidential memorandum on ocean mapping of the U.S. Exclusive Economic Zone and the shoreline and nearshore of Alaska was an important step in building a plan. But not every port in America yet has the real-time water levels and current bathymetry that mariners need to navigate safely while maximizing their load capacity. And as vessels continue to grow larger, that need only intensifies.

Senator Sullivan, I want to thank you personally for your work to bring more icebreakers to Alaska. I had the privilege of sailing aboard the U.S. Coast Guard Cutter *Healy* in the Arctic during graduate school, an experience that shaped my understanding of how icebreakers underpin our national security, emergency response, and scientific capabilities in ways nothing else can replace.

I also want to thank you, Senator Murkowski, and Senator Cantwell, for introducing the Tsunami Warning Research and Education Act of 2026. In August 2025, a landslide in Tracy Arm, a fjord in southeast Alaska, generated a mega tsunami with run-up reaching nearly 1,600 feet above sea level. My company operated a water level station in an adjacent fjord installed on behalf of the Alaska Department of Natural Resources to provide data for a NOAA program.

That station captured the tsunami in real time, and the data is now part of the scientific record. It exists because someone invested in putting an instrument there and because a State agency, a Federal program, and a private company were working together. That is the case for this investment.

I will leave you with three points. First, hydrographic data is not a government overhead cost, it is the infrastructure the blue economy is built on. Second, delivering hydrographic data at the scale of Alaska demands strong public-private partnerships and continued investment in innovation, from new sensor technologies to modern data frameworks to real-time observing networks that can operate year-round in ice-affected environments. And third, Alaska's 33,000 miles of shoreline and its position as America's Arctic Gateway presents an extraordinary blue economy opportunity, one we can only realize if we invest in knowing what lies beneath the waters.

Thank you, and I look forward to further discussion.

[The prepared statement of Mr. Wardwell follows:]

PREPARED STATEMENT OF NATHAN WARDWELL, MANAGING PARTNER,
JOA SURVEYS LLC

Chairman Sullivan, Ranking Member Blunt Rochester, and distinguished Members of the Committee, thank you for inviting me to participate in today's hearing. It is an honor and I commend you for focusing on the importance of growing the Blue Economy.

My name is Nathan Wardwell, Managing Partner of JOA Surveys, a small business in Anchorage, Alaska providing coastal mapping services nationwide for more than 20 years. After completing graduate studies at the University of New Hampshire in ocean mapping, I have participated in projects from the Arctic Ocean to the Caribbean Sea to the Great Lakes, giving me a regional and national perspective on coastal and maritime geospatial challenges.

Navigation, Commerce, and the Cost of Incomplete Data

Underkeel clearance, the vertical distance between a vessel's keel and the seafloor, is one of the most fundamental safety parameters in maritime operations. Accurately calculating it requires three interlocking systems: high-resolution bathymetry, real-time water levels, and a consistent vertical datum tying them together.

The degree to which authoritative data is available for monitoring underkeel clearance varies from port to port. Consider the Port of West Sacramento and its 43-mile Sacramento Deep Water Ship Channel. Bar Pilots navigating that channel have confirmed that most vessels draft deeply enough to require tidal consideration on every transit, meaning shippers cannot fully load vessels given current depth limitations, and cargo moves at a fraction of each ship's capacity.¹ A real-time water level station tied to a consistent datum was required before pilots could safely navigate the channel while maximizing vessel load capacity.

At the Port of Alaska, with seasonal sea-ice and a 30-foot tidal range, vessels supplying goods to 90 percent of Alaska's population depend on the same authoritative bathymetry and real-time water levels.² Yet across Alaska, marine pilots serving remote coastal communities routinely navigate without current bathymetry or real-time water levels along their routes.

Tracy Arm Landslide: Observation Infrastructure

On August 10, 2025, a landslide above South Sawyer Glacier sent 64 million cubic meters of rock into Tracy Arm fjord, generating the second-highest megatsunami ever recorded, with runup reaching nearly 1,600 feet above sea level.³ Water level stations in Juneau and Endicott Arm detected a tsunami signal generated from the event.⁴ These stations provided the observational record researchers need to reconstruct wave propagation and model future hazards. Without datum-referenced water level stations distributed across Southeast Alaska, that science cannot be done.

The economic consequences of this event are already being felt: five major cruise lines have removed Tracy Arm from their 2026 itineraries, redirecting passengers to Endicott Arm.⁵ Increased cruise tourism in Alaska's fjords increases exposure to exactly these cascading geological risks. Observation infrastructure must grow with the industry.

Western Alaska: The Flood Imperative

When Typhoon Merbok struck the Yukon-Kuskokwim Delta in September 2022, it impacted more than 35 Alaska Native communities along 1,300 miles of coast.⁶ In 2024 the community of Kwigillingok experienced coastal flooding with water levels higher than the community members remember experiencing. The next year Ty-

¹U.S. Army Corps of Engineers, San Francisco District. Sacramento River Deep Water Ship Channel Limited Reevaluation Report—Appendix E: With-Project Economic Analysis (Draft). February 2011. https://www.spn.usace.army.mil/Portals/68/docs/SRDWSC/Appendix_E.pdf

²Don Young Port of Alaska. About Don Young Port of Alaska. Port of Alaska, City of Anchorage. Accessed 2026. <https://www.portofalaska.com/about-us/>

³U.S. Geological Survey. 2025 Tracy Arm Landslide-Generated Tsunami. USGS Landslide Hazards Program, August 2025. <https://www.usgs.gov/programs/landslide-hazards/science/2025-tracy-arm-landslide-generated-tsunami>

⁴Shugar, D.H. *et al.*, (2026). A 481-meter-high landslide-tsunami in a cruise ship-frequented Alaska fjord. *Science*, eaec3187. <https://doi.org/10.1126/science.aec3187>

⁵Travel Market Report. Cruise Lines Pull Tracy Arm from Alaska Itineraries. April 6, 2026. <https://www.travelmarketreport.com/cruises/articles/cruise-lines-pull-tracy-arm-from-alaska-itineraries>

⁶U.S. Geological Survey. Typhoon Merbok Coastal Community Impacts. USGS Supplemental Appropriations for Disaster Recovery Activities. <https://www.usgs.gov/supplemental-appropriations-for-disaster-recovery-activities/typhoon-merbok-coastal-community>

phoon Halong devastated Kwigillingok along with over 40 more communities in the Yukon-Kuskokwim Delta region.⁷ In many of these communities, emergency managers navigate blind and rebuilding efforts are hampered by a lack of observational data. These storms are not unique to Alaska. What remains unique is the real-time observational gap.

GNSS-IR: Innovative Blue Economy Technology

My company has been developing and deploying GNSS Interferometric Reflectometry, GNSS-IR, for water and ice level monitoring in Alaska since 2017, working with local, state, and Federal stakeholders to expand the coastal and river observing networks across the state.⁸ GNSS-IR is a remote sensing technique that measures water and ice levels using reflected satellite signals.⁹ Unlike conventional sensors, GNSS-IR requires no in-water infrastructure, making it well-suited for remote and ice-affected environments. As the Blue Economy grows in the Arctic, this capability becomes increasingly critical. Full-scale adoption requires interagency commitment and investment.

Conclusion

Since the precursor to NOAA's Office of Coast Survey was established by Congress in 1807, our Nation has understood the value of mapping its coasts and waters for navigation, land management, national security, and long-term monitoring. Yet in 2024, 46 percent of U.S. waters remain unmapped.¹⁰ Advancing American fisheries, maritime strength, and coastal economies depends on understanding our ocean and seafloor.

That requires strong public-private partnerships and continued investment in ocean technology. Thank you for this opportunity to testify.

Senator SULLIVAN. Thank you, Mr. Wardwell. And stay tuned on the icebreakers. Might have some more announcements coming up here from the Coast Guard on homeporting icebreakers in Alaska, which is, by the way, the place you would think the Coast Guard would have done that about 50 years ago, putting the icebreakers in the state with the ice. But that's actually never happened. So we're working on that one, too.

Mr. Heil, you're up.

STATEMENT OF CLAYTON HEIL, VICE PRESIDENT, GLOBAL GOVERNMENT RELATIONS, CROWLEY

Mr. HEIL. Chairman Sullivan, Ranking Member Blunt Rochester, and members of the Subcommittee, my name is Clay Heil, and I serve as Vice President of Global Government Relations for Crowley. Thank you for the opportunity to testify.

Crowley is a privately held, U.S. owned maritime logistics and energy company founded in 1892 and headquartered in Jacksonville, Florida. For more than 130 years, Crowley has served commercial and government customers in some of the most difficult environments in the world. Today, our business includes logistics, vessel operations, fuel transportation and distribution, ship assist and escort services, vessel construction management, and government services.

⁷ Alaska Public Media. Officials Say Storm 'Completely Devastated' Western Alaska Communities (Typhoon Halong). October 13, 2025. <https://alaskapublic.org/news/public-safety/2025-10-13/officials-say-storm-completely-devastated-western-alaska-communities>

⁸ Wardwell, Nathan, Drew Lindow, Reece Robinson, and Jim Mitchell. Adventures in Multipath: Extracting Tides & Water Levels from Noise in Alaska. Presentation at the Alaska Geospatial Summit, April 9, 2025. JOA Surveys, Anchorage, AK. <https://joasurveys.com/wp-content/uploads/2025/04/AK-Geosummit-GNSS-IR.pdf>

⁹ Larson, K.M. GNSS Interferometric Reflectometry: A New Tool for Environmental Sensing. GPS Solutions, 2016. <https://doi.org/10.1007/s10291-016-0557-1>

¹⁰ Carter, Nicole T., Laura B. Comay, Caitlin Keating-Bitonti, Eva Lipiec, and Linda R. Rowan. Frequently Asked Questions: Mapping of U.S. Ocean and Coastal Waters. Congressional Research Service Report No. R47623, updated July 29, 2025. Washington, DC: Congressional Research Service. <https://crsreports.congress.gov/product/pdf/R/R47623>

We are also deeply committed to Alaska, where Crowley has operated for more than 70 years. Crowley employs hundreds of Alaskans and supports communities across the state by purchasing, transporting, storing, and distributing the fuels needed to heat homes, operate schools and businesses, fly aircraft, and power the vessels that support Alaska's fishing economy.

In western Alaska, Crowley operates coastal and river barges serving remote communities where maritime transportation is not just a convenience, it is the supply chain. Crowley's work in Alaska demonstrates why this hearing matters. The blue economy is not an abstract policy concept. It's the daily work of fishermen, mariners, shipyard workers, port employees, fuel distributors, tug and barge operators, seafood processors, and the families and communities that depend upon them.

The Jones Act is essential to that system. It ensures that cargo moving between American ports is carried on vessels that are American-built, owned, crewed, and flagged. It also supports the domestic maritime workforce, a U.S. shipbuilding and repair base, and dedicated trade lanes that provide regular, reliable service to American communities.

That reliability is especially important for the fishing industry and for remote markets. Fishing operations depend on steady fuel deliveries, functioning ports, trained mariners, and vessels that can carry—can safely operate in difficult environments. Those capabilities do not appear overnight. They are built through long-term private investment, and the Jones Act gives companies the confidence to make those investments.

Crowley strongly supports the administration's maritime executive order and the bipartisan SHIPS for America Act. Both recognize that the United States must rebuild its maritime industrial base, expand U.S. flag shipping, grow the pool of American mariners, strengthen domestic shipbuilding, and ensure that our Nation has the commercial maritime capacity needed for economic security and national defense.

Those are the right goals, and Crowley is prepared to help meet them. For decades, we have invested in American shipyards, U.S. built vessels, American mariners, port infrastructure, and the domestic maritime services that support American communities. But those investments depend on stable, predictable policy environments. The current Jones Act waiver undermines those efforts.

Crowley recognizes that true emergencies may require carefully tailored waivers. Congress has provided a process for that purpose, and the maritime industry has understood that national defense and emergency response come first. Crowley is proud of its long-standing role supporting national security missions. Our commercial operations employ and train American mariners and provide access to vessels, logistics capabilities, and global transportation networks that support military sealift readiness and crisis response when the Nation needs them.

But broad or recurring waivers that are not tied to a specific vessel need, a specific cargo need, or the actual non-availability of U.S. vessels creates a very different problem. Such waivers send the wrong message at the wrong time. At the very moment the administration and Congress are calling for more U.S. flag vessels, more

American mariners, more shipyard capacity, and more private investment. The waiver invites foreign-flagged vessels into domestic trades and weakens the market certainty needed to build that capacity.

The current waiver has also not solved the underlying energy problem. It does not create new supply or make global tanker markets less volatile. Instead, it shifts cargo away from American vessels and American crews while weakening the long-term business case for the domestic maritime capacity we will need in the next crisis.

Crowley stands ready to work with this committee, the administration, and our partners across the country to strengthen America's maritime economy, support our fishing and coastal communities, and ensure the United States remains a maritime Nation.

Thank you for the opportunity to testify, and I look forward to your questions.

[The prepared statement of Mr. Heil follows:]

PREPARED STATEMENT OF CLAYTON HEIL, VICE PRESIDENT,
GLOBAL GOVERNMENT RELATIONS, CROWLEY

Chairman Sullivan, Ranking Member Blunt Rochester, and members of the Subcommittee. My name is Clay Heil, and I serve as Vice President of Global Government Relations for Crowley. Thank you for the opportunity to testify today.

Crowley is a privately held, U.S.-owned maritime, logistics, and energy company founded in 1892 and headquartered in Jacksonville, Florida. For more than 130 years, Crowley has served commercial and government customers in some of the most difficult operating environments in the world. Today, our business includes logistics, vessel operations, fuel transportation and distribution, ship assist and escort services, vessel construction management, and government services.

We are also deeply committed to Alaska, where Crowley has operated for more than 70 years. Crowley employs hundreds of Alaskans and supports communities across the state by purchasing, transporting, storing, and distributing the fuels needed to heat homes, operate schools and businesses, fly aircraft, and power the vessels that support Alaska's fishing economy. In Western Alaska, Crowley operates coastal and river barges serving remote communities where marine transportation is not just a convenience; it is the supply chain.

Crowley's work in Alaska demonstrates why this hearing matters. The blue economy is not an abstract policy concept. It is the daily work of fishermen, mariners, shipyard workers, port employees, fuel distributors, tug and barge operators, seafood processors, and the families and communities that depend on them.

The Jones Act is essential to that system. It ensures that cargo moving between American ports is carried on vessels that are American-built, owned, crewed, and flagged. It also supports a domestic maritime workforce, a U.S. shipbuilding and repair base, and dedicated trade lanes that provide regular, reliable service to American communities.

That reliability is especially important for the fishing industry and for remote markets. Fishing operations depend on steady fuel deliveries, functioning ports, trained mariners, and vessels that can safely operate in difficult environments. Those capabilities do not appear overnight. They are built through long-term private investment, and the Jones Act gives companies the confidence to make those investments.

Crowley strongly supports the Administration's Maritime Executive Order and the bipartisan SHIPS for America Act. Both recognize that the United States must rebuild its maritime industrial base, expand U.S.-flag shipping, grow the pool of American mariners, strengthen domestic shipbuilding, and ensure that our Nation has the commercial maritime capacity needed for economic security and national defense.

Those are the right goals, and Crowley is prepared to help meet them. For decades, we have invested in American shipyards, U.S.-built vessels, American mariners, port infrastructure, and the domestic maritime services that support American communities. But those investments depend on a stable and predictable policy environment.

The current Jones Act waiver undermines those efforts.

Crowley recognizes that true emergencies may require narrowly tailored waivers. Congress has provided a process for that purpose, and the maritime industry has always understood that national defense and emergency response come first. Crowley is proud of its longstanding role supporting national security missions. Our commercial operations employ and train American mariners and provide access to vessels, logistics capabilities, and global transportation networks that support military sealift, readiness, and crisis response when the Nation needs them. But broad or recurring waivers that are not tied to a specific vessel need, specific cargo need, or the actual non-availability of U.S. vessels create a very different problem.

Such waivers send the wrong signal at the wrong time. At the very moment the Administration and Congress are calling for more U.S.-flag vessels, more American mariners, more shipyard capacity, and more private investment, the waiver invites foreign-flag vessels into domestic trades and weakens the market certainty needed to build that capacity.

The current waiver has also not solved the underlying energy problem. It does not create new supply or make global tanker markets less volatile. Instead, it shifts cargo away from American vessels and American crews while weakening the long-term business case for the domestic maritime capacity we will need in the next crisis.

Crowley stands ready to work with this Committee, the Administration, and our partners across the country to strengthen America's maritime economy, support our fishing and coastal communities, and ensure that the United States remains a maritime nation.

Thank you for the opportunity to testify. I look forward to your questions.

Senator SULLIVAN. Thank you to all the witnesses. That was a great overview of many important topics. The topic of the blue economy itself is kind of broad.

So, Mr. Sheridan, why don't we start with you since you focus on this a lot at UAF, and they have a great program on fisheries and many other things. You work across many sectors of Alaska's blue economy. How do you define the blue economy, and where do you see the greatest opportunities for growth over the next decade, not just in Alaska, but I would say throughout the United States?

Mr. SHERIDAN. Thank you for the question, Chairman Sullivan. I think that your introduction on the blue economy was very good, very inclusive. Blue economy is a very broad and expansive term, and I like to describe it as everything that happens in places like Cordova and Valdez, where I've lived for 16 years now.

In both communities, we have one of North America's largest salmon aquaculture programs. We have renowned commercial fisheries, certainly associated marine shipping. In Valdez, of course, is the terminus for the Trans-Alaska Pipeline and so energy is a big industry in that region. And with its access to the road system, Valdez is positioned to be a significant port for national defense and national security.

So, it really runs the gamut in coastal Alaska. Some of the areas of opportunity that we've been involved with and have been tracking includes making just better use, more full use of the existing infrastructure and resources that we have. With the seafood industry, there has been a lot of interest lately on Icelandic models and the work that's being done there through the Iceland Ocean Cluster to make more full utilization of their cod fishery resource. I think there's opportunity to do that in Alaska.

One example of that that we've been involved with is a discussion around the potential to integrate mariculture into Alaska's salmon hatchery system, for example. That's something that folks

are interested in, in addition to the development of energy in the vicinity of those sites.

Tourism is rapidly becoming one of the largest sectors in Alaska's blue economy. There have been significant port developments in Cordova, Valdez, Whittier, Seward, all in our neighborhood of Prince William Sound, with additional significant investments to come in Nome. And so I think we'll see a growth of that industry in that direction.

But in general, just to answer your question, of course, it's a significant opportunity. Estimates are for the global ocean economy to grow to or beyond \$3 trillion by 2030. And certainly——

Senator SULLIVAN. In the U.S. or globally?

Mr. SHERIDAN. Globally. And certainly much more so in the next decade. So those are a few things that we're tracking and interested in.

Senator SULLIVAN. Right. Mr. Wardwell, you talk about when people hear hydrography and ocean mapping, they may not immediately connect that to economic growth. Can you explain how investments in mapping directly support jobs and economic activity? And additionally, you mentioned that not having mapping done is a national security vulnerability.

I'm sure you recall, a lot of Alaskans did—last summer we had a Chinese research fleet off the coast of Alaska, all summer, that was a spy operation. We all know that, right, and trying to map the floor and find our cables and maybe subroutes. I mean, that's what they were doing. They weren't doing research, wasn't friendly. They were spying on us. So can you talk a little bit about that national security vulnerability as well?

Mr. WARDWELL. Yes, so the ocean mapping and the blue economy obviously are tied together, right? You can't do anything in the—in the ocean without wanting to know or needing to know something about the water depth, whether you're doing construction for a coastal facility or you're trying to identify an area to preserve. One of the—I think the collapse of the Francis Scott Key Bridge is a good example. In order to open up commerce into those ports, you had to map the seafloor to find safe routes for the vessels to come in and out of the port.

Every foot of draft for a vessel equates to additional revenue and profit for companies and more efficient commerce. So those are directly tied to ocean mapping. All of the work from the fisheries and everything else is fundamental to achieving those goals.

From a national security standpoint, I read the news in Alaska, I see the articles about the boats and the Bering from foreign countries. We can't—without understanding our coasts and our seafloor, can't safely navigate, we can't move commerce——

Senator SULLIVAN. We need to understand our coasts and seafloor more than the Chinese understand our coasts and seafloor. Isn't that like an imperative? Like, figure out what we have before they do? And those guys were up all summer last summer trying to figure it out, as you know.

Mr. WARDWELL. Agreed. As somebody in the mapping industry, it's always kind of blown me away that we have—that the moon is mapped better than our oceans on Earth. I think there's some value there.

Senator SULLIVAN. Good. Thank you. Senator Blunt Rochester.

Senator BLUNT ROCHESTER. Thank you, Mr. Chairman. I want to start off with talking about aquaculture. The United States has one of the world's largest ocean economies, yet we still import the majority of our seafood that we consume. Shellfish aquaculture offers economic, environmental, and food security benefits for coastal communities.

So I'd like to start with you, Mr. Woodrow. How can shellfish aquaculture strengthen America's blue economy, particularly in supporting domestic seafood production, coastal jobs, and healthy marine ecosystems?

Mr. WOODROW. Thank you, Ranking Member Blunt Rochester, for that question. I will try to answer your question as best I can. I am a wild fisheries expert when it comes to marketing. We are growing, and no pun intended, our aquaculture sector in Alaska, especially in terms of oyster aquaculture as well as seaweed aquaculture.

I will say that the investment in those industries is really beginning. It has been—they've been around for decades, but they did receive a significant Build Back Better grant that was about \$50 million several years ago to heavily invest more into that industry. As Mr. Sheridan said, we are looking at how we can bridge the gap between our growing mariculture industry and aquaculture industry and our existing coastal economies with our wild capture fisheries.

One thing that's really unique in Alaska is the timing of our fisheries. We have a lot of seafood processing plants that sit empty throughout the year. They're really busy throughout those pulse fisheries, and there are vacancies throughout the year where those can be filled with other fisheries, and that keeps the lights on, keeps the economy going in those small communities, and frankly, it's an opportunity for growth. So that's one area that we definitely need to continue to explore. And that's something that Alaska is doing and trying to be a leader in.

I will say, when it comes to aquaculture as well, is when it comes to wild capture fisheries, for the most part, we look globally, our wild capture fisheries are maxed out, right? We're doing a good job of most of the part of sustainably managing and, you know, and catching those fisheries. If we need to continue to feed the world, we need to find aquaculture as well to feed the world. We need to do it responsibly and we need to look at areas where we can do that responsibly.

And so that's one thing that Alaska is doing and why those fisheries that we're looking at are those aquaculture agriculture fisheries that we're looking at, such as shellfish fisheries, is where we're starting.

Senator BLUNT ROCHESTER. You mentioned just the growing demand both domestically as well as globally but we still see that the industry faces some significant barriers. Could you talk about some of the biggest challenges that are limiting the responsible growth of shellfish, and also what actions that we as Congress or Federal agencies like NOAA or USDA can take to better support the industry?

Mr. WOODROW. Thank you for that question. For Alaska, probably our greatest challenge is always our greatest strength as well, and it's our remoteness. The economy of scale in Alaska is always challenging. We're far away from the rest of the world, so being able to move our product to the rest of the world is costly. Getting product to Alaska to be—to start investing is always costly.

And so we were always looking at ways to try to expand that efficiency, but we need to start small and continue to grow from there. And I can't speak to the rest of the—the rest of that industry across the U.S. because I really am an Alaska expert. But I know that's probably been the most difficult aspect to growing that aquaculture industry in Alaska is really it's the economy of scale and it's the remoteness. It just—it's really, really expensive to do business in Alaska in these remote areas.

Senator BLUNT ROCHESTER. Thank you. I'm going to turn to the Jones Act. I'm concerned by recent actions that the administration has taken to undermine the maritime industry and our global competitiveness in response to energy price inflation caused by the Iran war, we've taken some unprecedented steps of creating a prolonged Jones Act waiver.

And I think it was you, Mr. Heil, that said limited, you know, targeted, that makes sense. After issuing a 60-day waiver in March, the President decided to extend the waiver an additional 90 days as the war continues on. When it is currently set to expire mid-August, the 150-day waiver will be the longest in modern history. And we're seeing just the impacts of this waiver.

It's reported that it's halting a \$1 billion investment. And just last week, we saw a vessel with ties to the Chinese government carrying cargo between U.S. ports. Mr. Heil, how have Jones Act waivers chilled investment in our domestic maritime industry, and how will this affect the workforce?

Mr. HEIL. Well, thank you for the question, Senator. I guess on the workforce part, I'll start with that. We're hearing from our own mariners, U.S. citizens, our mariners who are asking, what does this waiver mean for our jobs long term? If waivers are to continue and reoccur, what does that mean for me and my employment? So that's a concern for us and for our workers.

And you mentioned the Chinese vessel that moved asphalt from Louisiana to Connecticut last week. The Chinese, you know, crude vessel, Chinese-built vessel operating in our territorial waters under a national security waiver, moving asphalt. That's concerning on a variety of levels.

For the investment community, when waivers are extended like this—and this is, as you mentioned, there is no historical parallel for a waiver of this duration or covering this many products, over 600—it causes investment to pull back. Shipyards will kind of in the short term probably not see severe impacts, it's more of the longer term of future investments.

Companies like ours are looking to recapitalize our fleets. If the Jones Act looks unstable, we're not going to do that. For shipyards, U.S. shipyards, they may see orders being canceled. They may see their order book dry up for Jones Act vessels. So I think it's concerning on multiple levels, the duration and the uncertainty that

it brings to the marketplace and to private capital who won't invest in unstable markets.

Senator BLUNT ROCHESTER. Thank you, Mr. Heil. I have more questions, and I don't know if you're going to do a round two. I can submit them——

Senator SULLIVAN. Yes, we will do a round two.

Senator BLUNT ROCHESTER.—for the record. Thank you and I yield back.

Senator SULLIVAN. Chairman Wicker.

Senator WICKER. Thank you, Mr. Chairman. And let me just say that no one has done more for this area of subject matter than Senator Dan Sullivan of Alaska and I very much appreciate the fact that he is a valuable member of the Committee that I chair, the Armed Services Committee, and he realizes, in his capacity as subcommittee chairman on this committee, the inner workings of national security with everything that we've talked about today.

I'm glad the Ranking Member has mentioned the Jones Act, and so I want to continue to try to delve on that. I've always been a big supporter of the Jones Act, and actually the Jones Act was sort of considered holy writ in both parties for a long time. Now we do see a number of people from both ends of the ideological spectrum attacking the Jones Act now.

And I think, Mr. Heil, you would agree that we need to step up our defense of the Jones Act. What is the national security aspect of ensuring that we have a large enough domestic fleet?

Mr. HEIL. Senator, Department of Defense, Department of War have said for decades that the Jones Act is critical for their efforts, not only to provide the mariners and surge capacity requirements that are needed in times of war, also the vessels that are needed that support our U.S. military. We are in the Tanker Security Program. We have three tankers that support Department of Defense assets around the world providing fuel and supplies. That's just one part of the U.S. commercial effort that supports our defense efforts.

Also, the shipyard capabilities are extremely important. We need to maintain our shipyards and having the workers that know how to build commercial ships, those are the same workers that are building our military vessels. So we need to maintain that whole infrastructure to counter our—counter China and others who are building their naval assets around the world and who are in fact incorporating their commercial assets into their battle plans.

So we need to have the U.S. flag fleet that is able to project power worldwide and then provide supplies for our country in times of war.

Senator WICKER. Well said. I think we would agree, though, and all four of you would probably agree, we really still don't have enough of a domestic fleet. What do we need to do in addition to the Jones Act to build more commercial-type ships in the United States of America? We're just not getting there. And this point is made by people who are attacking the Jones Act.

Mr. HEIL. The biggest thing that would—biggest help that would be needed is cargo to put on those vessels. I mean, we make investments in new ships based on cargo demand. We have——

Senator WICKER. During times when we're not at war.

Mr. HEIL. During times when we're not at war. You know, they're commercial vessels. We need to have customers and cargo to go on those vessels. There are various ideas that have been posed in the SHIPS Act and the Maritime Action Plan to address that. One idea is a tax incentive. Basically, it would be incentive—get a tax incentive if you put cargo on U.S. built ships. I think that would do a lot to help increase demand for U.S. built vessels and produce more ships in our shipyards.

Senator WICKER. Mr. Heil, you in your testimony commend the Maritime Executive Order and the bipartisan SHIPS for America Act. But at the same time, you're very troubled, as are the three of us, with the current waiver. We talk about the narrowly tailored waivers that Congress has provided for. It's my position that there's some question as to whether the current waiver complies with the statute.

Would anybody on the panel like to respond to that? I think probably, Mr. Heil, your company questions whether the administration has gone farther than the statute anticipated.

Mr. HEIL. Yes, Senator, there are two parts of the statute, 501(a) and 501(b). 501(a) is the national security waiver part of it, where the Secretary of Defense identifies, "It's necessary in the interest of national defense to address an immediate adverse effect on military operations." When we look at the movement last week of asphalt on a Chinese-built ship, Chinese crewed ship, from Louisiana to Connecticut, we fail to see the national security interest, and there are a lot of products on that list, over 600, that we see no national security relevance—

Senator WICKER. If war breaks out, that Chinese ship's not going to be available to us, is it?

Mr. HEIL. It is not.

Senator WICKER. Would any of the three of you other gentlemen like to agree or disagree with the basic premise that Mr. Heil and I have been talking about and the distinguished Ranking Member, about the necessity of the Jones Act? Anyone feel differently? Well, the cat's got your tongue. Mr. Woodrow, you're smiling and the Chair is being lenient with the gavel.

Mr. WOODROW. Thank you, Senator Wicker. What I will address in terms of our fisheries and trying to compete in the global environment and I'll use Russia as an example here, Russia is expanding its fleet of fishing vessels with government subsidies at a rate that we can't compete with, especially for our large or larger vessels. The cost to build a large trawler in China—well, it doesn't matter where they build it, whether it's in China or Turkey or overseas—but the cost to build a Russian vessel is about a third the cost it is to build here in the U.S.

I don't have a silver bullet of how we fix that here at home, but all I know is that we're falling behind our competitors and it does make it very challenging for us to continue to compete with them in a global space.

Senator WICKER. Anyone else? Mr. Chairman, thank you for your indulgence.

Senator SULLIVAN. Thank you, Mr. Chairman. And we're going to go to round two, Senator Blunt Rochester, if that makes sense for

you, because we have these witnesses who came from many parts of the country, but particularly far away from Alaska.

So let me turn to Mr. Woodrow. I want focus a little bit on the threat to the American blue economy, particularly from—you just mentioned it—from foreign governments. I'm going to focus on Russia and China. So I'm sure you're very familiar with, we had Russia ban the importation of all American seafood starting in 2014. That's an unlevel playing field. That's really an outrage. And to be honest, we didn't really react. I was certainly trying to get the governments of Obama, Trump won, and Biden to retaliate and I was successful.

I worked with the Biden administration. My team and I put thousands of hours into making sure there was a ban on the importation of all Russian seafood into America. Then they tried to launder it through China, and we got that loophole closed. By the way, if anyone else says they were working it, don't believe them, because it was my team and I. And that's a fact.

And then the Trump administration came on board and we said, hey, there are a lot of executive orders the Biden administration did, particularly against Alaska, that we want you to rescind because they hurt our economy, but not this one. Keep it. And the Trump administration listened to us and they've kept it.

So how important is that, that we finally, after 10 years, said we're not going to put up with this unlevel playing field? And oh, by the way, why should American importers—I had legislation to ban Russian importation of seafood, brought it to the Senate floor a few times. Unfortunately, some of my colleagues blocked it, but we got through that. But how important is it for Americans to have American freedom fish, not Russian or Chinese communist fish, and to sustainability, to national security, and just fairness.

I mean, this country banned the importation of any fish from America for 10 years, and now we finally reacted. And isn't that benefiting our coastal communities and fisheries, not just in Alaska, but throughout the country, for Americans to buy American seafood from American fishermen, not rely on this communist fish from China and Russia? How important has that been?

Mr. WOODROW. Chairman Sullivan, thank you for bringing this up. Thank you for your work on this issue and—

Senator SULLIVAN. Yes, we worked it really, really hard. By the way, there are some other people out there saying they had something to do with it. They didn't. Zero. Zilch. Nada. It was my team and I, and we put thousands of hours. The only reason I say that, I get offended sometimes when my team works hard and someone else comes in saying, oh, I did it. Nothing to do with it. My team and I did it, exclusively.

Mr. WOODROW. Alaska fishermen owe you a great debt of gratitude. For those who might not be aware, 2 years ago, seafood processors told Alaska pink salmon fishermen to stop fishing because they could not buy their fish for a single penny per pound and sell that fish on the market. They would—

Senator SULLIVAN. And weren't the Russians flooding the American market with seafood? Flooding. And trying to undercut and kill Alaska and American fishermen?

Mr. WOODROW. Senator, at that time, they weren't just flooding the U.S. market, they were flooding the global market——

Senator SULLIVAN. And they were doing it to try to destroy you guys, our fishermen, our coastal communities, weren't they?

Mr. WOODROW. Senator, they have publicly said that their goal is to bring down Alaska's fisheries.

Senator SULLIVAN. They said they were at war with Alaska fishermen.

Mr. WOODROW. You are correct.

Senator SULLIVAN. And when someone says to me, you're at war with my constituents, I say we fight back. And that's what we did, right?

Mr. WOODROW. Correct. And I will say that upholding this ban has made a difference. We have seen prices rebound here in the U.S. marketplace——

Senator SULLIVAN. Because Americans are buying Americans' freedom fish, not communist fish from Russia.

Mr. WOODROW. Correct.

Senator SULLIVAN. Good. Well, listen, we're going to keep that. We've worked with the President and his team, both administrations. This has been bipartisan. But again, I know we've worked with all of you guys on this. It was a really, really important policy goal that my team and I are proud to have led on and delivered. Not just for Alaskan fishermen, American fishermen.

So let's turn to China. So my bill, the FISH Act, which passed the Senate unanimously just about two months ago. I've been working on getting that over the goal line for about four years, and I finally got it over the goal line. That targets IUU fishing, unsustainable fishing, and it's aggressive. It sanctions Chinese fleets. It sends the Coast Guard and the U.S. Navy to go after them. It is the most aggressive bill. We're hoping the House is going to pass it here. Again, it was unanimous in the Senate, which I was proud of.

But you mentioned it, the Chinese—I chair the Congressional Executive Committee on China. That's a longstanding committee that was passed after China joined the WTO in the Congress. Senator Rubio used to chair it. When he became Secretary of State, now I chair it. We had a hearing recently on IUU fishing. The Chinese use slave labor on their ships. How hard is it for American fishermen, Alaska fishermen, to compete against slave labor?

Mr. WOODROW. Thank you, Senator. It undercuts us at every aspect——

Senator SULLIVAN. Impossible, right?

Mr. WOODROW. Yes, it's impossible. And it undercuts us at every aspect——

Senator SULLIVAN. Slave labor. People are forced to work, not paid, human trafficked. This is the China gray fleet.

Mr. WOODROW. What I'll also add, where it undercuts American fishermen is seafood has a challenge to enter into American homes, and it creates a barrier that they're—of confusion for consumers, and they just turn away from seafood entirely.

Senator SULLIVAN. Let me give you another example on China that I was proud to have led on. In last year's NDAA, I had a bill of mine that got in there saying we should not have any imports

of Chinese fish into military, DFACs, military chow halls, or military commissaries. Our military shouldn't be eating communist fish from China. By the way, you think they're—you think the Chinese military is eating Alaskan fish? No.

So my bill passed. So there's no communist Chinese fish in any commissary, in any chow hall in America. And believe it or not, there was a lot, right? There was a lot. So we stopped that. But I have another bill. I told you my comprehensive bycatch bill, which would be the most comprehensive bycatch legislation ever that says, why should we import any seafood from China if they don't have the standards that we do?

So my next focus is trying to get that over the goal line, including a ban on Chinese fish into America. Do you think that makes sense?

Mr. WOODROW. Senator—

Senator SULLIVAN. They don't have the sustainability that you do, that we do, that American fishermen do.

Mr. WOODROW.—for seafood coming into the U.S., regardless of where it may be coming from, we should be upholding to the same standards that we apply to our seafood here in the U.S.

Senator SULLIVAN. Yes, exactly. The same standards that we have. And we have the highest standards in the world, don't we?

Mr. WOODROW. We certainly do.

Senator SULLIVAN. On not just sustainability, environmental stewardship, but also workforce, right? We don't use slave labor on our ships, do we?

Mr. WOODROW. We certainly don't.

Senator SULLIVAN. Well, that's what we're going to do. And I think we'll have bipartisan support for that. So Senator Cantwell, the Ranking Member of this committee, the broader committee, welcome, and the floor is yours.

STATEMENT OF HON. MARIA CANTWELL, U.S. SENATOR FROM WASHINGTON

Senator CANTWELL. Thank you, Mr. Chairman. Thank you to you and to Senator Blunt Rochester for holding this very important meeting on the blue economy and the competitiveness of America in the maritime sector. So very much appreciated. I don't think—I don't think you were including me on people who helped claim credit for helping you on Russian fish. I think you thought I helped you, right?

Senator SULLIVAN. No, I wasn't including you at all.

Senator CANTWELL. OK.

Senator SULLIVAN. You're a partner.

Senator CANTWELL. Thank you. Appreciate that. And I want to continue to be.

I think this issue you've just illuminated—I just went on a trip to China with four of our colleagues, including two from our committee, and definitely brought up seafood. And the Senator's point about Russia moving their illegal fish through China has got to stop. And China has to become a better sustainable fisheries nation, and we should work with them on that or point out how that should be accomplished.

But they also represent 45 percent of the world's seafood consumption. So I was very surprised to see a bountiful dinner that I had there of really just Northwest product. Dungeness crab, spot prawns, geoduck, shellfish. I was thinking they have the best—they're eating the best that Washington State has to offer. And so to me, they should open up—

Senator SULLIVAN. Just real quick, do you think that was a propaganda dinner that they were like—

Senator CANTWELL. No, because it was arranged by—it was arranged by somebody—growers in our state.

Senator SULLIVAN. OK, just checking.

Senator CANTWELL. Growers. We had to push our way in. Push our way in. But the point is, instead of marketing and selling illegal Russian fish and trying to make money off of that, they should develop distribution and trade relations with the U.S. on seafood and better give us access to their market, because they like seafood. And the fact that they consume so much, that's the big opportunity, and we're happy to depart to them what better fisheries management truly looks like.

But we have lots of fish we can sell to them if they would just let it in the door. So I want to work with this committee and the two of you on ideas to further that. But, I do think that brings up a point about tariffs. I don't like the tariffs because I don't like the tariffs being charged on fisheries, and I don't know, maybe somebody might want to comment about that.

But this broader hearing being about strengthening the coastal communities and the maritime economy, I wanted to—I'll put a longer statement in for the record that covers all of that, Mr. Chairman.

[The information referred to follows.]

PREPARED STATEMENT OF HON. MARIA CANTWELL, U.S. SENATOR FROM WASHINGTON

Thank you, Senator Sullivan, for holding this important hearing.

From fisheries and seafood processing, to shipbuilding, ports, maritime transportation, tourism, and emerging ocean technologies, the marine economy contributes more than \$500 billion dollars annually to our Nation's economy and supports millions of jobs. Nowhere is that more evident than in Alaska and Washington.

Alaska harvests roughly 60 percent of America's seafood. Seattle serves as the Nation's seafood capital, connecting fishermen, processors, shipyards, ports, and exporters to markets around the world. Together, Alaska and Washington anchor a seafood supply chain that supports harvesters, processors, truckers, shipyards, exporters, and maritime workers across the country.

Just a few weeks ago, I was in China meeting with business leaders and government officials. During one dinner in Shanghai, I was served geoduck harvested from Puget Sound. Less than 48 hours earlier, it had been in the waters of Washington State. Before tariffs disrupted that market, geoduck was selling for more than \$100 dollars per pound.

That is the blue economy. It is Washington shellfish growers, fishermen, ports, processors, truck drivers, exporters, and maritime workers connected to customers around the world. Washington exports more than \$1 billion dollars in seafood annually. Our maritime sector supports more than 170,000 jobs and generates nearly \$46 billion dollars in economic activity each year. The question before us today is whether we are creating the conditions necessary for that economy to grow?

A thriving blue economy requires three things: science, infrastructure, and a strong maritime workforce. It starts with science. Fishermen cannot fish sustainably without accurate and timely information on the health of fish stocks. Regional fishery managers cannot make sustainable decisions without stock assessments. Coastal communities cannot plan for the future without reliable ocean observations, weather forecasting, and scientific data.

Yet at the very moment the Administration says it wants to grow the Blue Economy, it is reducing the scientific capacity that underpins it. The President's Fiscal Year 2027 budget proposal would cut NOAA by roughly \$1.6 billion dollars—nearly 27 percent—while eliminating entire programs such as Sea Grant, the Integrated Ocean Observing System, Coastal Zone Management Grants, and NOAA's research arm, the Office of Oceanic and Atmospheric Research.

The consequences are real. Stock assessments and surveys are already being delayed or cancelled. That means fishing seasons become harder to plan, stock assessments become less reliable, and managers have less information to keep fisheries open and sustainable. Businesses struggle to make investments when the Federal government cannot provide the scientific information needed to support management decisions.

A thriving Blue Economy also requires modern infrastructure. That means resilient ports, working waterfronts, seafood processing facilities, navigation systems, and shipyards capable of building and maintaining the vessels our economy depends on. Programs like the Port Infrastructure Development Program have helped modernize ports across the country and strengthened supply chains. Continued investment in maritime infrastructure is essential if America intends to compete globally. But ports and shipyards alone do not create maritime capacity. We also need policies that support long-term investment in American vessels and American mariners.

That is why I am concerned about the Administration's unprecedented 150-day Jones Act waiver. The Administration said this waiver was needed to move energy products more quickly, ease supply disruptions, and help lower fuel costs. Yet after nearly five months, there is little evidence of meaningful savings at the pump.

What we are seeing instead is growing uncertainty throughout the maritime industry. Shipyard investments are being delayed. Vessel orders are being reconsidered. Domestic operators are losing work to foreign competitors. At least one planned \$1 billion dollar maritime capital raise has reportedly been halted, and more than \$2.6 billion dollars in active shipyard contracts are now at risk.

That should concern anyone who is serious about rebuilding American shipbuilding capacity. Shipyards and vessel operators make investment decisions over decades, not months.

When the rules governing the domestic maritime market become uncertain, companies delay vessel orders, postpone expansion plans, and think twice before making long-term investments in American shipyards. I agree with the Administration's goal of restoring American maritime dominance. But maritime dominance is not achieved through uncertainty. It is achieved through investment.

We cannot ask companies to build ships in America while simultaneously undermining confidence in the laws that sustain the market for those very ships. We cannot rebuild American shipyards with one hand while weakening the laws that support them with the other.

I support the Administration's goal of growing American shipbuilding, strengthening our maritime workforce, and expanding domestic seafood production. But those goals require consistency. If America wants to remain a global maritime leader, we must invest in the science that supports our fisheries, the infrastructure that moves our commerce, and the industrial base that builds and crews our vessels.

That is how we grow a \$511 billion-dollar blue economy. That is how we compete with China. And that is how we secure America's maritime future.

Thank you, Mr. Chairman.

Senator CANTWELL. But I wanted to ask about the Jones Act since we have a temporary waiver on the Jones Act which creates a little more uncertainty. I was very pleased that the MARAD director and our Transportation Secretary all want to have a very aggressive a shipbuilding agenda for the Nation and that they want us to be more active in the kind of capacity we have for investments in vessels, shipyards, workforce training, ports, and maritime infrastructure.

So I wanted to know specifically from you, Mr. Heil, if the waiver is extended again, what would that mean for investments in shipyards and workforce development. Does it create uncertainty? What should—how should we communicate about this?

Mr. HEIL. Senator, thank you for the question. The current waiver has created a tremendous amount of uncertainty. Now at 150

days, which is unprecedented amount of time, to be extended again would be another signal to the investment community and the companies like ours and to mariners that the Jones Act is unstable and investment will flee.

Our U.S. mariners will wonder, will they have jobs? You know, this budget request for Fiscal Year 2027 includes a large investment in the Merchant Marine Academy, which is sorely needed. But without the Jones Act, we don't need a Merchant Marine Academy frankly. It's hard to see why that investment would be moving forward. The Jones Act supports the jobs from the Merchant Marine Academy. Those go into our commercial mariners, into the U.S. military. They're critical, and the Jones Act is the foundation for all of that.

So when you talk about an extended waiver, it would be extremely damaging to every part of the U.S. maritime industry.

Senator CANTWELL. Well, we certainly don't want that. We certainly want a very strong Jones Act, and we certainly want a very strong shipbuilding. Are there other specific investments that you think we should be looking at that would help the workforce development and accelerate shipbuilding in the U.S.?

Mr. HEIL. On the workforce side, there are a lot of, we think, very good ideas that we support in the SHIPS Act. You know, on the mariner recruitment side, we need to do a better job there. For a lot of high school kids, they go to their high school counselor and hear about all the service academies, but don't hear about the Merchant Marine Academy. That needs to change. They need to know about our State academies, and it needs to be a countrywide effort, not just on the coasts. Folks in the middle of the country need to understand that these are good jobs, good high-paying jobs, and they need to have access to that.

On the shipbuilding side, there's a lot we can do. I mentioned earlier in the hearing perhaps a tax incentive for folks, for companies that put cargo on U.S. built ships. That would be one way to drive demand for U.S. built vessels because that cargo has to go on U.S. built ships.

There's also various ideas about—these would be more in the trade negotiation realm, but requiring certain percentage of imports or exports from countries like China that they be put on U.S. flagged vessels. That would be a tremendous help in allowing U.S. companies and U.S. flagged vessels to compete in markets where we're excluded from right now.

Senator CANTWELL. Well, I like that last idea because this committee passed in response to the COVID pandemic and the fact that international trade vessels were leaving U.S. products on the dock. They literally, they were just coming here and dropping stuff off and running back, not even taking product back with them. And that led us to passing a reform to the Federal Maritime Commission and new tools to ensure that we were getting access and trade.

But this is an additional requirement, and I think the change, you know, Mr. Chairman, in the landscape—both the COVID pandemic showed us, but now the interest in the Pacific writ large has shown us that the United States needs to strengthen its capacity. And to do that, we have to strengthen our shipbuilding capacity. I think I see both of my colleagues nodded when you talked about

the workforce, because they know—they know that there are young people in our states that would love to know there are six-figure welding jobs right out of high school.

Somebody's nodding in the audience there, and they're like, yes, let us know, where are those? And so we can be training and skilling at the high school level young people who want those six-figure jobs. We could be doing that right now. Some in my state, in Kitsap County, which is a very big maritime—we have military bases there and a huge Navy population—they do train and skill for this.

But we need—as you just said, it needs to be everywhere in the United States if we want to get the capacity for these young people. But again, I thank the two of you for holding this hearing, and I'll take any comments for the record about the tariffs. But, you know, I don't know what the number is. Some big part—is it 80 percent of our economy comes out of the coastal states? Well, it's a big number. It's a big number of our economy comes out of coastal states.

So, glad you're having this hearing and glad we continue to focus on this. Thank you, Mr. Chairman.

Senator SULLIVAN. Thank you. Senator Blunt Rochester.

Senator BLUNT ROCHESTER. Thank you, Mr. Chairman for a round two, and I know votes were just called, so I'm going to try to be succinct. I want to follow up on the whole conversation about workforce, because I think, you know, when we look at general—we have generally workforce challenges, but to reshore cranes, to build new ships, to do all the repairs and the improvements to port infrastructure, we need people to do those jobs. And the Department of Labor estimates that the shipbuilding industry alone may require 200,000 or more additional workers to satisfy demand.

I'm going to ask the question to Mr. Sheridan and Mr. Heil, and others can join in as well. But we know this affects our competitiveness. So can both of you talk a little bit about the strategy for how we deal with these workforce shortages? I know the administration has a strategy to address it, if you want to talk about that. I know you focused on K through 12, and we've also talked about the Merchant Marine Academies.

So I'll start with you, Mr. Sheridan, if you could talk about how do we deal with our workforce shortages in this industry, and then I'll turn to you, Mr. Heil.

Mr. SHERIDAN. Thank you, Ranking Member Blunt Rochester, for the question. Certainly, I was all about K through 12 there in my comments and we do believe that's an opportunity. We've been involved in Alaska with the mariculture funding that we've discussed, really working to engage middle school students with Science Olympiad, high school students with Teaching Through Technology, but then also really intentionally partnering with CTE programs and traditional community colleges.

And so, you know, for fisheries and mariculture in Alaska, there are two programs that kind of stand out: Prince William Sound College in Valdez, University of Alaska Southeast Sitka campus's Applied Fisheries program. But for shipbuilding, we do have shipbuilding in the state as well, and UAS Ketchikan's campus is in-

volved there. And I would hope that—I haven't been involved with—

Senator SULLIVAN. I was just there, it's a really impressive program.

Mr. SHERIDAN. It is a great program. So I've not been involved with it, but I would hope that they are—they are really starting as young as they possibly can because that is our near future workforce. The work that we've been doing with students in Cordova, for example, those kids are already in the workforce. Our 14-year-old son is participating in a setnet salmon commercial fishery. Today was the first day of the fishery. And so they start them young in Alaska. And so I think that we should start training them young as well.

Senator BLUNT ROCHESTER. That's the pipeline. And I'll come back to you. Just wanted to clarify, we talked a lot about public-private partnerships and want to make sure that the resources are there to continue that good work. I'm going to turn to Mr. Heil if you could talk as well about the workforce.

Mr. HEIL. So critical issue, obviously in lots of different areas. I think part of it is replicating models that work for workforce training and skill training, developing high school curriculums around certain skill sets. That's something that we're doing in Jacksonville right now. I think we'll announce soon that our partnership there to do that on the mariner side, and it's the same for the ship-building sector.

I know some of the—some of the companies have great partnerships with Job Corps centers and community colleges to develop workers, to bring them in, get their skills up to a certain level, and hire them. And again, it goes back to awareness. We have to do a better job as a country of making sure young people understand that these opportunities exist and where they are and how do they access them.

Senator BLUNT ROCHESTER. I will ask for the record questions on port equipment as well as emerging technologies like robotics and artificial intelligence.

But I did want to ask each of you, if you could be very succinct, to tell me what is the one thing that's keeping you up at night and what is the one thing that you want us to make sure we tackle? Try one. I know it's very hard because there are a lot of things that we discussed here. Who would like to go first? OK, Mr. Woodrow.

Mr. WOODROW. I'll be very succinct. We need to modernize our industry. We need to catch up to the rest of the world.

Senator BLUNT ROCHESTER. That's it. And what do you want us to do?

Mr. WOODROW. Well, you mentioned AI, you mentioned automation. I'll just share a very quick story. A couple of years ago, I was touring a processing plant in Spain, and that processing plant had four robots working the line. The two robots in the front were so darn efficient at their jobs, the other two robots didn't have a job.

Senator BLUNT ROCHESTER. Wow.

Mr. WOODROW. We don't have a single plant like that in Alaska.

Senator BLUNT ROCHESTER. Wow. Thank you. Who's next? All right, Mr. Sheridan.

Mr. SHERIDAN. I'll keep it quick and I'll stick with the same thing. When we're talking about these technologies, automation, integrating AI into seafood processing technologies, I do think that we should start young. And so I'll just share an example. We brought middle school students to Fairbanks for a Science Olympiad event. They were introduced to funders and received thousands of dollars to 3D print their own drones, and they're now developing their own skills and experience there. So these young people have a lot of potential, and I think it's important to engage with them.

Senator BLUNT ROCHESTER. Excellent. And Mr. Wardwell.

Mr. WARDWELL. Yes, I've spent a lot of my career trying to bring geospatial services to communities throughout Alaska that are underserved so that Crowley can deliver goods and seafood can get out of them and get into them. And so bringing—making sure there's legislation for private industry to be involved with bringing those services and funding those opportunities.

Senator BLUNT ROCHESTER. Great, thank you. And Mr. Heil.

Mr. HEIL. My biggest concern right now is the Jones Act waiver and what it's doing to U.S. shipping and U.S. maritime industry. And in terms of what we would like, you know, see Congress do is to encourage the administration to end the current waiver. And if there has to be a waiver, use the 501(b) process, which is the process that is when waivers are needed, that's the process that's known to U.S. maritime and does not cause the damaging effects of the current waiver.

Senator BLUNT ROCHESTER. Great. Thank you. And I yield back.

Senator SULLIVAN. Thank you, Senator Blunt Rochester. And there's a vote called, so I'm going to ask one more round. But I want to thank you for engaging in this hearing with so many of my constituents. It's great. And I really appreciate your involvement and engagement. So I'm going to—I'm going to do one more—one more quick round.

Mr. Heil, I haven't asked you a question, and it's about an opportunity, something I've thought about a lot. I don't know how you would do it, but I think it has a great opportunity. I'm a big supporter of the energy sector, and you know, we have this real big boom, which is great for America, great for the world, and the production of natural gas and even the export of natural gas.

In Alaska, we're trying to get a—we're close. We've never been this close to get this very large-scale LNG project and Alaska pipeline, gas pipeline, off the—off the ground and into development. We've been trying to work on that. We've been trying to get that done for about 50 years, and we might be getting there. We are definitely getting there.

So my question is this. You mentioned mandating American cargo on vessels. I've always thought about one way to get our shipbuilding off the ground. Not sure the oil and gas sector likes this idea, but to mandate a certain amount. We are exporting LNG all over the world and it's going to continue. And if this Alaska project gets done, that'll be the biggest LNG project in America, maybe in the world. We're the logical place. It's a six-day cargo shipment from the Kenai Peninsula to Tokyo. We were the first

place in the world to start exporting LNG to Asia. We started doing that in the late 1960s from Cook Inlet.

So my question is, would it make sense to mandate a certain amount of American cargoes or percentage of LNG to be from American-made ships as this industry is really, really taking off and has explosive growth? And I'm talking the American LNG natural gas industry. What's your thought on that? Have you thought about that one?

Mr. HEIL. It certainly could. And I think that is a concept that's in the SHIPS Act currently. So, yes, I think that requiring that a certain amount of exports of LNG be transported on U.S. built vessels—

Senator SULLIVAN. Can we build those vessels, though?

Mr. HEIL. Yes.

Senator SULLIVAN. A lot of people say, oh, we can't do it. We don't have the capability. Only the Koreans can do it. Only the Chinese. And I'm like, well, actually, we do have the capability to build sophisticated ships. Go look at the latest American submarine or the American aircraft carrier. Those are the most sophisticated ships on the planet Earth, and we Americans build them. So can we build LNG ships?

Mr. HEIL. Senator, I'm not a shipbuilder, but, you know, from what I've observed, yes, we can. It will just take time. You know, an LNG vessel is probably the most complicated commercial vessel that is—that is constructed—

Senator SULLIVAN. Not as complicated as a Boomer-class submarine, though.

Mr. HEIL. No, I mean, that's a different scale on the defense side. But on the commercial side, it's very complicated. We can do it. It'll just—it will take some time and training, but it's something we can do in this country.

Senator SULLIVAN. And it's an opportunity, right?

Mr. HEIL. It is an opportunity.

Senator SULLIVAN. Our LNG capacity has really increased, and it's great for the economy, great for—and again, we're trying to get this Alaska one off the ground.

Mr. Woodrow, I want to come back to you. I was honored to be at the inaugural meeting of the Secretary of the Department of Agriculture, joined by the Secretary of Commerce, joined by the Secretary of Interior, joined by the White House National Economic Council Chairman and me, when we announced the Office of Seafood Policy at USDA. Again, that's something I've been working on for—on that one for 10 years, and we finally got it done.

I have legislation on it. We're going to follow up on that. But as you know, we got legislation of mine passed last year to fund that office, and now the administration is fully behind it. The launch of this was—you don't normally get half the—well, it wasn't half, about a third of the cabinet of any administration to launch something. So it was a big deal.

How important is that from your perspective, some of the initiatives that the Secretary announced that I've been working on to essentially enable our fishing communities, our fishermen, our coastal communities to have access to analogous programs that American farmers have that de-risk their operations? We love our Amer-

ican farmers, but they have billions and billions of dollars of programs that enable them to limit their risk, crop insurance and export capabilities when markets close.

How important is that Office of Seafood Policy at USDA and what would be the most important programs we should do for our fishermen that American farmers already have?

Mr. WOODROW. Thank you, Senator Sullivan. As you said, we've been chasing this for decades now. And I've, you know, kind of joked that we're like a dog chasing a car. Now we finally caught it, we aren't sure exactly what to do with this car, but we're figuring it out really fast. And we're very thankful for the work you've done. And this administration for establishing this Office of Seafood.

Senator SULLIVAN. Did you see when we launched it? It was quite a big deal.

Mr. WOODROW. It was excellent. And being able to bridge the gap that we've had between NOAA, where we manage our fisheries, to USDA, where our fish becomes food. That's where seafood actually happens when it enters into USDA—

Senator SULLIVAN. And they have—I mean, it's no exaggeration, their programs for farmers are in the hundreds of billions of dollars. And again, we love our farmers. They get a lot of Federal Government support. The farmers of the sea, fishermen of America, don't. And we want them in on those programs, and the Secretary of USDA said that was part of her goal for that office.

Mr. WOODROW. Correct. And those programs didn't all happen overnight. They happened over periods of time when we addressed challenges to our farmers. And we could also argue that, you know, our fishermen face even more challenges, right?

Senator SULLIVAN. Yes.

Mr. WOODROW. The volatility of our markets were at, you know, the whims of Mother Nature when it comes to returns of our seafood.

Senator SULLIVAN. Yes.

Mr. WOODROW. And so having those protections, having those assurances to allow them to have, you know, some sort of certainty that they can fish today and fish tomorrow is really important. So being able to take advantage and actually enter into—we aren't—what we are asking is not to, you know, replace our farmers and those programs—

Senator SULLIVAN. No, no, no.

Mr. WOODROW.—just be a part of it and have those same assurances.

Senator SULLIVAN. Well, maybe for the record on this hearing, you can submit to this committee some of the areas that you would like to have prioritized, because it is a great opportunity. And again, I've been working on trying to get that done for almost a decade, and it was a real satisfying day when we—when we did it.

So, Mr. Sheridan, why don't we come back to you? You know, I'm a huge UAF fan, so important to Alaska, so important to our economy. So the Blue Economy Center that you had brings together universities, industries, entrepreneurs, communities across Alaska.

Can you share examples of public-private partnerships with universities and others that you believe are successful in creating blue

economy opportunities, either in Alaska, or maybe there's something you've seen in the lower 48, or like overseas in Europe, that looks good that maybe we can emulate with that public-private partnership model?

Mr. SHERIDAN. Thank you, Chairman Sullivan. I'm happy to have this opportunity to talk a little bit about work that we've done with the City of Valdez. And so—

Senator SULLIVAN. When you say you, you're talking about UAF?

Mr. SHERIDAN. UAF. It's a broad consortium. I'll go back to just describing a little bit of the origins for what became the Alaska Mariculture Cluster, the \$49 million EDA Build Back Better Challenge Award grant. That was really instigated by and supported by a broad group of Alaskans. The City of Valdez offered up a \$6 million match that really made that possible. And so I just wanted to acknowledge that. With mariculture again—

Senator SULLIVAN. The city put up—so the city had skin in the game? \$6 million?

Mr. SHERIDAN. \$6 million.

Senator SULLIVAN. Wow. Significant.

Mr. SHERIDAN. Yes. And that just—that opened up opportunity for everyone across the state. Again, with mariculture in Alaska, we're talking about kelp farming and shellfish fish farming. But UAF is the State's land grant institution. The Institute of Agriculture and Natural Resources Extension, IANRE, is our agency that meets that mission. And the interesting thing about mariculture, kelp farming in particular, as we're talking about USDA, is the potential for impact on agricultural markets.

And so for kelp in particular, there's the potential for large volume of production to support the development of livestock feeds and the development of soil applications. So I just think that's an interesting example of where, you know, a municipal-university relationship supported industry development in the state in ways that we could potentially move the needle for the United States agricultural sector.

Again, we have more coastline than the rest of the lower 48 combined. That's a whole lot of space to grow a whole lot of kelp, and those are some pretty big markets.

Senator SULLIVAN. Good, great. Good answer. Let me end, I will just do one more question for Mr. Wardwell. You know, I think it surprises a lot of people, your testimony, that Alaska still has large areas that are still uncharted in terms of the waters, your point about the moon being mapped, it's really an interesting one. It's kind of crazy, to be honest.

What risks does that create for commerce, navigation, economic development, national security, when we have such large parts of our coastal area in Alaska and the rest of the country? But I think it's really acute in Alaska. Where we have areas that are still uncharted?

Mr. WARDWELL. Yes, thank you for the question. It creates a major risk. There could be navigation hazards in those uncharted areas.

Senator SULLIVAN. You mean like a ship running into a rock?

Mr. WARDWELL. For example, you know, yes, ship run into a rock, that could create you know, loss of life and property. We're

having—you know, trying to have recovery of those vessels, you know, Coast Guard out in the area, it's a massive region. Just delivering commerce, you know, having efficient routes for shipping and navigation and understanding our resources, right? So if we don't know what's down there, how can we manage that and use those uncharted areas.

Senator SULLIVAN. Good. Well, thank you. Well, listen, we have a vote right now I'm going to head off to, but I really want to thank the witnesses for their testimony today and the Q&A. The hearing record here will remain open until the close of business Tuesday, June 9—that's a week from today—for other Senators or those of us like myself who want to submit additional questions for the record. We would respectfully request the witnesses to be able to answer those questions by close of business Tuesday, June 23.

And otherwise, I want to thank the witnesses, particularly—well, everybody, but my fellow Alaskans who flew thousands of miles to come here to D.C. to testify. I think it's very enlightening. We had a good group of Senators here. It's a great topic and a great opportunity for not just Alaska, but for America. And it's very bipartisan, as you can see. And the more we highlight this and have the good ideas that all of you bring to it, the more we can take advantage of it, legislate on it in a positive way.

So I want to thank all of you again. This is an exciting topic with a lot of potential, and you guys have all put a bunch of brainpower and thought and action into it, and we really appreciate it. So with that, I'm going to conclude this hearing. The Committee stands adjourned.

[Whereupon, at 11:37 a.m., the hearing was adjourned.]

A P P E N D I X

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. ROGER WICKER TO
TOMMY SHERIDAN

National Sea Grant Program

Federal investments in ocean research at universities is an essential precursor to developing new technologies that support better ocean sensing, data collection, and fisheries information. The National Oceanic and Atmospheric Administration's Sea Grant program is a Federal-University partnership program that advances science for coastal communities. For over 50 years, the National Sea Grant College program has supported coastal communities through research, extension, and education. The National Sea Grant Law provides nationally recognized legal research, education and outreach that strengthens understanding of the legal frameworks governing our oceans, coastal, and freshwater resources.

- How does the Sea Grant program support the Blue Economy and how can we ensure that we are fully utilizing Federal investments in the Sea Grant program?

Answer. Senator Wicker, thank you for the opportunity to contribute to this process, and for the opportunity to answer your questions. These answers, along with my written testimony, and previous oral comments, are provided to you through my personal capacity as a private citizen, as a parent to two Alaskan schoolchildren, and as a resident of coastal Alaskan communities for the past 24 years.

On a national scale, thirty-four universities participate in the National Sea Grant Program, which as you note is a federal-state partnership that provides critical services to a wide range of residents in every coastal and Great Lakes state, and U.S. territories. The Sea Grant program supports the Blue Economy in a variety of ways, including creating and sustaining local jobs and a skilled workforce through training and new business support; providing planning services and technical advice to businesses; strengthening the domestic U.S. seafood supply chain through seafood workforce development and safety training; and supporting coastal communities and businesses in responding to storms, flooding and erosion.

With imported seafood making up 90 percent of American seafood consumption, I believe that our Nation should be focusing on programs to expand and improve our domestic wild capture fisheries and aquaculture industry. The Sea Grant is a program that does just that—helping fishermen and mariculture (shellfish and seaweed) farmers navigate a complex patchwork of state and Federal coastal zone management regulations through technical assistance. Sea Grant works with local harvesters and producers to grow and sustain their business models while connecting them to local resources to share best practices.

The economic impact of the National Sea Grant Program highlights the benefit of this Federal investment. According to 2024 performance metrics of the program, Sea Grant contributed to creating and sustaining 21,520 jobs and 2,076 businesses. On top of business and job creation, Sea Grant logged 336,000 volunteer hours in 2024. Further, Sea Grant contributed \$1.59 billion in economic benefit, representing a 12:1 impact for every Federal dollar invested in the program (\$94 million).

Alaska Sea Grant, which is housed at the University of Alaska Fairbanks (UAF), provides marine education, research, and technology transfer to the public with support from the National Oceanic and Atmospheric Administration (NOAA). Alaska Sea Grant support for the seafood harvesting sector includes providing beginning and established seafood harvesters with resources, consulting, and hands-on training. Workshops supported by the Alaska Sea Grant FishBiz team cover skills that support robust careers in Alaska's fishing industry. Programs include the AK On-Board Crew Class, Alaska Young Fishermen's Summit, Business of Fishing workshops, direct seafood marketing courses, and AMSEA (Alaska Marine Safety Education Association) safety courses.

Alaska Sea Grant's seafood processing sector support includes consultation services, product development and testing, and training. Workshops help seafood proc-

essing businesses attain food and process safety certification, and build workforce capacity to ensure a competitive Alaskan seafood industry. Our programs include Hazard Analysis Critical Control Point (HACCP) safety training, seafood processor supervisor training, and the Alaska Seafood Processing Leadership Institute.

Alaska Sea Grant also supports kelp and shellfish mariculture businesses with resources and workshops for business planning, site permitting, and applying growing and harvesting methods and technology. Programs include kelp business planning and marketing workshops, kelp farming operations train-the-trainers, Alaska seaweed handling and processing workshops, kelp hatchery operations and oyster hatchery operations workshops, and the annual Mariculture Conference of Alaska.

In 2023, it is estimated that Alaska Sea Grant's work resulted in over \$52 million in economic benefit to the state, thanks to a Federal investment of \$1.9 million (27:1). Alaska Sea Grant workforce development, training, and technical support activities supported 559 jobs, 183 businesses, and 9,472 professionals trained in 2023.

Here in Prince William Sound, where I live, we are grateful for our Alaska Sea Grant Marine Advisory Program specialists in Cordova and Valdez. As is true for all of Alaska Sea Grant employees throughout the state, these employees are valued members of our communities, providing essential education and training opportunities for residents of all ages and occupations. They are commercial fishermen, small business owners, volunteers, and public servants working alongside and with community members to ensure that Alaska's Blue Economy thrives.

- Can you comment on the value added to fisheries and coastal economies through collaboration with universities and their researchers?

Answer. Although I provide these answers in my personal capacity, I also currently serve as the Director for the Alaska Blue Economy Center (ABEC) at the University of Alaska Fairbanks (UAF). ABEC is housed administratively in the university's College of Fisheries and Ocean Sciences, or CFOS, where our world-class faculty educates future leaders in fisheries and marine science, while addressing pressing issues in aquatic ecosystems from the Arctic to Antarctica. ABEC's role is to connect capacities throughout the University of Alaska, including CFOS, with problems, needs, and opportunities relating to the state's blue economy. I have over two decades of experience living and working throughout and alongside Alaska's Blue Economy, with experience as a hatchery manager in the state's private non-profit salmon fishery enhancement program, as a fishery manager for the State of Alaska Department of Fish and Game, in addition to roles in the seafood processing sector, most recently serving in a variety of capacities in academia. These deeply rooted perspectives are not unique among university researchers—many of my colleagues grew up fishing in Alaska, whether as commercial, subsistence, or recreational fishers—with many having been born and raised in coastal Alaskan communities.

Alaska's seafood industry continues to be one of Alaska's most important economic drivers, contributing about 7 percent to Alaska's gross domestic product (GDP), generating over \$5 billion in economic activity, and supporting more than 41,800 jobs. Alaskan seafood harvests account for roughly 63 percent of total U.S. seafood landings, producing more wild-caught seafood than all other states combined. Universities, particularly the University of Alaska (UA) system, including Alaska Sea Grant, anchors and supports the state's seafood industry by providing essential workforce training, innovative food safety certifications, and research and development in emerging opportunities such as mariculture.

Through initiatives such as the Fisheries, Seafood and Maritime Initiative (FSMI), and the Alaska Mariculture Workforce Development Plan, universities align degree and certificate programs with industry and community needs. At ABEC, one of our priorities has been to support K–12 workforce awareness and development to prepare our youngest students for transition into the workplace, ideally in partnership with the state's community-based campuses where dual credit programs allow high school students to earn college credit while developing relevant and marketable skills, earning certificates and occupational endorsements along the way, with the potential of earning an Associate's degree simultaneous to their traditional high school diploma. These students are then adequately prepared for direct entry into the workforce, or can pursue additional education in traditional university programs, such as those available at UAF CFOS, albeit with a different skillset than is common among entry-level undergraduate students. Prince William Sound College in Valdez, Alaska, is a notable Alaskan example whereby local high school students can learn from renowned instructors in areas such as Construction Skills, Marine Services Technology, Millwright, Natural Resources Technician, Marine Natural Resources Technician, and Outdoor Leadership. Another notable, relevant, and highly innovative Alaskan program is the Applied Fisheries Program at the University of Alaska Southeast's Sitka Campus, where students are immersed in the excit-

ing and emerging fields of aquaculture and mariculture through their highly regarded Alaska Aquaculture Semester.

Universities provide critical infrastructure in coastal communities that are unique to their mission and provide economic cornerstones for supporting local and regional industries and businesses. One such example in Alaska is the Seward Marine Center (SMC), which is located approximately 130 miles south of Anchorage at the head of Resurrection Bay. Co-located with the Alaska SeaLife Center and the Alutiiq Pride Marine Institute, the Seward campus is a central feature in the community of Seward and the broader Kenai Peninsula. Established in 1970 to support research in fisheries, marine biology and oceanography, SMC is one of Alaska's primary docking facilities for marine research vessels and has been a driving force both in scientific research and in the Seward community.

UAF's Kodiak Seafood and Marine Science Center (KSMSC) is another notable coastal Alaskan asset, providing researchers, students, and community and industry members with access to research kitchens, biochemistry labs and food labs to test production techniques and develop new seafood products. KSMSC staff work closely with the industry partners to convey research results and provide educational opportunities that help seafood workers improve efficiency and the quality of their products. Created by the Alaska Legislature in 1981, the mission of KSMSC is to increase the value of Alaska's fishing industry and marine resources through research, technological development, education, and service.

Community campuses operate throughout the University of Alaska (UA) system, offering accessible, localized degree programs, vocational training, and academic support tailored to their specific regions. University of Alaska Anchorage (UAA), which is headquartered in Anchorage, administers four main community campuses across Southcentral Alaska: Kenai Peninsula College in Soldotna, Kodiak College in Kodiak, Matanuska-Susitna College in Palmer, and Prince William Sound College in Valdez. UAF, which is administered from Fairbanks, operates multiple community and rural campuses across the state, including its Bristol Bay Campus in Dillingham, Chukchi Campus in Kotzebue, Kuskokwim Campus in Bethel, and Northwest Campus in Nome. University of Alaska Southeast, with its main residential hub in Juneau, serves Southeast Alaska in concert with satellite campuses in Ketchikan and Sitka.

Ilisagvik College is a public tribal land-grant community college in Utqiagvik (formerly Barrow), Alaska. Formally established in 1995, the College provides post-secondary academic, career and technical education in a learning environment that honors Iñupiat culture, language, values, and traditions, while developing a well-educated and trained workforce who meet the human resource needs of North Slope employers and the state of Alaska. Operated by the North Slope Borough, a home rule government of the Iñupiat, it is the only tribal college or university in Alaska, and it is the northernmost accredited community college in the United States.

Collectively, in Alaska and beyond, these coastal university facilities and their researchers, students, staff and volunteers, are essential engines for coastal and maritime economies. They drive the Blue Economy by linking rigorous academic research with practical workforce development for traditional and established coastal industries, such as fisheries and tourism, while also cultivating and developing other emerging opportunities such as marine robotics (and ocean technology) and sustainable aquaculture.

Thank you sincerely for these opportunities to contribute to your work, and for the opportunity to serve the State of Alaska, and our nation, through these contributions.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. LISA BLUNT ROCHESTER TO
TOMMY SHERIDAN

Topic: Emerging Technologies

Question 1. Mr. Sheridan, how can the Federal government better support academic institutions that are on the forefront of applying emerging technologies to a marine environment?

Answer. Senator Blunt Rochester, thank you for the opportunity to contribute to this process, and for the opportunity to answer your questions. These answers, along with my written testimony, and previous oral comments, are provided to you through my personal capacity as a private citizen, as a parent to two Alaskan schoolchildren, and as a resident of coastal Alaskan communities for the past 24 years.

Personally, I have found the Ocean Research Advisory Panel's (ORAP) recommendations for supporting public-private partnerships to advance emerging ocean

technologies to be among the most compelling advice as to how the Federal government can best support academic institutions that are on the forefront of applying emerging technologies to a marine environment. ORAP advises the Ocean Policy Committee (OPC) and provides independent recommendations to the Federal government on matters of ocean policy. ORAP membership consists of individuals who represent the National Academies of Science, Engineering, and Medicine; individuals who represent the views of ocean industries, state, tribal, territorial or local governments, and academia, and such other views as the co-chairs of OPC consider appropriate; and individuals eminent in the fields of marine science, marine technology, and marine policy, or related fields. The ORAP membership reflects a balance of academic, scientific, and geographic interests.

On May 21, 2026, ORAP reviewed a report providing recommendations to the OPC regarding opportunities for leveraging public-private partnerships to advance emerging ocean technologies that support national ocean research priorities. Supporting advancement of emerging ocean technologies in the U.S. via public private partnerships applies private sector talent to address national interests that include food security, domain awareness, public health, and environmental stewardship, while fostering entrepreneurship and positioning U.S. companies to be leaders in the global Blue Economy. The report identifies challenges and barriers to public-private partnerships and makes recommendations for addressing them. The report's appendix includes a discussion of examples of technologies that are mature for investment. The updated version of the report incorporates the perspectives gained from panelists at a previous ORAP meeting who discussed some of the challenges and barriers to public-private partnerships, as well as examples of successes. At their May 21 meeting, ORAP adopted the report via unanimous consent, and there were no objections. Additional details regarding this report may be accessed at <https://www.noaa.gov/ocean-research-advisory-panel/orap-public-meetings> (the report itself can be accessed at <https://www.noaa.gov/sites/default/files/2026-05/DRAFT-BOT-Report-for-ORAP-Review-Approve-May2026.pdf>), and I provide its Executive Summary here:

“The development of public-private partnerships to support emerging observing technologies that monitor ocean biogeochemistry, biology, and ecology is critical for driving the growth of a sustainable ocean economy, supporting national defense and navigation safety, and developing U.S. energy resources and infrastructure. This report identifies challenges and opportunities in developing successful public-private partnerships. Specific examples of emerging technologies that are prime for investment in terms of their application relevance, industry maturity level, and market need and urgency are discussed in the Appendix. As acknowledged in Executive Order 13840, the ocean is foundational to the economy, security, global competitiveness, and well-being of the United States. The ocean drives economic growth in coastal communities and supports industries that employ millions, providing essential food, transportation, recreation, and energy security. To sustain these benefits, the order emphasizes modernizing ocean science through partnerships with multiple sectors to inform better decision-making and foster entrepreneurial opportunity. This must include the development of new technologies that enhance our knowledge of coastal and open ocean systems, from surface waters to deep-sea sediments. Public-private partnerships serve as a critical driver for advancing technological development. However, this requires a careful analysis of the challenges that private sector partners face when considering investments and identifying opportunities for state and Federal agencies to enhance collaborations. Building upon the findings from the 2019 White House Summit on Partnerships in Ocean Science and Technology (OSTP, 2019), reports from the National Academies of Science, Engineering and Medicine Ocean Studies Board (NASEM 2018; 2020; 2021; 2022a; 2022b; 2025), and the 2018 Executive Order Regarding the Ocean Policy to Advance the Economic, Security, and Environmental Interests of the United States (EO 13840, 2018), among others, this Ocean Research Advisory Panel (ORAP) report is focused on key challenges in (i) creating opportunities for market growth, and (ii) improving partnership mechanisms. These challenges are discussed below, along with specific recommendations and potential mechanisms to expand opportunities for public-private partnerships that advance emerging ocean technologies. This ORAP recommends that the Administration use or seek the authority to implement the recommendations identified in this report.”

Thank you sincerely for these opportunities to contribute to your work, and for the opportunity to serve the State of Alaska, and our nation, through these contributions.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. LISA BLUNT ROCHESTER TO
NATHAN WARDWELL

Topic: Emerging Technologies

Question 1. In what ways are artificial intelligence and robotics technology shaping the field of marine observation?

Answer. Artificial intelligence and robotics are reshaping marine observation primarily as force multipliers. They expand what a given investment in people and equipment can accomplish.

The traditional approach to seafloor mapping deploys a crewed vessel equipped with acoustic sensors that bounce sound off the seafloor to measure water depth and bottom geometry. This method is constrained by the number of available vessels and people to operate it while at sea for extended periods of time. Artificial intelligence and robotics reduce that constraint because a crewed vessel can now operate alongside autonomous surface vessels (ASVs) and uncrewed underwater vehicles (UUVs), each equipped with their own sensor suites multiplying the area mapped in a single deployment. ASVs rely on artificial intelligence to operate safely without a crew on board. Artificial intelligence provides real-time collision avoidance, route optimization, and adaptive response to changing sea conditions. Both ASVs and UUVs require sophisticated robotics for the integration of propulsion, sensor, and communication hardware.

Artificial intelligence's role in data processing is also increasing. Modern multi-beam sonar systems, Light Detection and Ranging (LiDAR) sensors, and imaging platforms generate data volumes that make manual review impractical at scale. The implementation of artificial intelligence for automated feature detection in digital elevation models, change detection across time-series datasets and anomaly identification significantly reduces processing labor. Reducing the time required to extract operationally meaningful information from large geospatial datasets increases the number of decisions that can be made and improves the speed at which they can be made.

Question 2. What technology skill gaps are you seeing among the workforce that need to be addressed?

Answer. The technology skill gaps I see in the hydrographic services workforce are in artificial intelligence, data science, geodesy and robotics.

Artificial intelligence is becoming embedded in business operations across sectors, however for the everyday user in a business gaps remain in understanding how artificial intelligence works, how to deploy it at scale and to what extent it can be trusted without human supervision. In a field where the data products generated inform navigation safety, flood forecasting, and resource management decisions trust in the data is imperative.

The mapping industry, both land and water, has undergone a fundamental transformation, moving from single stationary sensors to multiple different sensors simultaneously on mobile platforms and satellite-based signals. Private companies are now building LiDAR systems small enough to mount on commercially available drones for shallow coastal mapping. They are also building autonomous surface vessels capable of extended offshore campaigns with full acoustic sensor suites. As the demand for geospatial data from systems like these accelerates, we need engineers and scientists with the skills to design, build, operate and maintain this technical hardware and software at scale.

Geodesy, the science of precisely measuring and understanding the Earth's shape, orientation and gravity field, is foundational to all of this. The full value of hydrographic data cannot be realized without accurate positioning and accurate positioning requires geodetic expertise. Without geodesists, the datum consistency that ties a bathymetric survey to a tide gauge to a flood model to a legal boundary cannot be maintained.

Finally, data science. The volume of geospatial data being generated by modern survey platforms is well beyond what a team can process manually. Leveraging data science tools with artificial intelligence to automate processing pipelines, detect features, validate data quality, and extract actionable intelligence is becoming a baseline operational requirement. Training the existing hydrographic workforce in these skills, and building them into entry-level education programs, is one of the most high-leverage investments industry and government can make together.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. LISA BLUNT ROCHESTER TO
CLAY HEIL

Maritime Industrial Base—Port Infrastructure

Question 1. During a time of investment uncertainty and skyrocketing energy costs, the administration also cut millions in grants to support the maritime industry in developing offshore wind energy. Mr. Heil, does this decision also undermine investment in port infrastructure?

Answer. Reducing or cancelling Federal support for maritime related energy projects creates uncertainty for companies, ports, vessel operators, shipyards, and equipment suppliers that must make long-term capital investments to support those projects. Port infrastructure projects require years of planning, permitting, financing, procurement, and construction. When Federal policy changes abruptly, it becomes more difficult for private companies and public port authorities to justify investments that depend on a stable pipeline of cargo, vessels, and energy projects.

Question 2. The administration has proposed replacing most of the current Port Infrastructure Development Program funding with a tax on foreign vessels. Do U.S. companies have enough confidence in this funding scheme to make long-term investments in port infrastructure? Will this end up just being a tax on consumer goods?

Answer. Ports and U.S. companies strongly prefer predictable funding streams that allow them to plan for long-term infrastructure investments. A funding mechanism dependent on fees assessed against foreign vessels would likely provide less certainty because collections could vary based on the vessels subject to the fee, the applicable fee levels, and changes in carrier behavior.

Depending on how the fee is structured, carriers may adjust their vessel deployments or port calls to avoid or reduce the assessment, which could reduce anticipated revenue. It is also possible that some or all of the additional costs would be passed through the supply chain in the form of higher freight rates for affected voyages.

The Port Infrastructure Development Program has been extremely helpful in expanding and modernizing port capacity, particularly for projects that require multi-year planning and private capital commitments. Stable and predictable funding streams provide the certainty needed to support those investments.

Question 3. Would a bipartisan process like that in the Infrastructure Investment and Jobs Act (IIJA) provide more certainty for companies planning to invest in port infrastructure?

Answer. Multi-year funding authorizations, such as the surface transportation reauthorization, provide greater certainty for long-term, capital intensive projects. Port infrastructure projects often require environmental reviews, engineering, dredging, terminal upgrades, landside connections, utility work, equipment purchases, and coordination among multiple public and private entities.

A multi-year funding authorization for port infrastructure would provide the maritime sector with a clear signal that the Federal government views port infrastructure as a national priority. That kind of year-over-year stability helps companies make investment decisions, hire workers, order equipment, and coordinate with ports and public agencies.

Maritime Industrial Base—Port Equipment

Question 4. Over 70 percent of the world's ship-to-shore cranes are made by a Chinese company—ZPMC. Do you believe that there is currently a sufficient domestic industry for critical domestic port equipment to compete with these Chinese-made cranes?

Answer. The United States does not currently have a sufficient domestic industrial base to compete at scale with Chinese-made ship-to-shore cranes. Dependence on a single foreign manufacturer creates both economic and national security concerns. Ship-to-shore cranes are essential pieces of infrastructure at container ports and are not easily replaced because of their cost, complexity, and the limited number of available manufacturers.

Both the prior and current Administrations have recognized the importance of reducing the risks associated with dependence on foreign manufactured port equipment and strengthening domestic maritime industrial capacity. Rebuilding this capability, however, will require a sustained strategy, long-term investment, and a realistic transition plan for ports.

Question 5. What would be the likely timeline to expand or create a domestic supply chain for critical port equipment like these cranes?

Answer. Crowley is not involved in the manufacture of ship-to-shore cranes and, therefore, is not in a position to provide a reliable estimate of the time required to

establish the necessary domestic manufacturing capacity and supply chain. Any realistic timeline would need to account for engineering capabilities, component sourcing, manufacturing facilities, workforce development, financing, regulatory requirements, and sufficient long-term demand to support private investment.

Question 6. In your view, does this administration have an adequate strategy for reshoring ship-to-shore crane production in the near term?

Answer. Crowley is not involved in the manufacture of ship-to-shore cranes and, therefore, is not in a position to fully assess the adequacy of the Administration's plans to reconstitute production in the United States. As a general matter, any successful strategy should provide clear and sustained demand signals, support workforce and supply chain development, and include a transition plan that allows ports to continue obtaining and maintaining the equipment necessary for efficient operations.

