



# A SMART INVESTMENT IN OUR COASTAL ECONOMY

Winter 2022

For over 50 years, the National Sea Grant College Program (Sea Grant) has supported coastal and Great Lakes communities through research, extension and education.

**1,332**   
businesses created or sustained

**11,044**  
jobs created or sustained

## EXTENSION RESEARCH EDUCATION

Sea Grant's mission is to enhance the practical use and conservation of coastal, marine and Great Lakes resources in order to create a sustainable economy and environment.

In 2020, a federal investment in Sea Grant of \$87 million resulted in

**\$519.5M**  
ECONOMIC  
BENEFIT

**1,335**  
resilience training events provided to communities

**191,455**  
K-12 students reached

**34**

university-based programs

**4,219,094**

acres of habitat restored or protected

**209,004**

volunteer hours



**701** SEA GRANT  
EXTENSION AGENTS\*

are stationed in communities across the country to advance understanding of coastal and fisheries science for communities and economies that are more resilient.



Metrics are direct results of Sea Grant work between February 1, 2020 and January 31, 2021 as reported by Sea Grant programs in Summer 2021. Economic benefit = market and non-market value of Sea Grant's work; value of jobs and businesses (\$369.7M) as well as total leveraged funds (\$143.8M) and value of volunteer hours (\$6M).

Photo credits: California Sea Grant, Oregon Sea Grant, Virginia Sea Grant  
\*Extension agents refers to total number of Sea Grant-affiliated extension agents. Sea Grant extension full-time equivalents = 220.



# Valuing and actively supporting diversity, equity, and inclusion

The ways in which people interact with their communities and natural resources are a function of their beliefs, values, needs, and life experiences. By explicitly incorporating diverse perspectives and inclusively collaborating across stakeholder groups, Sea Grant can foster more equitable and sustainable natural resource management, and resilient communities and economies.

## Georgia Sea Grant Helps Promote Environmental Justice in Glynn County

From November 2020 through March 2021, Glynn County's Environmental Justice Advisory Board held its first ever Environmental Justice Academy with support from Georgia Sea Grant, preparing citizens to become change agents in their communities. A theme throughout the academy was the importance of healthy coastal ecosystems to protect human health for all citizens. The academy graduated nine individuals, who made a commitment to pursue related projects in their communities.

## Hawai'i Sea Grant Trains Food Service Workers Impacted by Pandemic

Hawai'i Sea Grant and partners led a seven-week course on revitalizing Indigenous food systems and associated food culture for food industry employees facing career impacts as a result of the COVID-19 pandemic. The distance-learning course focused on the Indigenous foods of Heeia, encompassing history, ecology, cultural practices, cultivation and harvesting techniques, and methods for preparing and preserving. Graduates are able to serve as informal educators for native foods.

## Illinois-Indiana Sea Grant Educates on Water Affordability & Equity Issues

Illinois-Indiana Sea Grant collaborated with partners to better understand the extent of water affordability issues in northeastern Illinois and place an equity lens on water access. In 2020, Illinois-Indiana Sea Grant informed 500 Chicago-area water managers about steps and strategies to address water affordability concerns, and provided technical assistance to the City of Evanston in developing water affordability rate recommendations.

Sea Grant is working to actively advance diversity, equity, and inclusion throughout our work across four focus areas:

**healthy coastal ecosystems, resilient communities and economies, sustainable fisheries and aquaculture, and environmental literacy and workforce development.**

**More information at [seagrant.noaa.gov/values](https://seagrant.noaa.gov/values)**





# Protecting and restoring healthy coastal habitats

Sea Grant programs work across institutional barriers to help coastal communities and businesses engage with federal, state and local entities on important coastal issues.

As a result of Sea Grant's work in 2020,

# 3,992

resource managers used ecosystem-based approaches to management

## Blue Carbon

Over the past decade, development of carbon offset markets has been a priority of coastal resource managers and conservation organizations. MIT Sea Grant developed a model that provides baseline reference values for total salt marsh area and estimated carbon storage by state and coast-wide for the northeast and mid-Atlantic regions. This information is being used as a baseline reference by the EPA and partners as they further refine their final calculations and carbon credit program values.



## Ocean Acidification

A Virginia Sea Grant Graduate Research Fellow collaborated to create a 3D ecosystem modeling system and applied it to identify the primary drivers of Chesapeake Bay acidification over the past three decades. The results demonstrated that as nutrient reduction efforts to improve coastal water quality continue in the future, controlling the emissions of anthropogenic carbon dioxide globally becomes increasingly important for the shellfish industry and the ecosystem services it provides.

## Marine Debris

Sea Grant partners with the NOAA Marine Debris Program to address marine debris challenges across the country. Since 2020, this partnership has collaboratively funded 14 projects that research, prevent and remove marine debris in U.S. waters. One such project, led by Wisconsin Sea Grant, will pilot a theatrical piece about marine debris science to educate and motivate prevention of land-based marine debris and prevention of microplastics in wastewater in two Lake Michigan communities.

# 584

communities adopted sustainable development practices

and

# 97

cumulative Clean Marina Program certifications were achieved.

## Restoration

The Mississippi-Alabama Sea Grant-supported Mississippi Master Naturalist Program was formed with the mission of developing an organization of knowledgeable volunteers to help promote conservation and management of Mississippi's natural resources through education, outreach and service within their communities. Through 2,801 volunteer service hours in 2020, participants educated more than 2,861 people and improved 6,792 acres with stewardship activities.

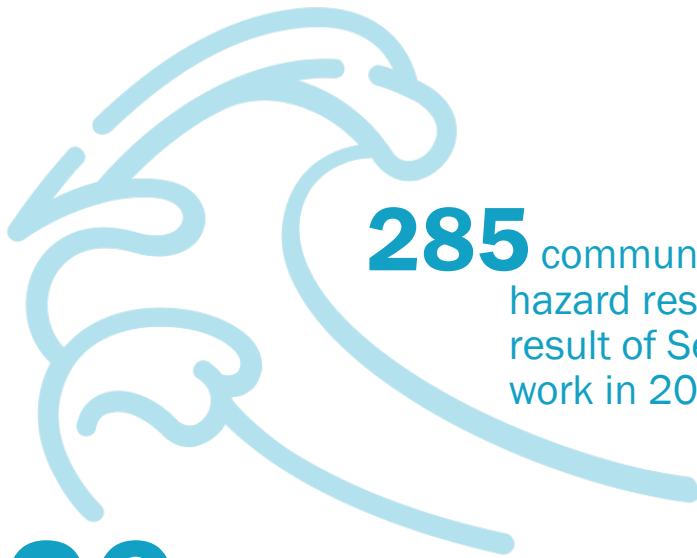
**More information at**  
[seagrant.noaa.gov/Our-Work/HCE](https://seagrant.noaa.gov/Our-Work/HCE)





# Helping communities plan, adapt and recover

Communities seek Sea Grant expertise to support and sustain diverse and vibrant economies. This includes effectively planning for, responding to and recovering from natural and technological hazards.



**285** communities improved hazard resilience as a result of Sea Grant's work in 2020

**26** Sea Grant programs are Weather-Ready Nation Ambassadors

## USC Sea Grant Interdisciplinary Collaboration Assesses Sea Level Rise Vulnerability

A collaboration between academics, marine resource managers, and the Tolowa Dee-ni' Nation, funded by USC Sea Grant, is assessing sea level rise vulnerability at three ecologically, economically, and culturally significant sites along the Southern California coast. The project is producing high-resolution data to visualize and provide measures for current and future management of resources, while empowering historically marginalized Indigenous Nations to utilize cutting edge technology.

## Texas Sea Grant Builds Legal Capacity Along the Texas Coast

Low-capacity Texas coastal communities encountered coastal and marine legal and policy issues following Hurricane Harvey in 2017, but they did not have the financial resources to hire legal counsel. Texas Sea Grant led a needs assessment survey and workshop to identify and determine how to meet the legal needs of low-capacity Texas coastal communities. Through support from the National Sea Grant Law Center and other partners, these solutions are being implemented.

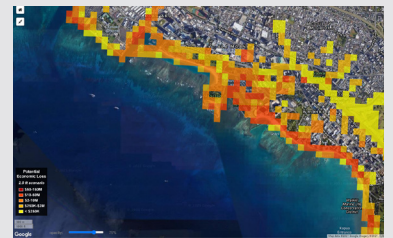
**More information at**  
[seagrant.noaa.gov/Our-Work/RCE](http://seagrant.noaa.gov/Our-Work/RCE)

Explore interactive features on Sea Grant's work in resilience



### Relief that Restores

Sea Grant rapid response investments in 2020 aided local restoration efforts and provided immediate relief to aquaculture producers whose sales were impacted by the pandemic.



### Community Resilience from Start to Finish

See how Sea Grant programs are helping coastal communities increase their resilience to impacts of changing conditions at every step of the way.



### Preparedness Web Page

Find tips and resources on coastal hazards preparedness, including Sea Grant's Homeowners and Residents Handbooks.



### Resilient Island Communities

In this episode of Sea Grant's On My Coast podcast, explore how governments, researchers, nonprofits and community members have come together to tackle the unique challenges islands face.



# Advancing sustainable fisheries & aquaculture through research and outreach

Sea Grant is a leader in developing innovative technologies for all sectors of the seafood industry, including fishing, aquaculture, seafood processing and consumer safety. Research, education and extension efforts are focused on ensuring a safe and sustainable supply of seafood products for current and future generations.



## American Lobster Initiative Improves Fishery's Resilience

Sea Grant's American Lobster Initiative provides research and extension funding to address critical gaps in knowledge about how American lobster is being impacted by environmental change in the Gulf of Maine, Georges Bank and southern New England. Together, the research and extension components of this initiative develop and share new knowledge with stakeholders from Maine to New York to increase the American lobster industry's resilience.

# 11,359


people modified practices based on knowledge of fisheries sustainability and seafood safety gained in 2020 Sea Grant activities

## Reef Fish Science & Outreach Enhances Management

With the support of Congress, Sea Grant funds critical research to determine the abundance of red snapper and amberjack in the Gulf of Mexico and the South Atlantic. In 2021, the Great Red Snapper Count released its findings that there are more than 118 million red snapper in the U.S. waters of the Gulf of Mexico. As research continues, Sea Grant extension programming will directly connect end-users with the latest science related to reef fish stocks, which will enhance the management of these highly prized species.

## Aquaculture Hubs Accelerate Industry Development

As part of Sea Grant's 2019 National Aquaculture Initiative, 11 funded projects accelerate the development of specific aquaculture topics through integrated teams of professionals. One such "Hub" is a collaborative network of Pacific-region Sea Grant offices, Northwest Tribes and First Nations, Native Hawaiian and Indigenous communities, and organizations and universities that integrate community engagement, restoration, research, and education to advance Indigenous Aquaculture in the Pacific.

See the AquaFort, a new model for sustainable, small-scale finfish aquaculture, in action 



# 1,476

seafood HACCP safety certifications as a result of 2020 Sea Grant trainings



More information at [seagrant.noaa.gov/Our-Work/SFA](https://seagrant.noaa.gov/Our-Work/SFA)

Graphic credit: Slidesgo  
Photo credit: Virginia Sea Grant



# Training a diverse and environmentally literate workforce

Sea Grant works to create a diverse workforce trained in marine science, technology, engineering, mathematics, law and policy. Training programs and education materials help build an environmentally literate workforce that understands and utilizes best available science to make informed decisions.

## Creative Education Programming Reaches Students Across the Country

With the transition to remote learning during the COVID-19 pandemic, Sea Grant programs worked quickly to develop engaging, online educational content. This included Oregon Sea Grant's adapted summer camps, which featured a hybrid virtual format and optional socially-distanced activities on the coast, along with Woods Hole Sea Grant's popular NOAA Live! 4 Kids webinar series, which provides opportunities for kids to interact with scientists and learn about careers at NOAA.

## Undergraduate Internship Program Connects Diverse Students with Communities

Sea Grant's recently formed Community Engaged Internship program broadens participation in marine and coastal professions by providing training and mentorship to the next generation of scientists, decision makers and citizens. The program recruits, retains and engages undergraduate students from underrepresented and indigenous communities in place-based research, extension, education and communication that respects and integrates local ways of knowing.



## “Food from the Sea” Projects will Identify Young Fishermen’s Training Needs

Sea Grant and NOAA's Office of Sustainable Fisheries are supporting 11 projects across the U.S. that will identify training needs and develop new resources with members of the fishing industry. Projects range in size, scope, and design that are as diverse as the localized needs they aim to address. These efforts will also allow Sea Grant Programs, industries and communities to plan for potential upcoming opportunities associated with the Young Fishermen's Development Act.

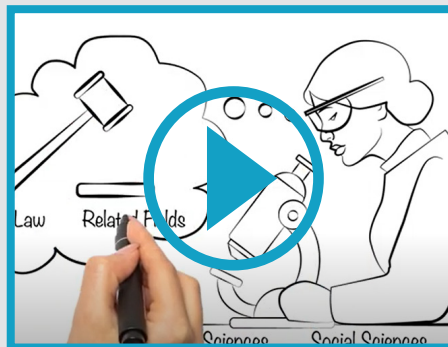
In 2020, **569** Sea Grant-supported graduates became employed in a job related to their degree within two years of graduation.

**1,489** Sea Grant Knauss Fellows placed in federal and congressional offices since 1979

The Sea Grant Knauss Fellowship provides a unique educational and professional experience to graduate students who have an interest in ocean, coastal and Great Lakes resources and in the national policy decisions affecting those resources. The Fellowship matches highly qualified graduate students with “hosts” in the legislative and executive branches of government located in the Washington, D.C. area for one-year paid fellowships. This program is an effective hiring pipeline for NOAA and other federal agencies, increasing both

experience for early career professionals and the diversity of the federal workforce.

Learn more about the Knauss Fellowship in this quick-draw video



More information at [seagrant.noaa.gov/Our-Work/ELWD](http://seagrant.noaa.gov/Our-Work/ELWD)